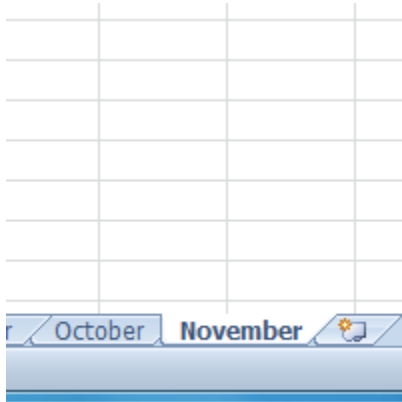




Lesson7-Worksheet Basics

Introduction



Every Excel **workbook** contains at least one or more **worksheets**. If you are working with a large amount of related data, you can use worksheets to help organize your data and make it easier to work with.

In this lesson, you will learn how to **name** and **add color** to worksheet tabs, and how to **add, delete, copy,** and **move** worksheets. Additionally, you will learn how to **group** and **ungroup** worksheets, and **freeze** columns and rows in worksheets so that they remain visible even when you are scrolling.

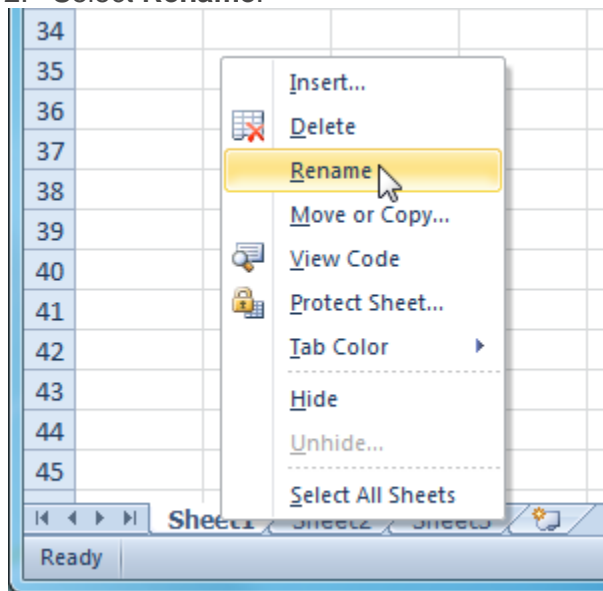
Introduction to Worksheets

When you open an Excel workbook, there are **three worksheets** by default. The default names on the worksheet tabs are **Sheet1, Sheet2** and **Sheet3**. To organize your workbook and make it easier to navigate, you can rename and even color-code the worksheet tabs. Additionally, you can insert, delete, move, and copy worksheets.



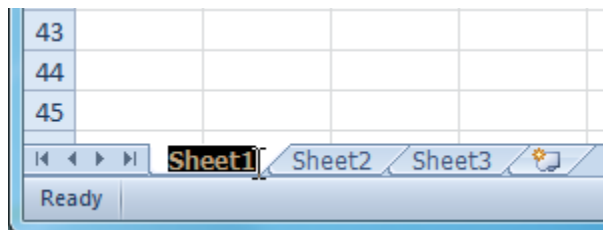
To Rename Worksheets:

1. Right-click the **worksheet tab** you want to rename. The **worksheet** menu appears.
2. Select **Rename**.



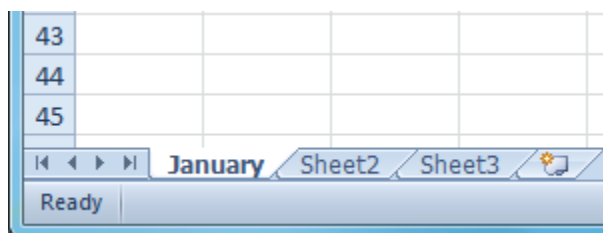
Selecting the Rename command

3. The text is now highlighted by a black box. Type the name of your worksheet.



Renaming the worksheet

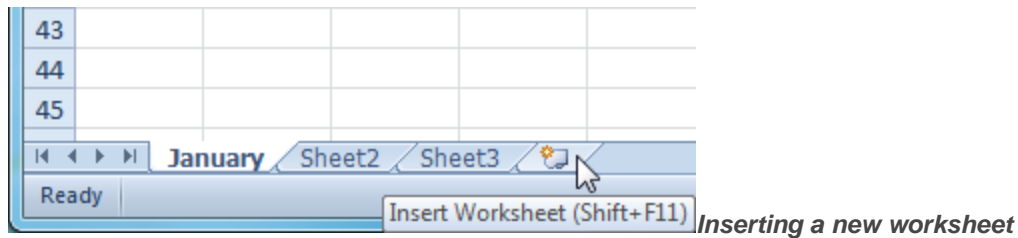
4. Click anywhere outside of the tab. The worksheet is renamed.



Renamed worksheet

To Insert New Worksheets:

Click on the **Insert Worksheet** icon. A new worksheet will appear.

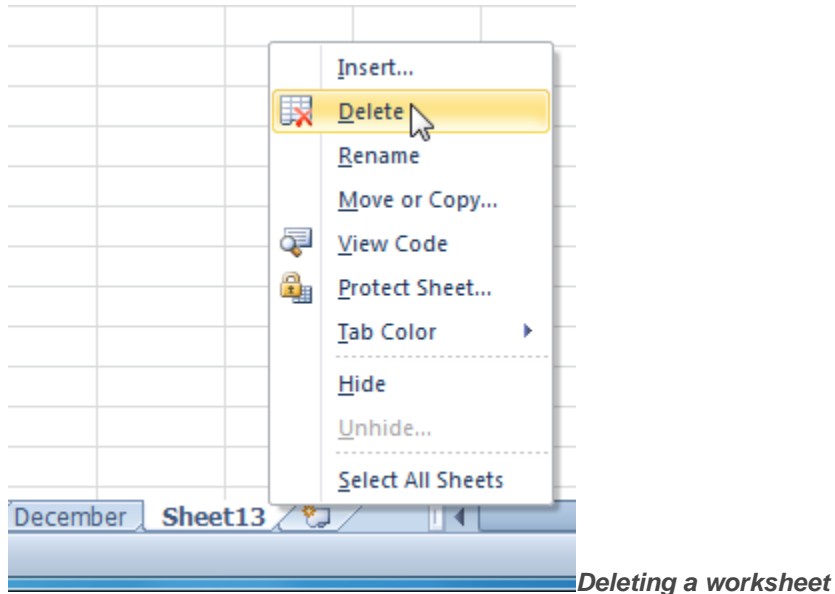


You can change the setting for the default number of worksheets that appear in Excel workbooks. To access this setting, go into **Backstage view** and click on **Options**.

To Delete Worksheets:

Worksheets can be deleted from a workbook, including those that contain data.

1. Select the worksheets you want to delete.
2. Right-click one of the selected worksheets. The **worksheet** menu appears.
3. Select **Delete**. The selected worksheets will be deleted from your workbook.

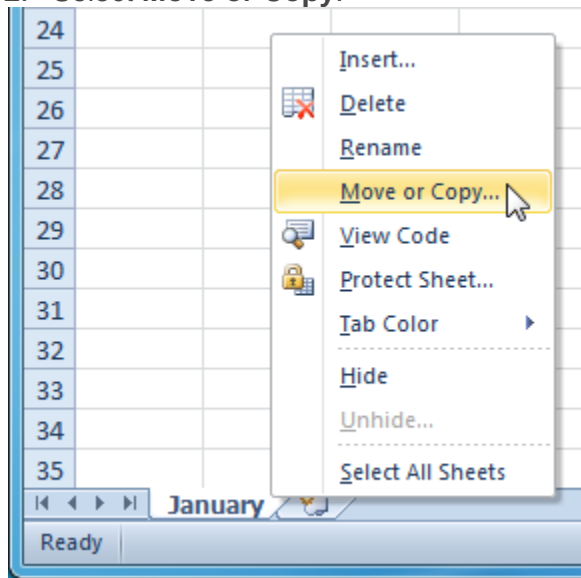


To Copy a Worksheet:

1. Right-click the worksheet you want to copy. The **worksheet** menu appears.

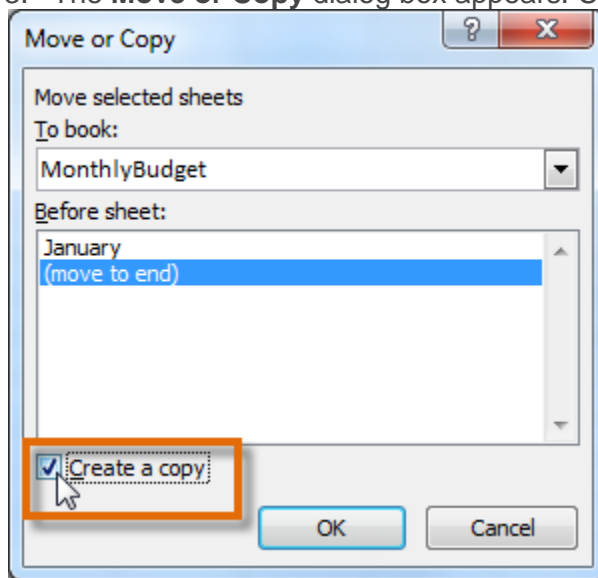


2. Select **Move or Copy**.



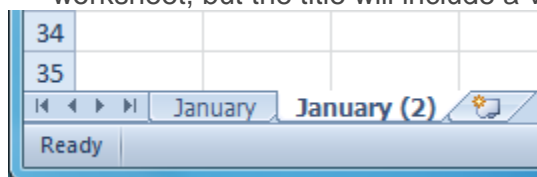
Selecting the Move or Copy command

3. The **Move or Copy** dialog box appears. Check the **Create a copy** box.



Checking the Create a copy box


4. Click **OK**. Your worksheet is copied. It will have the same title as your original worksheet, but the title will include a version number, such as "January (2)".

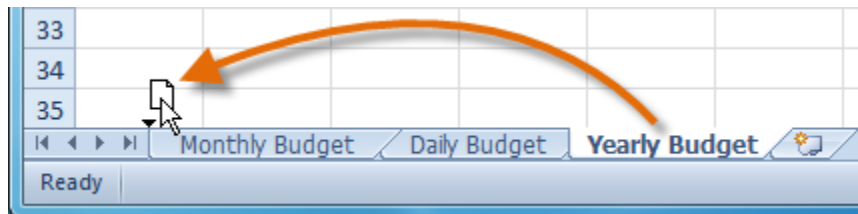


Copied worksheet



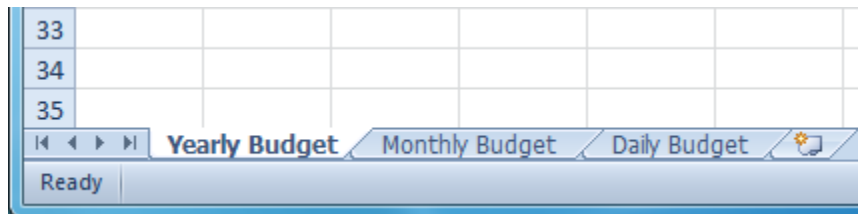
To Move a Worksheet:

1. Click on the worksheet you want to move. The mouse will change to show a small worksheet icon .
2. Drag the worksheet icon until a small black arrow ▼ appears where you want the worksheet to be moved.



Moving a worksheet

3. Release your mouse and the worksheet will be moved.

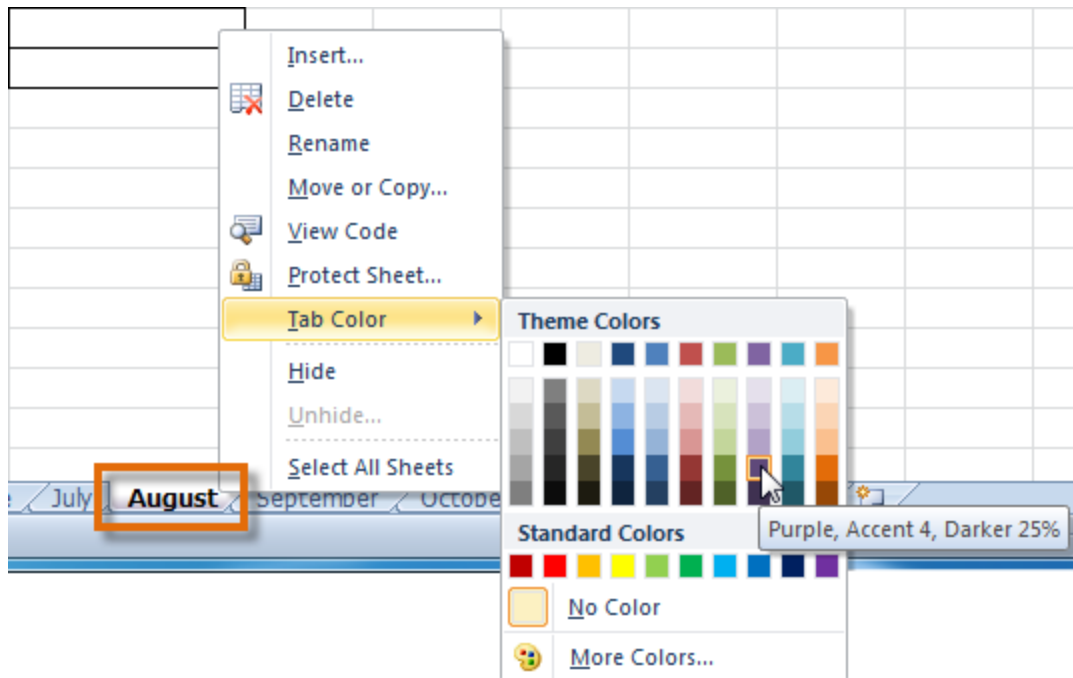


Moved worksheet

To Color-Code Worksheet Tabs:

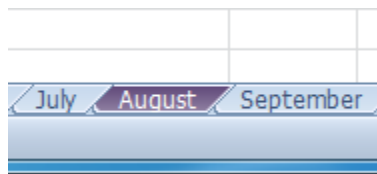
You can color worksheet tabs to help organize your worksheets and make your workbook easier to navigate.

1. Right-click the worksheet tab you want to color. The **worksheet** menu appears.
2. Select **Tab Color**. The **color** menu appears.
3. Select the color you want to change your tab.



Changing the worksheet tab color

4. The tab color will change in the workbook. If your tab still appears white, that is because the worksheet is still selected. Select any other worksheet tab to see the color change.



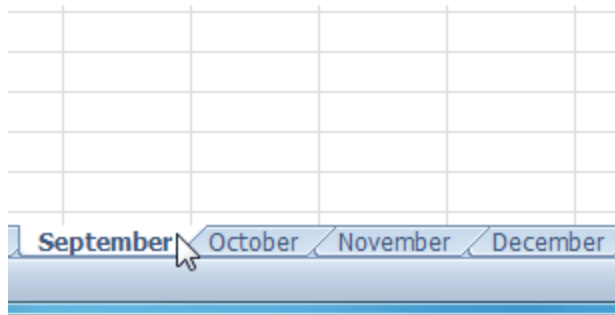
Worksheet tab color changed

Grouping and Ungrouping Worksheets

You can work with each worksheet in a workbook individually, or you can work with multiple worksheets at the same time. Worksheets can be combined together into a group. Any changes made to one worksheet in a group will be made to every worksheet in the group.

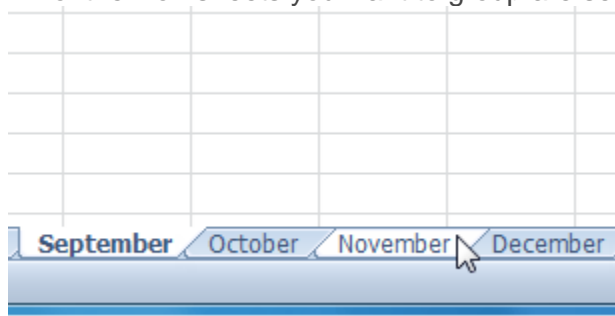
To Group Worksheets:

1. Select the **first worksheet** you want in the group.



Selecting the first worksheet to group

2. **Press and hold the Ctrl key** on your keyboard.
3. Select the **next worksheet** you want in the group. Continue to select worksheets until all of the worksheets you want to group are selected.



Selecting additional worksheets to group

4. **Release the Ctrl key.** The worksheets are now grouped. The worksheet tabs appear white for the grouped worksheets.

While worksheets are grouped, you can navigate to any worksheet *in* the group and make changes that will appear on every worksheet in the group. If you click on a worksheet tab that is not in the group, however, all of your worksheets will become ungrouped. You will have to regroup them.

