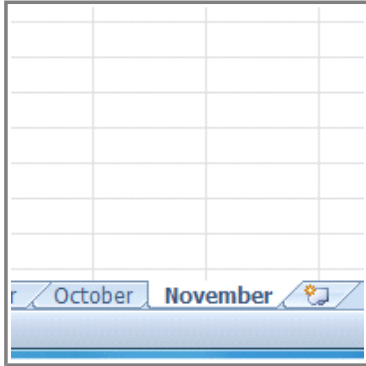




Excel 2010

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.

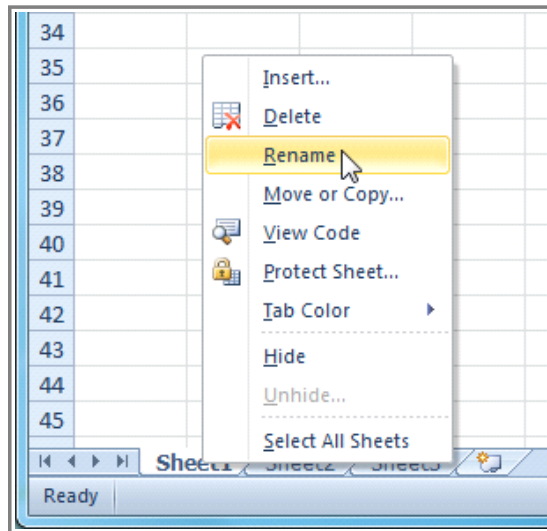
In this lesson, you will learn how to **name** and **add color** to worksheet tabs, and how to **add**, **delete**, **copy**, and **move** worksheets. Additionally, you will learn how to **group** and **ungroup** worksheets, and **freeze** columns and rows in worksheets so that they remain visible even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

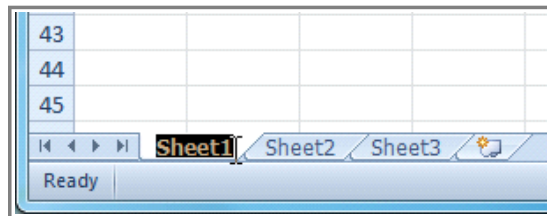
To Rename Worksheets:

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



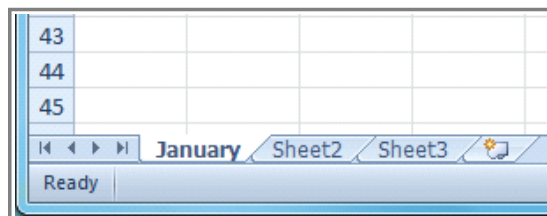
Selecting the Rename command

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



Renaming the worksheet

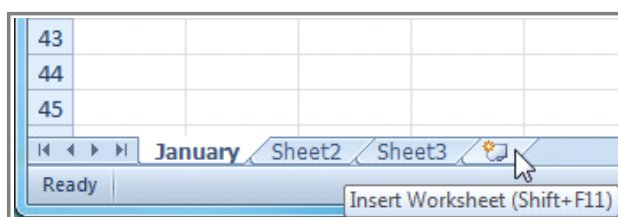
4. Click anywhere outside of the tab. The worksheet is renamed.



Renamed worksheet

To Insert New Worksheets:

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



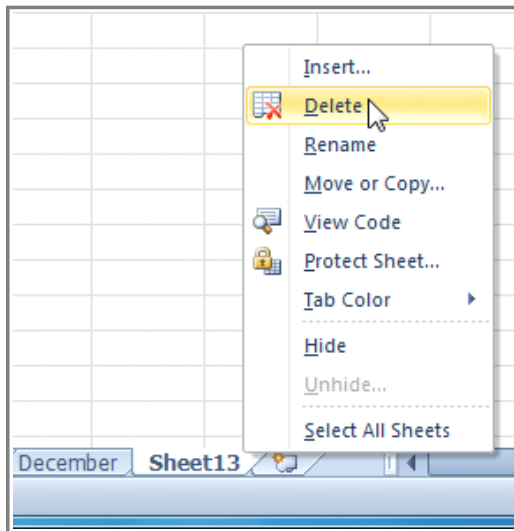
Inserting a new worksheet

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.

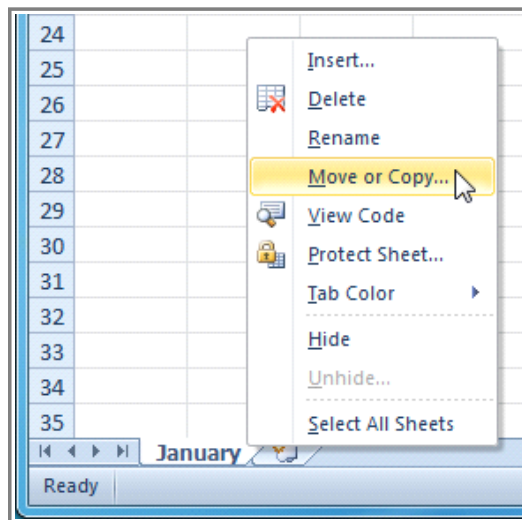
1. Select the worksheets you want to delete.
2. Right-click one of the selected worksheets. The **worksheet** menu appears.
3. Select **Delete**. The selected worksheets will be deleted from your workbook.



Deleting a worksheet

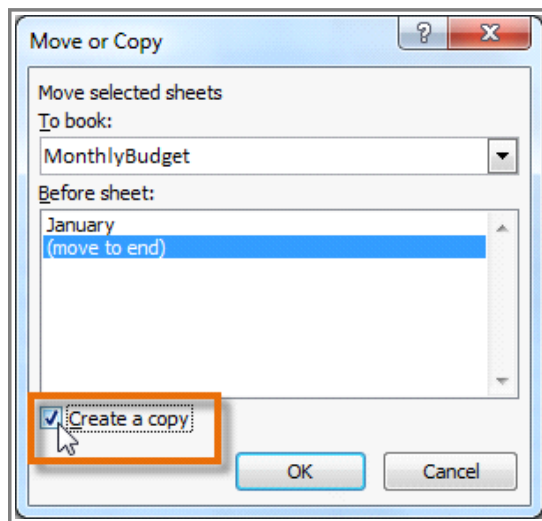
To Copy a Worksheet:

1. Right-click the worksheet you want to copy. The **worksheet** menu appears.
2. Select **Move or Copy**.



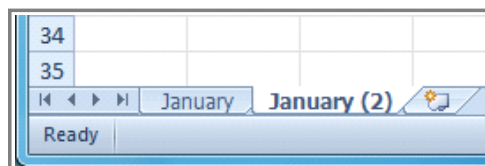
Selecting the Move or Copy command

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




Checking the Create a copy box

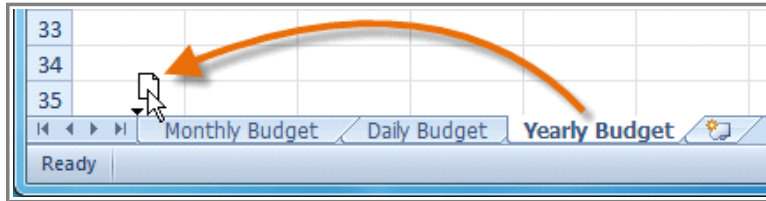
4. Click **OK**. Your worksheet is copied. It will have the same title as your original worksheet, but the title will include a version number, such as "January (2)".



Copied worksheet

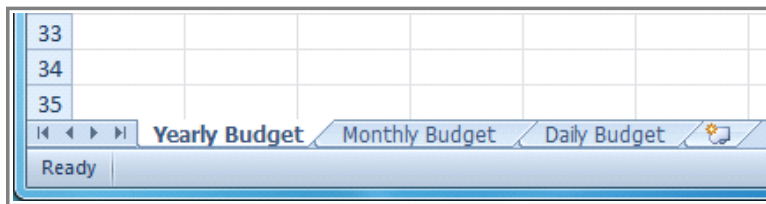
To Move a Worksheet:

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.

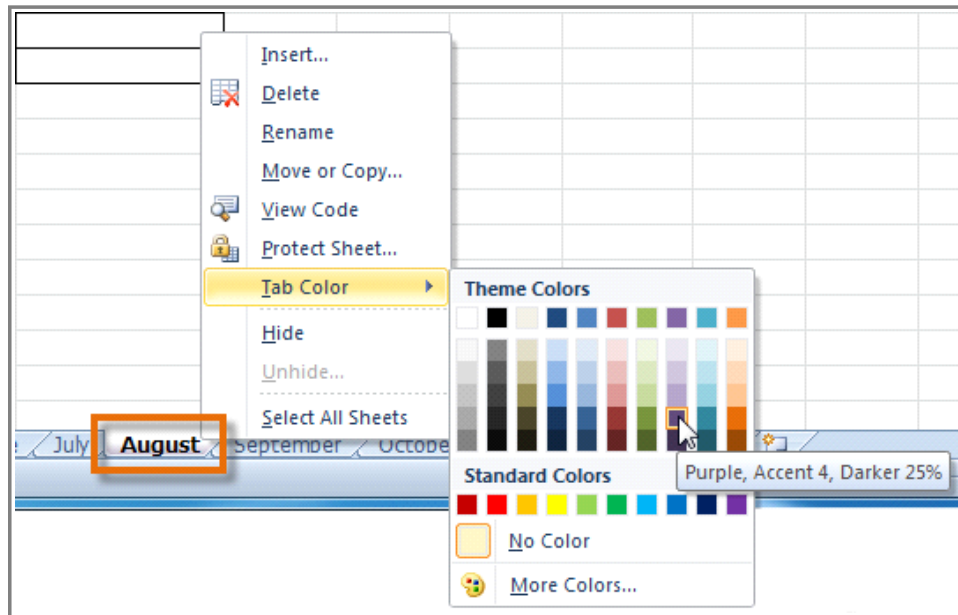


Moved worksheet

To Color-Code Worksheet Tabs:

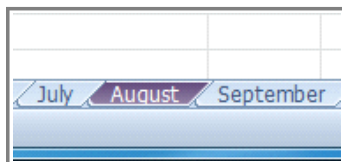
You can color worksheet tabs to help organize your worksheets and make your workbook easier to navigate.