To Ungroup All Worksheets:

1. Right-click one of the worksheets. The **worksheet** menu appears.
2. Select **Ungroup**. The worksheets will be ungrouped.

Freezing Worksheet Panes

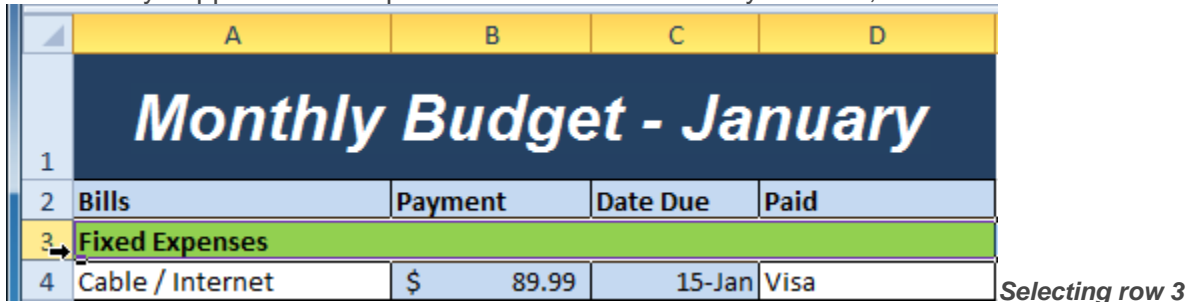
The ability to freeze specific rows or columns in your worksheet can be a very useful feature in Excel. It is called **freezing panes**. When you freeze panes, you



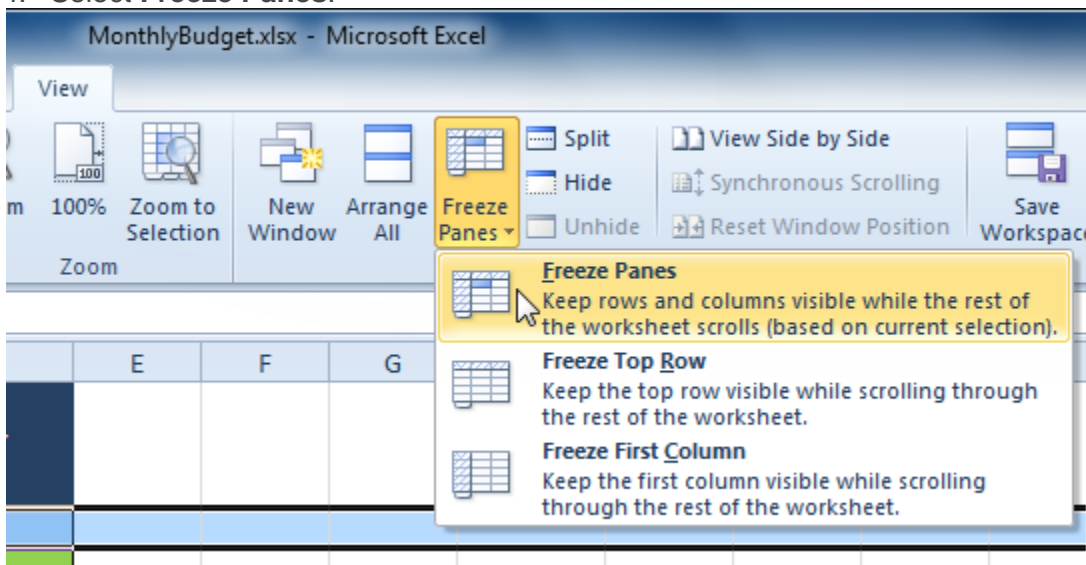
select rows or columns that will remain visible all the time, even as you are scrolling. This is particularly helpful when working with large spreadsheets.

To Freeze Rows:

1. Select the row *below* the rows that you want frozen. For example, if you want rows 1 & 2 to always appear at the top of the worksheet even as you scroll, then select row 3.



2. Click the **View** tab.
3. Click the **Freeze Panes** command. A drop-down menu appears.
4. Select **Freeze Panes**.



Selecting the Freeze Panes command from the View tab

5. A black line appears *below* the rows that are frozen in place. Scroll down in the worksheet to see the rows below the frozen rows.



	A	B	C	D	E	F	G
1	Monthly Budget - January						
2	Bills	Payment	Date Due	Paid			
12	Gas	\$ 160.00	6-Jan	Discover			
13	Pets	\$ 65.00	10-Jan	Visa			
14	Water	\$ 28.23	21-Jan	Visa			
15	Other						
16	Clothes	\$ 18.54	8-Jan	Store Credit Card			
17	Misc.	\$ 98.06	6-Jan	Discover			
18	Restaurants	\$ 156.71	6-Jan	Discover			
19							
20	Credit Payment						
21	Discover	\$ 1,108.31	6-Jan	Yes			

Rows 1 and 2 are frozen above this black line

Rows 1 and 2 are frozen

To Freeze Columns:

1. Select the column to the *right* of the columns you want frozen. For example, if you want columns A & B to always appear to the left of the worksheet even as you scroll, then select column C.

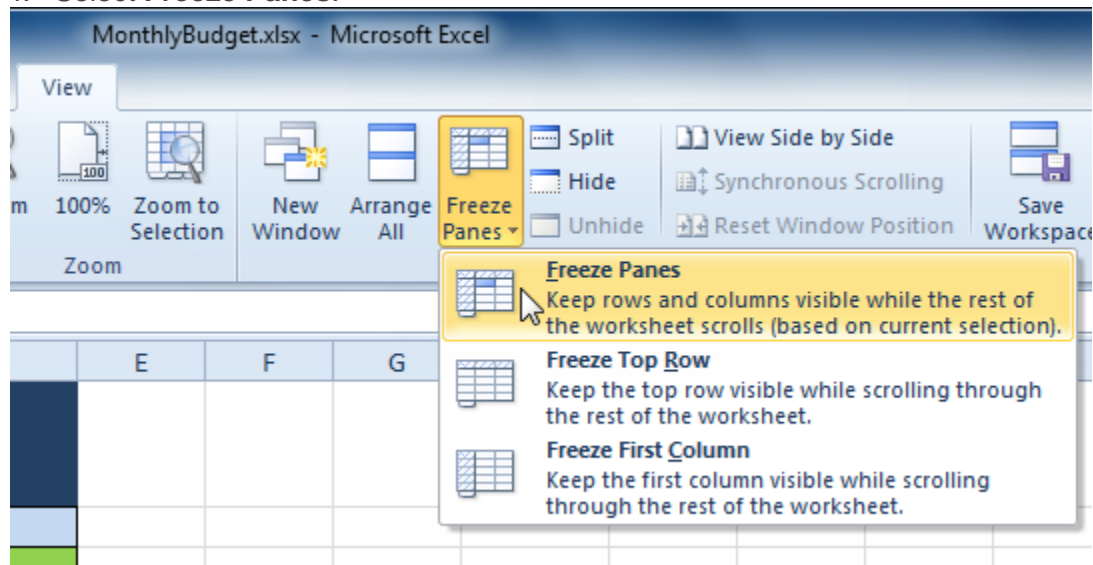
	A	B	C ↓	D	E	F
1						Variable Expenses
2	Variable Expenses	January	February	March	April	May
3						
4	Cell Phone	\$ 47.99	\$ 53.62	\$ 55.64	\$ 52.31	\$ 50.00
5	Clothes	\$ 55.24	\$ 10.24	\$ -	\$ 157.44	\$ 10.00
6	Gas	\$ 100.00	\$ 120.49	\$ 125.30	\$ 153.00	\$ 100.00
7	Groceries	\$ 230.23	\$ 203.50	\$ 189.35	\$ 125.00	\$ 200.00
8	Home Phone	\$ 30.50	\$ 32.68	\$ 31.67	\$ 32.55	\$ 30.00
9	Power	\$ 57.22	\$ 68.65	\$ 52.65	\$ 55.98	\$ 50.00
10	Restaurants	\$ 24.45	\$ 78.24	\$ 50.21	\$ 60.24	\$ 50.00
11	Water	\$ 44.88	\$ 52.84	\$ 50.36	\$ 32.41	\$ 40.00
12	Total	\$ 590.51	\$ 620.26	\$ 555.18	\$ 668.93	\$ 600.00
13	Total Year	\$ 590.51	\$ 1,210.77	\$1,765.95	\$ 2,434.88	\$ 3,100.00

Selecting column C

2. Click the **View** tab.
3. Click the **Freeze Panes** command. A drop-down menu appears.



4. Select **Freeze Panes**.



Selecting the *Freeze Panes* command from the *View* tab

5. A black line appears to the *right* of the frozen area. Scroll across the worksheet to see the columns to the right of the frozen columns.