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.



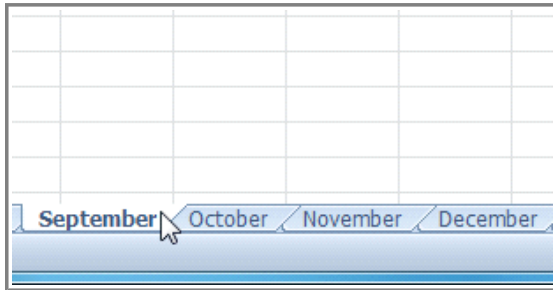
Worksheet tab color changed

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.

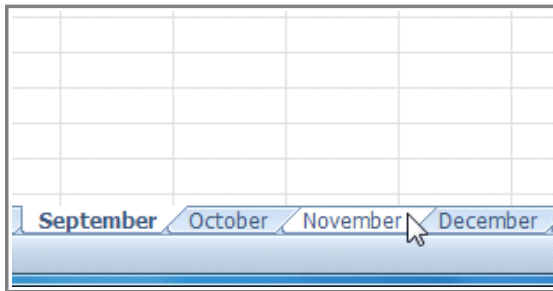
To Group Worksheets:

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:

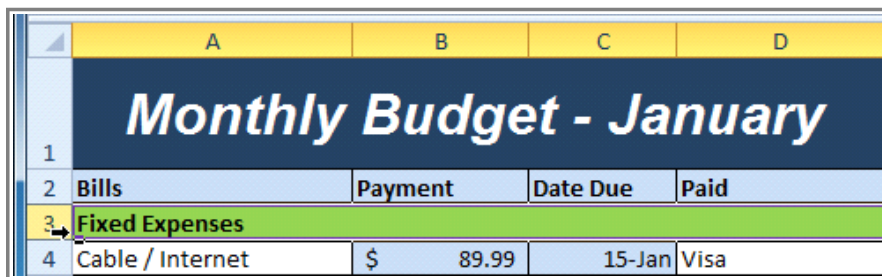
1. Right-click one of the worksheets. The **worksheet** menu appears.
2. Select **Ungroup**. The worksheets will be ungrouped.

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.



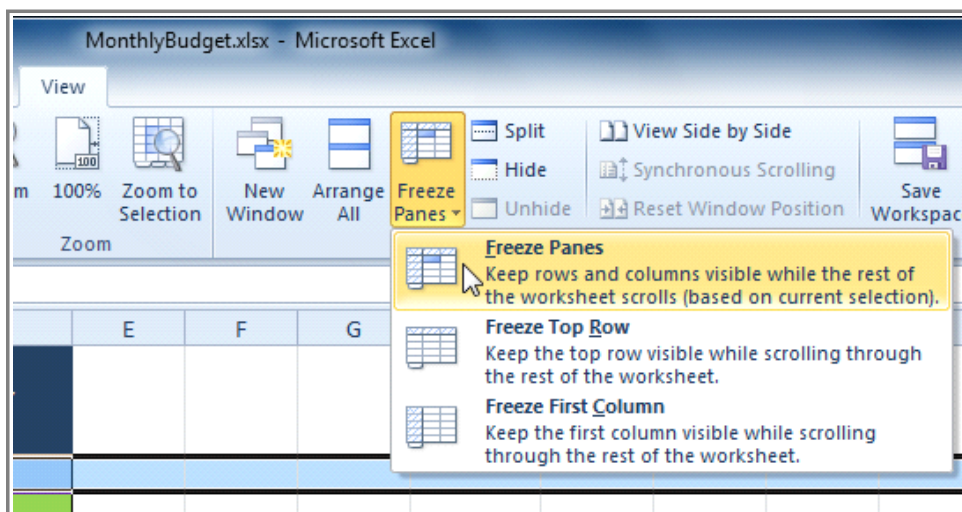
The screenshot shows an Excel worksheet with the following content:

	A	B	C	D
1	Monthly Budget - January			
2	Bills	Payment	Date Due	Paid
3	Fixed Expenses			
4	Cable / Internet	\$ 89.99	15-Jan	Visa

Row 3 is highlighted in green, indicating it is selected.

Selecting 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

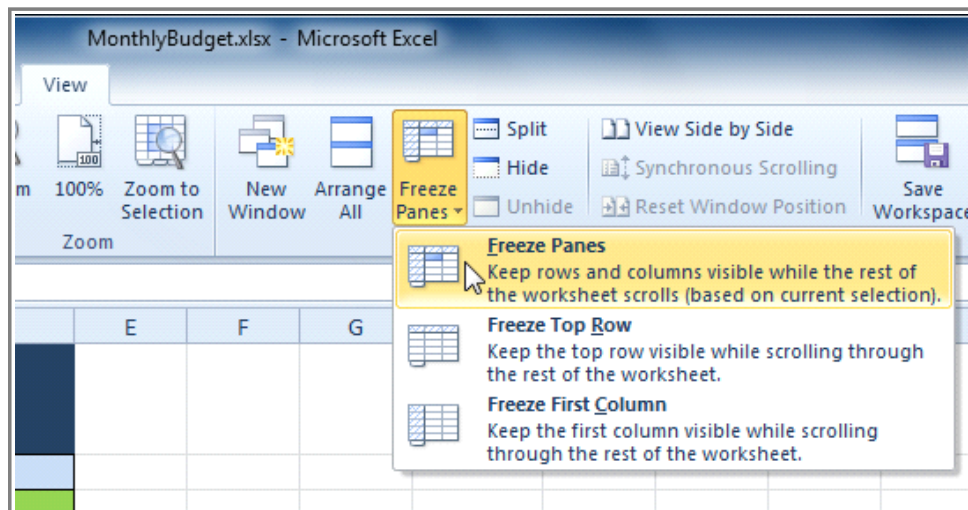
To Freeze Columns:

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	\$ 10.00
7	Groceries	\$ 230.23	\$ 203.50	\$ 189.35	\$ 125.00	\$ 20.00
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	\$ 30.00
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.

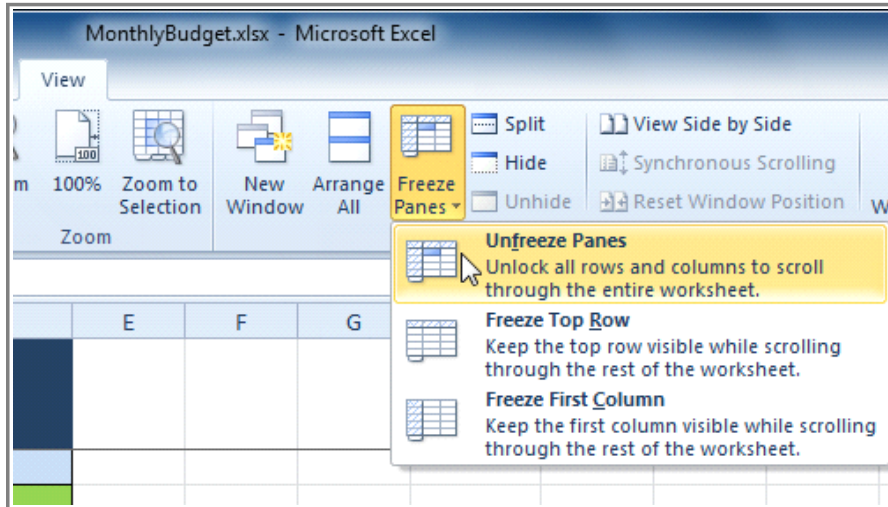
	A	B	F	G	H	I
1	Variable Expenses					
2	Variable Expenses	January	May	June	July	August
3						
4	Cell Phone	\$ 47.99	\$ 49.87	\$ 47.86	\$ 41.30	\$ 49.40
5	Clothes	\$ 55.24	\$ 24.25	\$ 46.42	\$ -	\$ 204.24
6	Gas	\$ 100.00	\$ 146.42	\$ 107.77	\$ 106.28	\$ 113.12
7	Groceries	\$ 230.23	\$ 220.78	\$ 208.45	\$ 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.



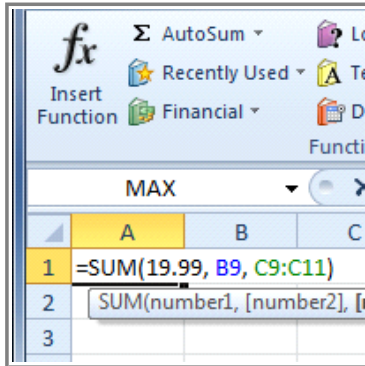
Selecting the Unfreeze Panes command from the View tab



Excel 2010

Working with Basic Functions

Working with Basic Functions



Figuring out formulas for calculations you want to make in Excel can be tedious and complicated. Fortunately, Excel has an entire library of **functions** or **predefined formulas** that you can take advantage of. You may be familiar with common functions like **sum**, **average**, **product** or **count**, but there are hundreds of functions in Excel, even for things like formatting text, referencing cells, calculating financial rates, analyzing statistics, and more.