ITEC106-Excel 2010 Lecture Notes

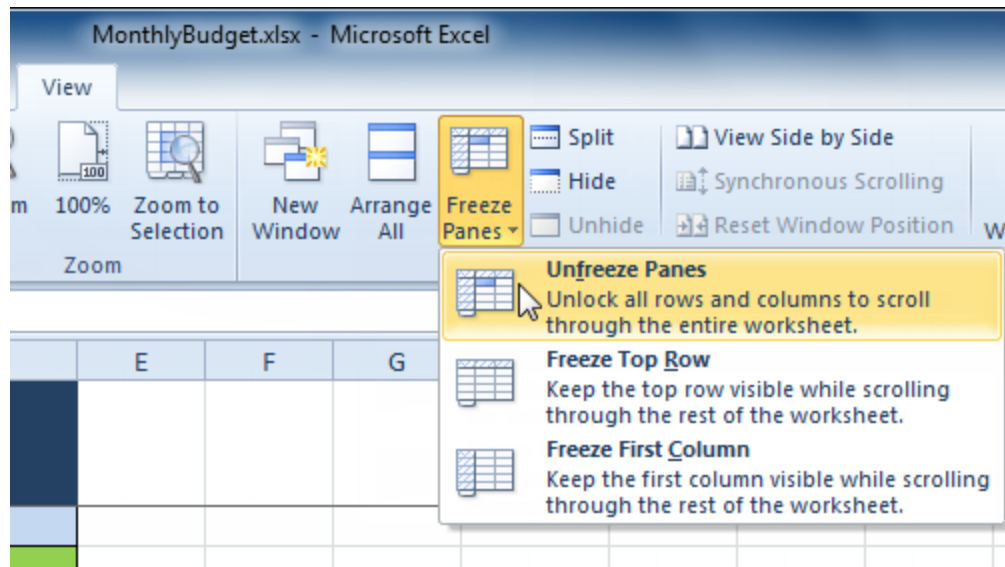
	A	B	F	G	H	I
1	Variable Expenses					
2	Variable Expenses	January	May	June	July	August
3						
4	Cell Phone	\$ 47.99	\$ 49.87	\$ 47.86	\$ 41.30	\$ 49.40
5	Clothes	\$ 55.24	\$ 24.25	\$ 46.42	\$ -	\$ 204.24
6	Gas	\$ 100.00	\$ 146.42	\$ 107.77	\$ 106.28	\$ 113.12
7	Groceries	\$ 230.23	\$ 220.78	\$ 208.45	\$ 256.38	\$ 245.12
8	Home Phone	\$ 30.50	\$ 39.87	\$ 43.55	\$ 55.60	\$ 36.88
9	Power	\$ 57.22	\$ 68.21	\$ 88.55	\$ 87.42	\$ 75.32
10	Restaurants	\$ 24.45	\$ 79.02	\$ 45.45	\$ 150.42	\$ 46.02
11	Water	\$ 44.88	\$ 41.26	\$ 31.43	\$ 56.86	\$ 48.55
12	Total	\$ 590.51	\$ 669.68	\$ 619.48	\$ 754.26	\$ 818.65
13	Total Year	\$ 590.51	\$ 3,104.56	\$ 3,724.04	\$ 4,478.30	\$ 5,296.95
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						

Columns A and B are frozen to the left of this black line

Columns A and B are frozen

To Unfreeze Panes:

1. Click the **View** tab.
2. Click the **Freeze Panes** command. A drop-down menu appears.
3. Select **Unfreeze Panes**. The panes will be unfrozen and the black line will disappear.



Unfreeze Panes command from the View tab

Selecting the

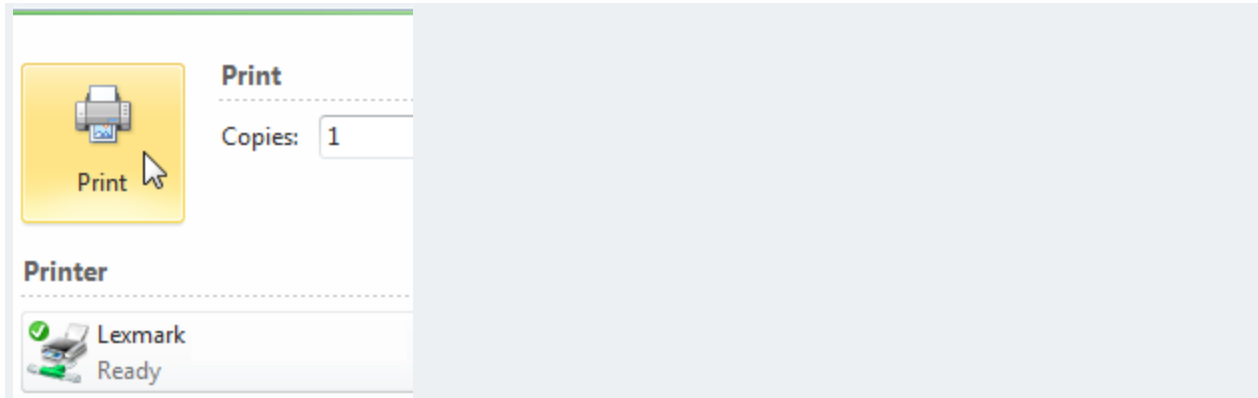
Challenge!

1. Open an existing Excel 2010 workbook. If you want, you can use this lesson7 exer.
2. Insert a new worksheet.
3. Change the name of a worksheet.
4. Delete a worksheet.
5. Move a worksheet.
6. Copy a worksheet.
7. Try grouping and ungrouping worksheets.
8. Try freezing and unfreezing columns and rows.



Lesson8-Printing

Introduction



There are many choices you can make when printing an Excel workbook. You can choose what parts of a workbook to print and how the data fits on the page.

In this lesson, you will learn how to **print worksheets, workbooks, and selections of cells**. You will also learn how to prepare for printing by modifying **page orientation, scale, margins, Print Titles, and page breaks**.

Printing

In previous versions of Excel, there was a **Print Preview** option that allowed you to preview and modify the workbook before printing. You may have noticed that this feature seems to be gone in Excel 2010. It actually has not disappeared; it has just been combined with the **Printwindow** to create the **Print pane**, which is located in **Backstage view**.

To View the Print Pane:

1. Click the **File** tab. This takes you to **Backstage view**.

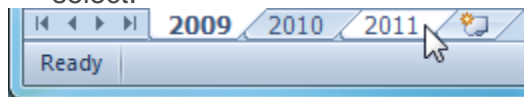


2. Select **Print**. The **Print pane** appears, with the **print settings** on the left and the **Print Preview** on the right.

To Print Active Sheets:

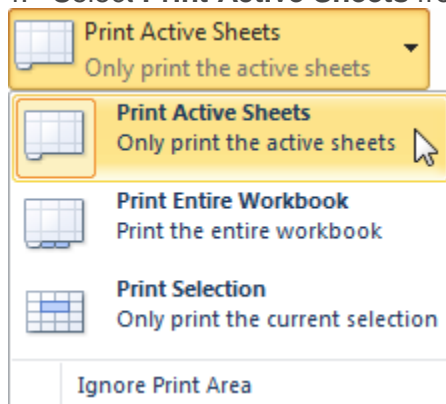
If you have multiple worksheets in your workbook, you will need to decide if you want to print the whole workbook or specific worksheets. Excel gives you the option to **Print Active Sheets**. A worksheet is considered active if it is **selected**.

1. Select the worksheets you want to print. To print multiple worksheets, click on the first worksheet, hold down the **Ctrl key**, then click on the other worksheets you want to select.



Selecting worksheets to print

2. Click the **File** tab.
3. Select **Print** to access the **Print pane**.
4. Select **Print Active Sheets** from the **print range** drop-down menu.