In this lesson, you will learn the basics of inserting common functions into your worksheet by utilizing the **AutoSum** and **Insert Functions** commands. You will also become familiar with how to **search and find various functions**, including exploring Excel's **Functions Library**.

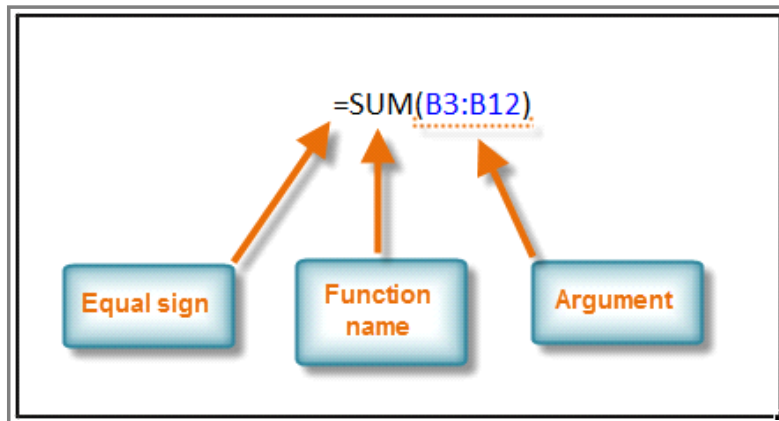
Basic Functions

A **function** is a **predefined formula** that performs calculations using specific values in a particular order. One of the key benefits of functions is that they can save you time since you do not have to write the formula yourself. Excel has hundreds of different functions to assist with your calculations.

In order to use these functions correctly, you need to understand the different **parts of a function** and how to create **arguments** in functions to calculate values and cell references.

The Parts of a Function

The order in which you insert a function is important. Each function has a specific order, called **syntax**, which must be followed for the function to work correctly. The basic syntax to create a formula with a function is to insert an **equal sign (=)**, a **function name** (SUM, for example, is the function name for addition), and an **argument**. Arguments contain the information you want the formula to calculate, such as a range of cell references.



Syntax of a basic function

Working with Basic Arguments

Arguments must be enclosed in **parentheses**. Individual values or cell references inside the parentheses are separated by either **colons** or **commas**.

✦ **Colons** create a reference to a range of cells.

For example, `=AVERAGE(E19:E23)` would calculate the **average** of the cell range E19 through E23.

✦ **Commas** separate individual values, cell references, and cell ranges in the parentheses. If there is more than one argument, you must separate each argument by a comma.

For example, `=COUNT(C6:C14,C19:C23,C28)` will **count** all the cells in the three arguments that are included in parentheses.

To Create a Basic Function in Excel:

1. Select the cell where the answer will appear (F15, for example)
2. Type the **equal sign (=)** and enter the **function name** (SUM, for example).

\$12.20	\$61.00	8-Aug	11-Aug
\$7.33	\$36.65	8-Aug	11-Aug
=SUM			
Unit Price		Ordered	Date Received
\$12.03		18-Sep	26-Sep
\$15.95		18-Sep	26-Sep
\$5.87		8-Aug	14-Aug
\$8.83		8-Aug	14-Aug
\$13.54	\$27.08	22-Jul	29-Jul

Creating a SUM function

3. Enter the cells for the **argument** inside the parenthesis.

Unit Price	Subtotal	Date Ordered	Date Received
\$5.86	\$58.60	12-Sep	17-Sep
\$40.26	\$80.52	12-Sep	17-Sep
\$4.20	\$42.00	6-Sep	12-Sep
\$6.19	\$74.28	6-Sep	12-Sep
\$3.20	\$48.00	6-Sep	12-Sep
\$3.40	\$17.00	6-Sep	12-Sep
\$4.10	\$32.80	6-Sep	12-Sep
\$12.20	\$61.00	8-Aug	11-Aug
\$7.33	\$36.65	8-Aug	11-Aug
=SUM(F6:F14)			

Adding cells to the function argument

4. Press **Enter** and the result will appear.

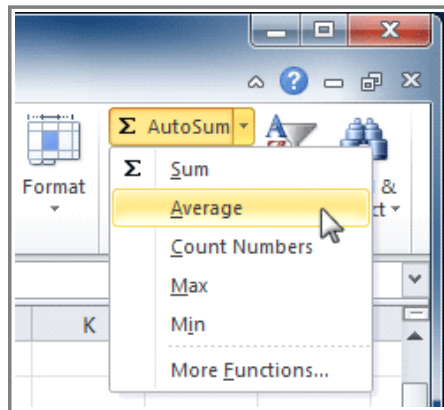
\$450.85

Result

Using AutoSum to select Common Functions:

The **AutoSum** command allows you to automatically return the results for a range of cells for common functions like SUM and AVERAGE.