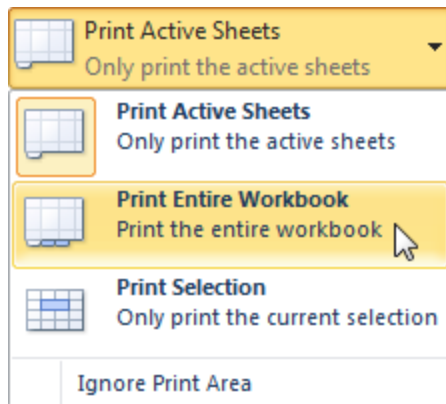


Selecting the Print Active Sheets command

5. Click the **Print** button.

To Print the Entire Workbook:

1. Click the **File** tab.
2. Select **Print** to access the **Print pane**.
3. Select **Print Entire Workbook** from the **print range** drop-down menu.



Selecting the Print Entire Workbook command

4. Click the **Print** button.

To Print a Selection, or Set the Print Area:

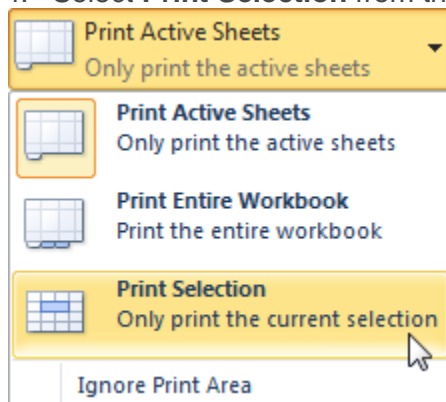
Printing a **selection** (sometimes called setting the **print area**) lets you choose which cells to print, as opposed to the entire worksheet.

1. Select the cells that you want to print.

	A	B	C
1	Employee Name	January	February
2	Allenson, Carol	\$ 5,897.00	\$ 2,356.00
3	Altman, Zoey	\$ 666.00	\$ 6,210.00
4	Aurelio, Fies	\$ 5,889.00	\$ 9,385.00
5	Aurelio, Vig	\$ 8,765.00	\$ 9,258.00
6	Bergman, Jeffery	\$ 1,928.00	\$ 6,595.00
7	Bittiman, William	\$ 4,108.00	\$ 7,172.00
8	Carlson, David	\$ 6,302.00	\$ 358.00
9	Carlton, Potter	\$ 3,647.00	\$ 2,858.00

Selected cells to print

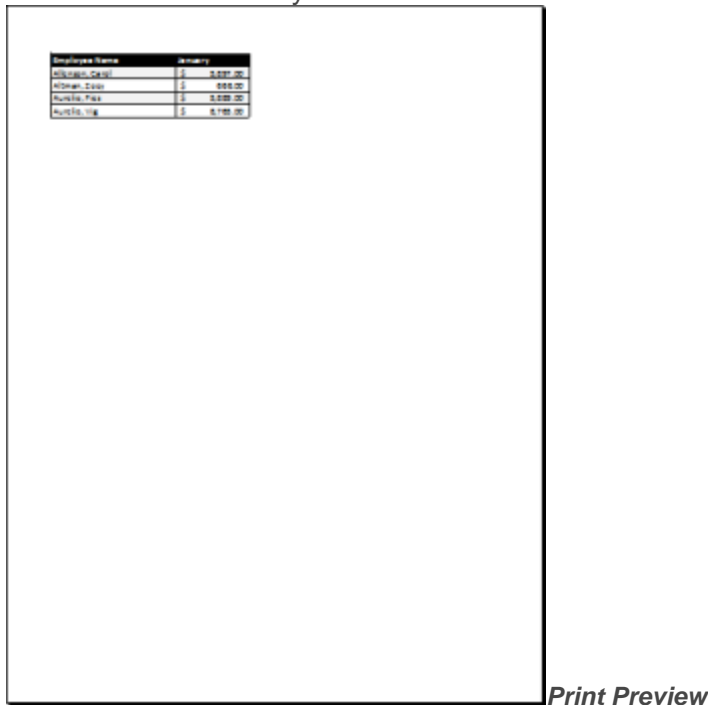
2. Click the **File** tab.
3. Select **Print** to access the **Print** pane.
4. Select **Print Selection** from the **print range** drop-down menu.



Selecting the Print Selection command



5. You can see what your selection will look like on the page in **Print Preview**.



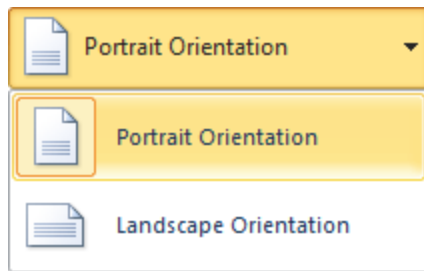
6. Click the **Print** button.

You don't have to wait until you're ready to print to **set the print area**. You can also set it from the **Page Layout** tab in advance. This will place a dotted line around your selection, so you can see which cells are going to print while you work. To do this, just **select** the cells you want to print, go to the **Page Layout** tab, and choose **Print Area**.

To Change Page Orientation:

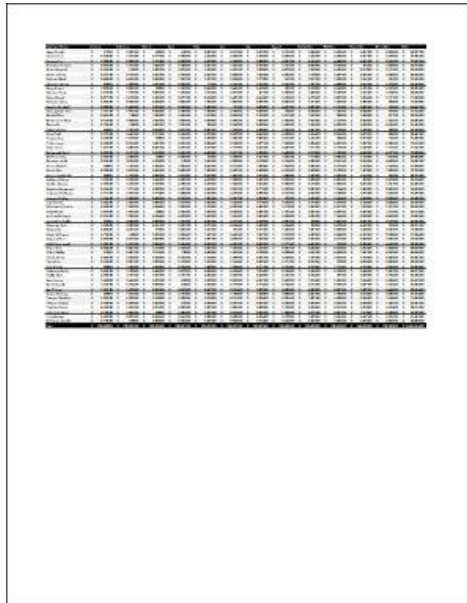
Change the page orientation to **Portrait** to orient the page vertically or **Landscape** to orient the page horizontally. Portrait is useful for worksheets needing to fit **more rows** on one page, and Landscape is useful for worksheets needing to fit **more columns** on one page.

1. Click the **File** tab.
2. Select **Print** to access the **Print pane**.
3. Select either **Portrait Orientation** or **Landscape Orientation** from the **orientation** drop-down menu.

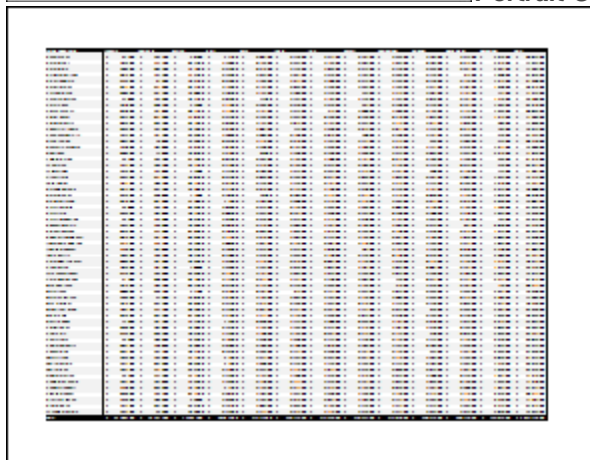


Orientation drop-down menu

4. Your page orientation is changed.



Portrait Orientation in Print Preview



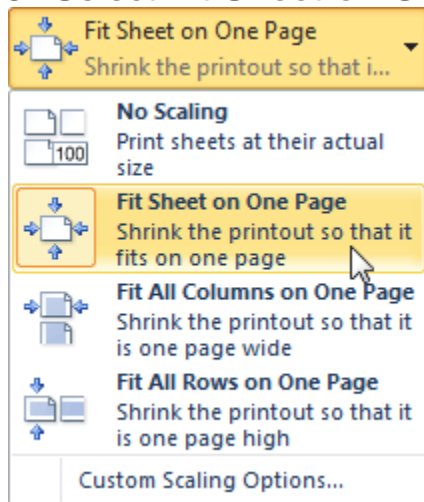
Landscape Orientation in Print Preview

To Fit a Worksheet on One Page:

1. Click the **File** tab.
2. Select **Print** to access the **Print pane**.



3. Select **Fit Sheet on One Page** from the **scaling** drop-down menu.



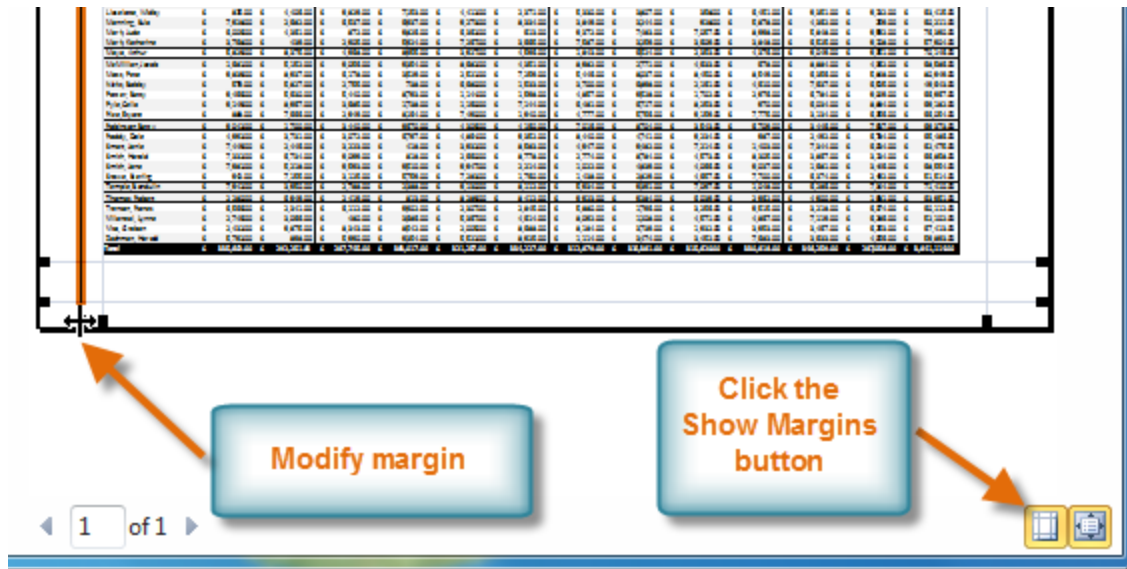
Selecting the Fit Sheet on One Page command

4. Your worksheet is reduced in size until it fits on one page. Remember that if it is scaled too small it might be difficult to read.

To Modify Margins While in Print Preview:

The margins of your worksheet may need to be adjusted to make data fit more comfortably on the printed page. You can adjust the margins in **Print Preview**.

1. Click the **File** tab.
2. Select **Print** to access the **Print pane**.
3. Click on the **Show Margins** button. Your margins will appear.
4. Hover your mouse over one of the **margin markers** ■ until the **double arrow** ⇆ appears.
5. **Click and drag** the margin to your desired location.
6. Release the mouse. The margin is modified.

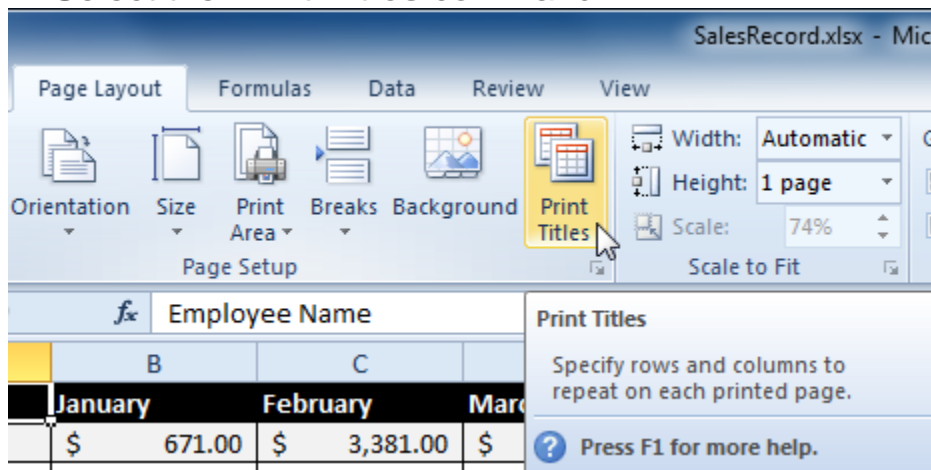


Modifying margins while in Print Preview

To Use Print Titles:

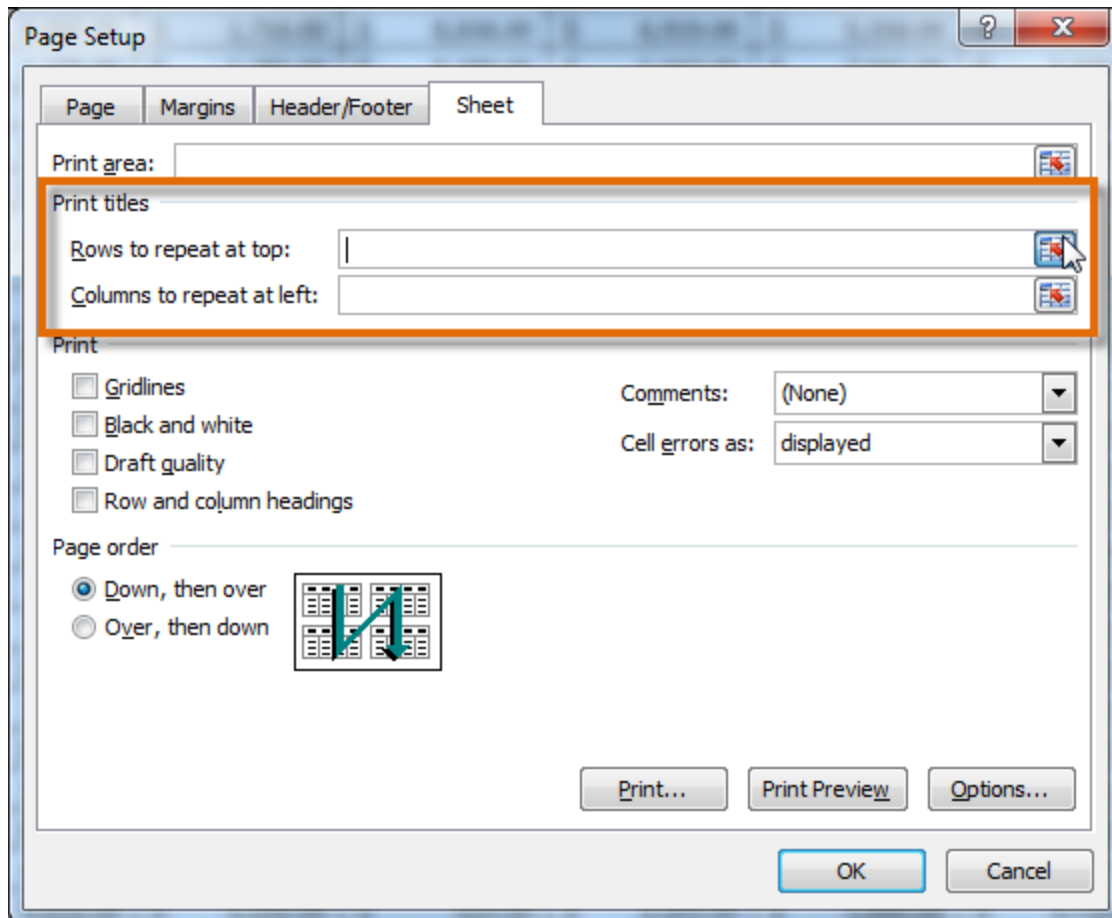
Imagine how difficult it would be to read a worksheet if the column and row headings only appeared on the first page. The **Print Titles** command allows you to select specific rows and columns to appear on each page.

1. Click the **Page Layout** tab.
2. Select the **Print Titles** command.



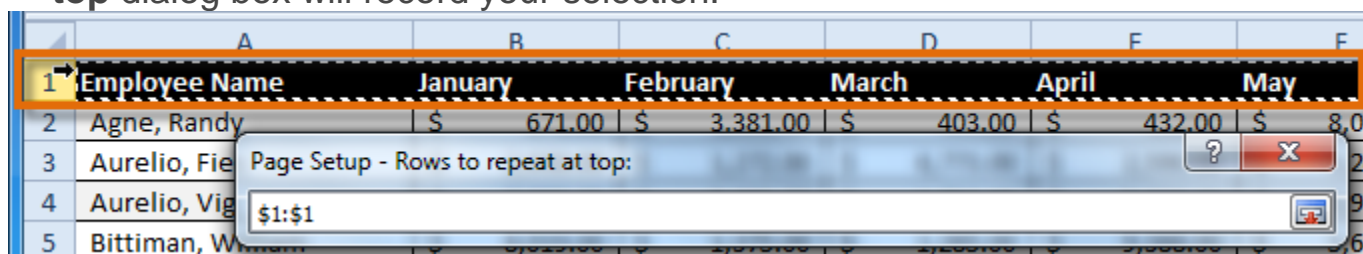
Selecting the Print Titles command

3. The **Page Setup** dialog box appears. Click the icon at the end of the **Rows to repeat at top** field.



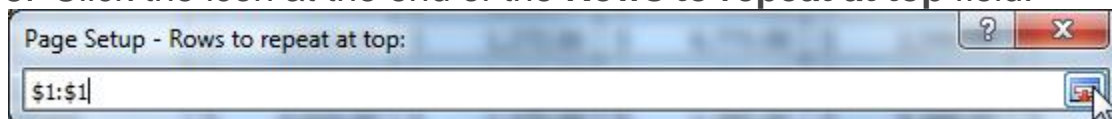
Clicking on icon

4. Your mouse becomes the small **selection arrow** →. Click on the rows you want to appear on each printed page. The **Rows to repeat at top** dialog box will record your selection.



Clicking on row 1

5. Click the icon at the end of the **Rows to repeat at top** field.



Clicking on icon

6. Repeat for **Columns to repeat at left**, if necessary.



7. Click **OK**. You can go to **Print Preview** to see how each page will look when printed.

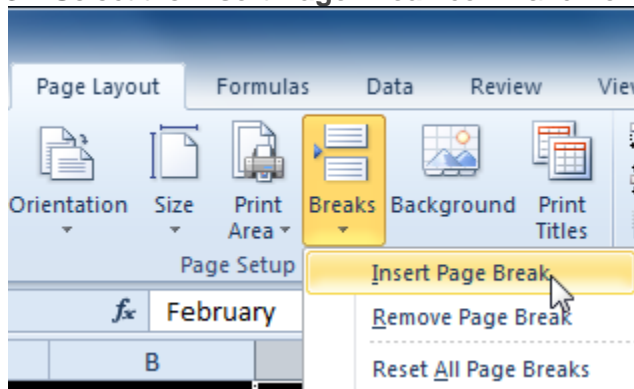
To Insert a Break:

1. Click the **Page Layout** tab.
2. Determine the placement of the break by clicking on the **row below, cell below, or column to the right** of where you want the break to appear. For example, select column C and a break will appear after column B.

	A	B	C
1	Employee Name	January	February
2	Allenson, Carol	\$ 5,897.00	\$ 2,356.00
3	Altman, Zoey	\$ 666.00	\$ 6,210.00
4	Aurelio, Fies	\$ 5,889.00	\$ 9,385.00
5	AU	\$ 8,765.00	\$ 9,258.00
6	Be	\$ 1,928.00	\$ 6,595.00
7	Bi	\$ 4,108.00	\$ 7,172.00
8	Ca	\$ 6,302.00	\$ 358.00
9	Carlton, Potter	\$ 3,647.00	\$ 2,858.00
10	Chantay, Marjan	\$ 7,916.00	\$ 2,611.00
11	Collin, Bevell	\$ 8,985.00	\$ 539.00
12	Collman, Harry	\$ 5,019.00	\$ 4,573.00

Selecting the column to the right of where the break will appear

3. Select the **Insert Page Break** command from the **Breaks** drop-down menu.



Selecting the **Insert Page Break** command

4. The break is inserted. You can go to **Print Preview** to confirm it appears in the correct place on the page.



Challenge!

1. Open an existing Excel 2010 workbook. If you want, you can use lesson8 exer.
2. Try printing two active worksheets. If you are using the example, try printing the worksheets labeled 2009 and 2010.
3. Try printing only a selection of cells.
4. Change the page orientation to Landscape.
5. Try fitting a large worksheet on one page.
6. Try modifying the margins of a worksheet in Print Preview.
7. If you are using the example, use the Print Titles command to make row 1 and column A appear on every page.
8. Create a page break so that only columns A and B appear on one page.



Lesson 9 - Creating Complex Formulas

	B	C
	0.055	
Price	Sales Tax	
Unit	\$9.95	=B4*\$B\$1
Unit	\$24.50	\$1.35
Unit	\$9.99	\$0.55
Unit	\$49.99	\$2.75
Unit	\$8.25	\$0.45

Excel is a spreadsheet application that can help you calculate and analyze numerical information for household budgets, company finances, inventory, and more. To do this, you need to understand **complex formulas**.

In this lesson, you will learn how to write complex formulas in Excel following the order of operations. You will also learn about **relative and absolute cell references** and how to **copy and fill formulas** containing cell references.

Simple formulas have one mathematical operation, such as $5+5$. **Complex formulas** have *more than one* mathematical operation, such as $5+5-2$. When there is more than one operation in a formula, the **order of operations** tells us which operation to calculate first. In order to use Excel to calculate complex formulas, you will need to understand the order of operations.

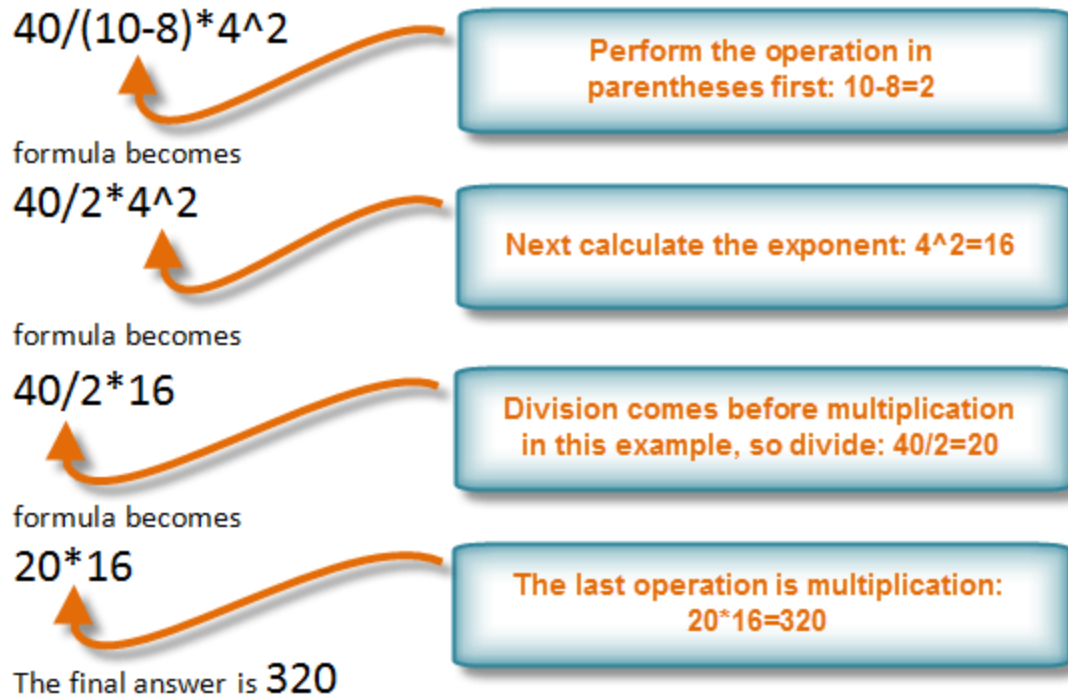
Order of Operations

Excel calculates formulas based on the following order of operations:

1. Operations enclosed in **parentheses**
2. **Exponential** calculations (to the power of)
3. **Multiplication** and **division**, whichever comes first
4. **Addition** and **subtraction**, whichever comes first

Example 1

The following example demonstrates how to use the order of operations to calculate a formula:



Order of Operations example

Example 2

In this example, we will review how Excel will calculate a complex formula using the order of operations. The selected cell will display the percent of total Pete Lily seeds sold that were white.

Seed Inventory	Packets Sold	Price	Percent of Total Sold
Pete Lily - Blue	14	\$1.99	42.42
Pete Lily - White	19	\$1.99	$=(19*1.99)/(33*1.99)*100$
Total Pete Lily	33	\$1.99	

Order of Operations

Excel example

1. First, Excel will calculate the amount sold in parentheses: $(19*1.99)=37.81$ White Lily seeds and $(33*1.99)=65.67$ Total Lily seeds.
2. Second, it will divide the White Lily seeds amount by the Total Lily seeds amount: $37.81/65.67=.5758$.
3. Last, it will multiply the result by 100 to obtain the value as a percent: $.5758*100=57.58$.