1. Select the cell where the answer will appear (E24, for example).
2. Click on the **Home** tab.
3. In the **Editing** group, click on the **AutoSum** drop-down arrow and select the function you desire (Average, for example).



AutoSum command

4. A formula will appear in the selected cell E24. If logically placed, AutoSum will select your cells for you. Otherwise, you will need to click on the cells to choose the argument you desire.

Unit Price	Subtotal	Date Ordered	Date Received
\$12.03	\$36.09	18-Sep	26-Sep
\$15.95	\$31.90	18-Sep	26-Sep
\$5.87	\$58.70	8-Aug	14-Aug
\$8.83	\$88.30	8-Aug	14-Aug
\$13.54	\$27.08	22-Jul	29-Jul
=AVERAGE(E19:E23)			
AVERAGE(number1, [number2], ...)			
Subtotal			

AutoSum selects and displays cell range

5. Press **Enter** and the result will appear.

\$11.24

Result

The **AutoSum** command can also be accessed from the **Formulas** tab.

Function Library

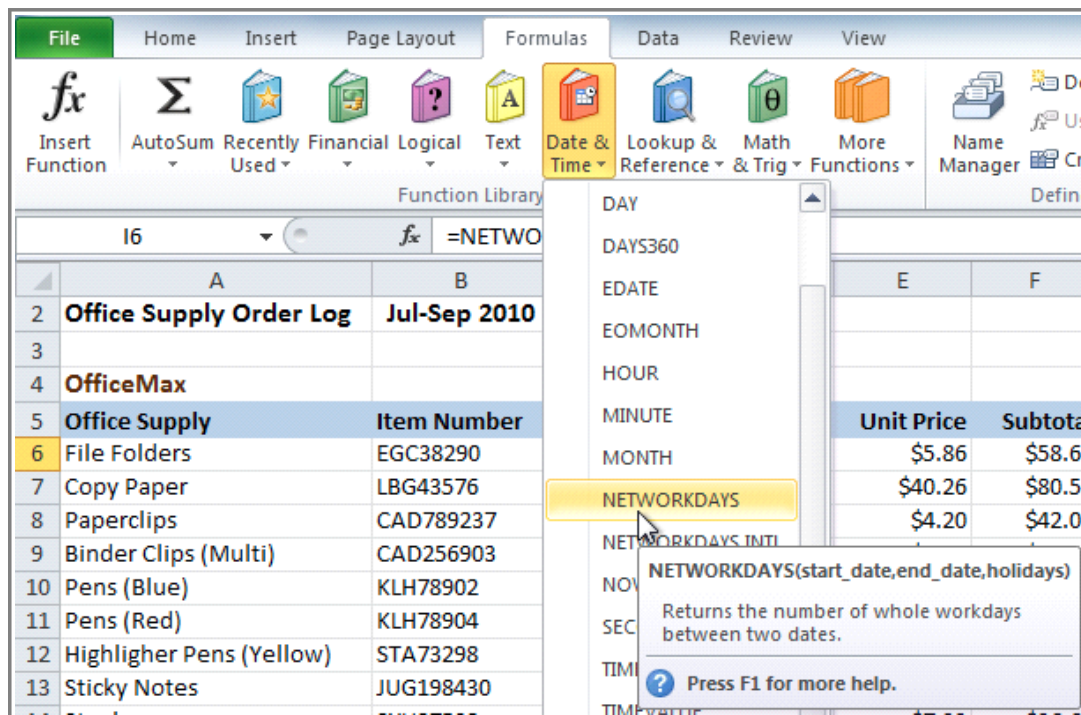
There are hundreds of functions in Excel, but only some will be useful for the kind of data you are working with. There is no need to learn every single function, but you may want to explore some of the different kinds to get ideas about which ones might be helpful to you as you create new spreadsheets.

A great place to explore functions is in the **Function Library** on the Formulas tab. Here you may search and

select Excel functions based on categories such as **Financial**, **Logical**, **Text**, **Date & Time**, and more. Review the following interactive to learn more.