Based on this complex formula, the result will show that **57.58%** of the total Pete Lily seeds sold were white. You can see from this example, that it is important to enter complex formulas with the correct order of operations. Otherwise, Excel will not calculate the results accurately.

To Create a Complex Formula Using the Order of Operations:

In this example, we will use **cell references** in addition to actual values, to create a complex formula that will add tax to the nursery order.

1. Click the cell where you want the formula result to appear (for example, F11).
2. Type the **equal sign (=)**.
3. Type an **open parenthesis**, then click on the cell that contains the first **value** you want in the formula (for example, F4).
4. Type the first **mathematical operator** (for example, the addition sign).
5. Click on the cell that contains the second **value** you want in the formula (for example, F5), and then type **aclosed parenthesis**.
6. Type the next **mathematical operator** (for example, the multiplication sign).
7. Type the next **value** in the formula (for example, 0.055 for 5.5% tax).



SUM						
	A	B	C	D	E	F
1						
2						
3		ITEM	ITEM #	Price	Quantity	Total
4		LE Tomato Planter Bags	SG324	\$18.99	2	\$37.98
5		M - Cord	AU396	\$0.12	5	\$0.60
6						
7						
8						
9						
10						
11		Tax				$=(F4+F5)*0.055$
12		Total				\$40.70
13						

Row 4, Column D

8. Click **Enter** to calculate your formula. The results show that \$2.12 is the tax for the nursery order.

\$2.12 Result in F11

In order to maintain accurate formulas, it is necessary to understand how cell references respond when you copy or fill them to new cells in the worksheet.

Excel will interpret cell references as either **relative** or **absolute**. By default, cell references are **relative references**. When copied or filled, they change based on the relative position of rows and columns. If you copy formula ($=A1+B1$) into row 2, the formula will change to become ($=A2+B2$).

Absolute references, on the other hand, do not change when they are copied or filled and are used when you want the values to stay the same.

Relative References

Relative references can save you time when you are repeating the same kind of calculation across multiple rows or columns.



In the following example, we are creating a formula with cell references in row 4 to calculate the total cost of the electric bill and water bill for each month (B4=B2+B3). For the upcoming months we want to use the same formula with relative references (C2+C3, D2+D3, E2+E3, etc.) For convenience, we can copy the formula in B4 into the rest of row 4 and Excel will calculate the value of the bills for those months using relative references.

To Create and Copy a Formula Using Relative References:

1. Select the first cell where you want to enter the formula (for example, B4).

	A	B	C	D	E	F	G	H	I	J	K	L	M
1		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2	Electric	\$ 116.45	\$ 125.15	\$ 132.04	\$ 114.78	\$ 98.45	\$ 101.98	\$ 120.41	\$ 139.42	\$ 99.56	\$ 106.24	\$ 110.12	\$ 114.21
3	Water	\$ 50.15	\$ 48.75	\$ 45.87	\$ 49.57	\$ 50.42	\$ 64.45	\$ 66.42	\$ 63.24	\$ 56.54	\$ 46.24	\$ 43.24	\$ 50.24
4	Total												

Selecting cell B4

2. Enter the formula to calculate the value you want (for example, add B2+B3).

	A	B	C
1		JAN	FEB
2	Electric	\$ 116.45	\$ 125.15
3	Water	\$ 50.15	\$ 48.75
4	Total	=B2+B3	

Entering formula into B4

3. Press **Enter**. The formula will be calculated.

\$ 166.60

Result in B4

4. Select the cell you want to copy (for example, B4) and click on the **Copy** command from the **Home** tab.
5. Select the cells where you want to paste the formula and click on the **Paste** command from the **Home** tab. (You may also drag the fill handle to fill cells.)

Values calculated in C4:M4

6. Your formula is copied to the selected cells as a relative reference (C4=C2+C3, D4=D2+D3, E4=E2+E3, etc.) and the values are calculated.

	A	B	C	D	E	F	G	H	I	J	K	L	M
1		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2	Electric	\$ 116.45	\$ 125.15	\$ 132.04	\$ 114.78	\$ 98.45	\$ 101.98	\$ 120.41	\$ 139.42	\$ 99.56	\$ 106.24	\$ 110.12	\$ 114.21
3	Water	\$ 50.15	\$ 48.75	\$ 45.87	\$ 49.57	\$ 50.42	\$ 64.45	\$ 66.42	\$ 63.24	\$ 56.54	\$ 46.24	\$ 43.24	\$ 50.24
4	Total	\$ 166.60	\$ 173.90	\$ 177.91	\$ 164.35	\$ 148.87	\$ 166.43	\$ 186.83	\$ 202.66	\$ 156.10	\$ 152.48	\$ 153.36	\$ 164.45



Absolute References

There may be times when you do not want a cell reference to change when copying or filling cells. You can use an **absolute reference** to keep a row and/or column constant in the formula.

An absolute reference is designated in the formula by the addition of a **dollar sign (\$)**. It can precede the column reference, the row reference, or both.

\$A\$2:	The column and the row do not change when copied.
A\$2:	The row does not change when copied.
\$A2:	The column does not change when copied.

In the below example, we want to calculate the sales tax for a list of products with varying prices. We will use an absolute reference for the sales tax (\$B\$1) because we do not want it to change as we are copying the formula down the column of varying prices.

To Create and Copy a Formula Using an Absolute Reference:

1. Select the first cell where you want to enter the formula (for example, C4)

	A	B	C
1	5.5% Sales Tax	0.055	
2			
3	ITEM	Price	Sales Tax
4	7" Spanish Pot -	\$9.95	
5	LightWorks Garde	\$24.50	
6	Coneflower - Sur	\$9.99	
7	Four Way Soil An	\$49.99	
8	Ferti-Again	\$8.25	

Selecting cell C4

2. Click on the cell that contains the first **value** you want in the formula (for example, B4).



3. Type the first **mathematical operator** (for example, the multiplication sign).
4. Type the **dollar sign (\$)** and enter the **column letter** of the cell you are making an absolute reference to (for example, B).

	A	B	C
1	5.5% Sales Tax	0.055	
2			
3	ITEM	Price	Sales Tax
4	7" Spanish Pot - BLU	\$9.95	=B4*\$B
5	LightWorks Garden Kit	\$24.50	
6	Coneflower - Sundown	\$9.99	
7	Four Way Soil Analyzer	\$49.99	
8	Ferti-Again	\$8.25	

Entering formula

5. Type the **dollar sign (\$)** and enter the **row number** of the same cell you are making an absolute reference to (for example, 1).

	A	B	C
1	5.5% Sales Tax	0.055	
2			
3	ITEM	Price	Sales Tax
4	7" Spanish Pot - BLU	\$9.95	=B4*\$B\$1
5	LightWorks Garden Kit	\$24.50	
6	Coneflower - Sundown	\$9.99	
7	Four Way Soil Analyzer	\$49.99	
8	Ferti-Again	\$8.25	

Entering formula

6. Press **Enter** to calculate the formula.

\$0.55 Result in C4

7. Select the cell you want to copy (for example, C4) and click on the **Copy** command from the **Home** tab.
8. Select the cells where you want to paste the formula and click on the **Paste** command from the **Home** tab. (You may also drag the fill handle to fill cells.)



	A	B	C
1	5.5% Sales Tax	0.055	
2			
3	ITEM	Price	Sales Tax
4	7" Spanish Pot - BLU	\$9.95	\$0.55
5	LightWorks Garden Kit	\$24.50	\$1.35
6	Coneflower - Sundown	\$9.99	\$0.55
7	Four Way Soil Analyzer	\$49.99	\$2.75
8	Ferti-Again	\$8.25	\$0.45

Values calculated in C5:C8

9. Your formula is copied to the selected cells using the absolute reference (C5=B5*\$B\$1, C6=B6*\$B\$1, etc.) and your values are calculated.

Challenge!

1. Open an existing Excel 2010 workbook. If you want, you can use lesson9 exer.
2. Create a complex formula that uses the addition and subtraction operations.
3. Create a complex formula that uses the multiplication and division operations.
4. Create a formula that uses an absolute reference. If you are using the example, calculate the sales tax in E4:E20. Use cell C23 as your absolute reference to the price of sales tax.
5. Create a formula that uses a relative reference. If you are using the example, create a formula that multiplies the price of each item (in column D), the sales tax for each item (in column E), and the quantity of each item (in column F). Enter your results in the totals column (column G).



ITEC106-Excel 2010 Lecture Notes