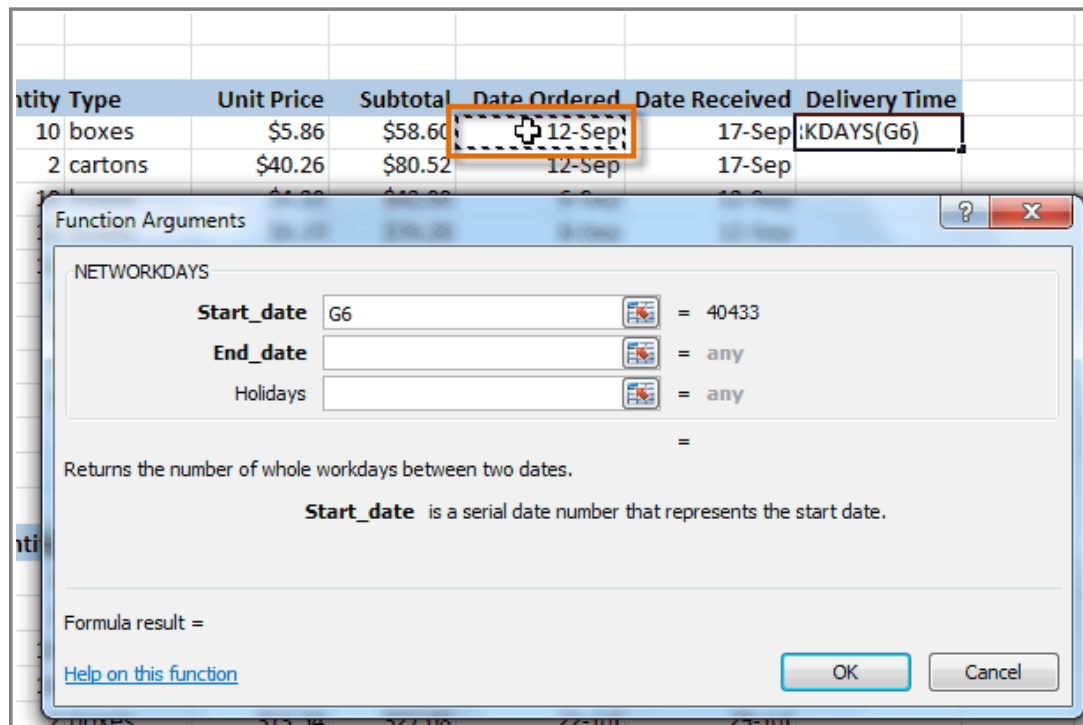
To Insert a Function from the Function Library:

1. Select the cell where the answer will appear (I6, for example)
2. Click on the **Formulas** tab.
3. From the **Function Library** group, select the **function category** you desire. In this example, we will choose Date & Time.
4. Select the desired **function** from the Date & Time drop-down menu. We will choose the NETWORKDAYS function to count the days between the order date and receive date in our worksheet.



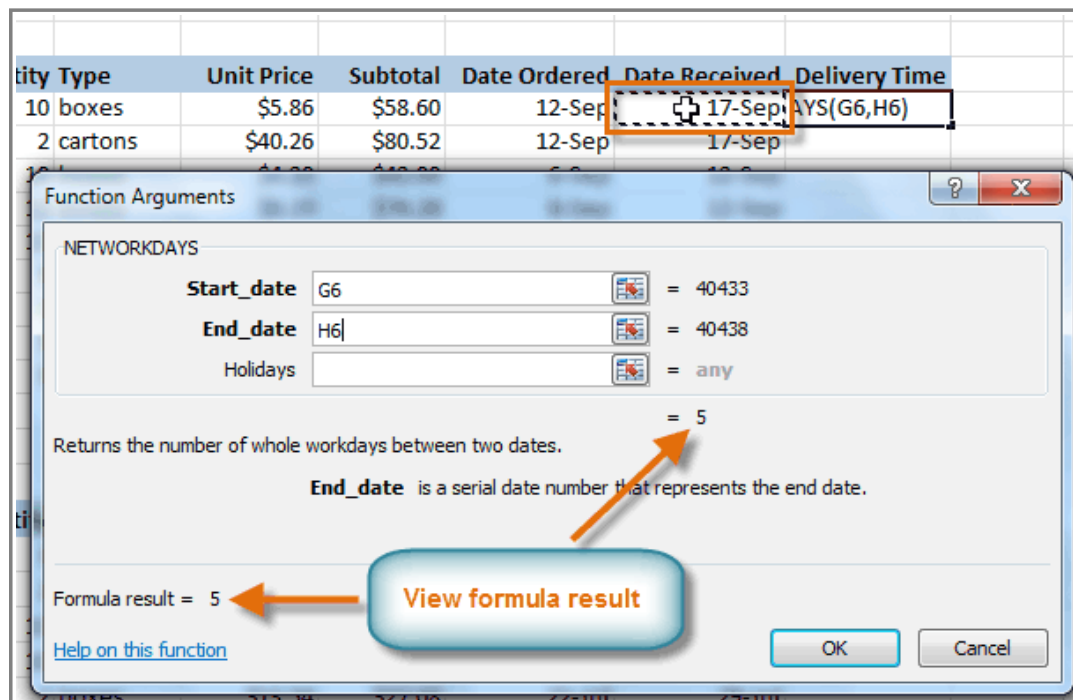
Function Library Date & Time category

5. The **Function Arguments** dialog box will appear. Insert the cursor in the **first field** and then enter or select the cell(s) you desire (G6, for example).



Selecting cell for the Start-date field

6. Insert the cursor in the **next field** and then enter or select the cell(s) you desire (H6, for example).



Selecting cell for the End_date field

7. Click **OK** and the result will appear. Our results show that it took 5 days to receive the order.

Date Ordered	Date Received	
12-Sep	17-Sep	5

Result

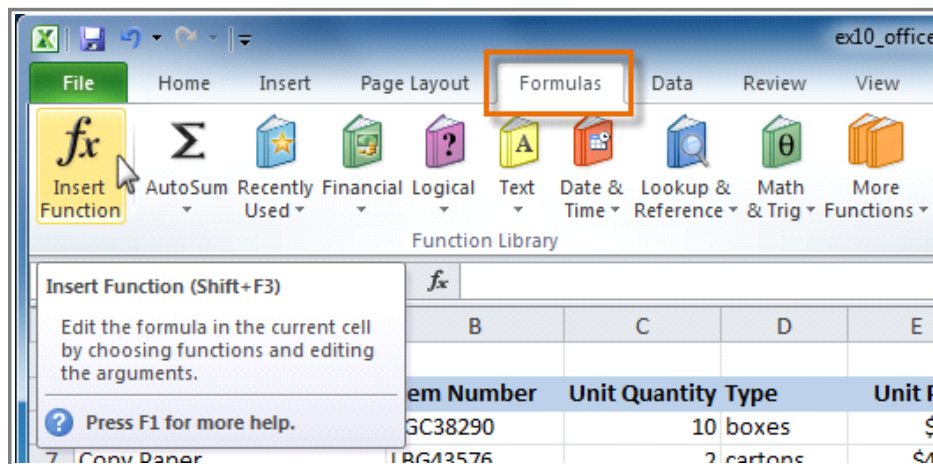
Insert Function Command

The **Insert Function** command is convenient because it allows you to search for a function by typing a description of what you are looking for or by selecting a category to peruse. The Insert Function command can also be used to easily enter or select more than one argument for a function.

Using the Insert Function command:

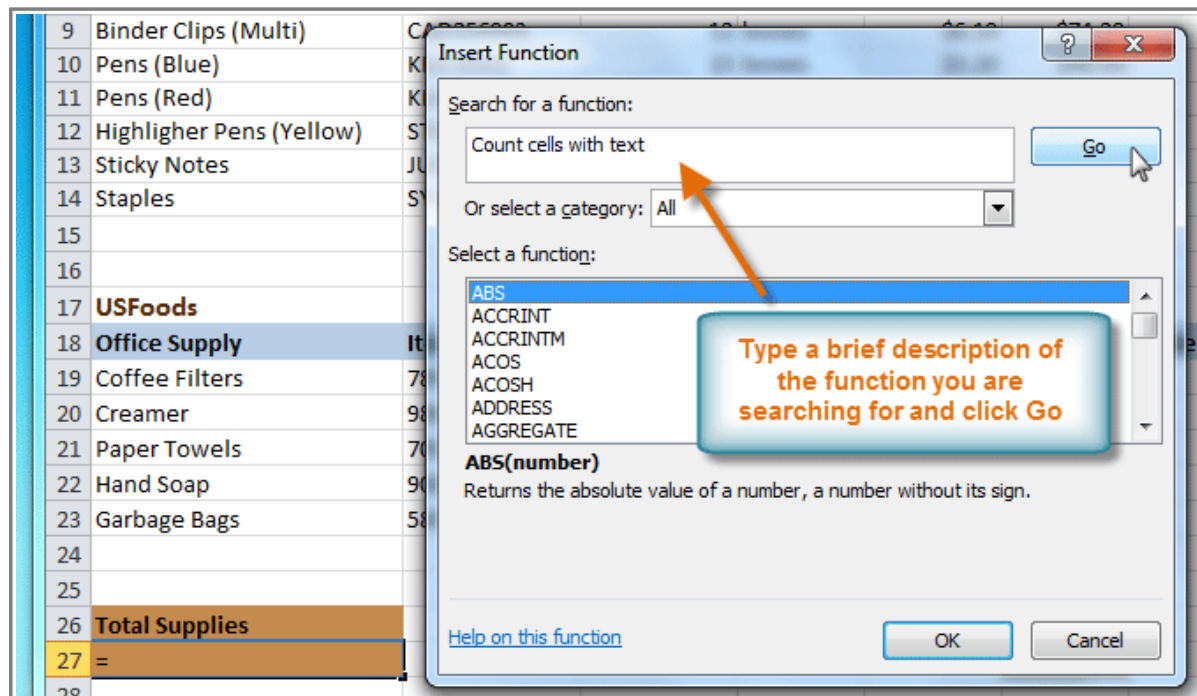
In this example, we want to find a function that will count the total number of supplies listed in the Office Supply Order Log. The basic COUNT function only counts cells with numbers; we want to count the cells in the Office Supply column, which uses text. Therefore, we will need to find a formula that counts cells with text.

1. Select the cell where the answer will appear (A27, for example)
2. Click on the **Formulas** tab and select the **Insert Function** command.



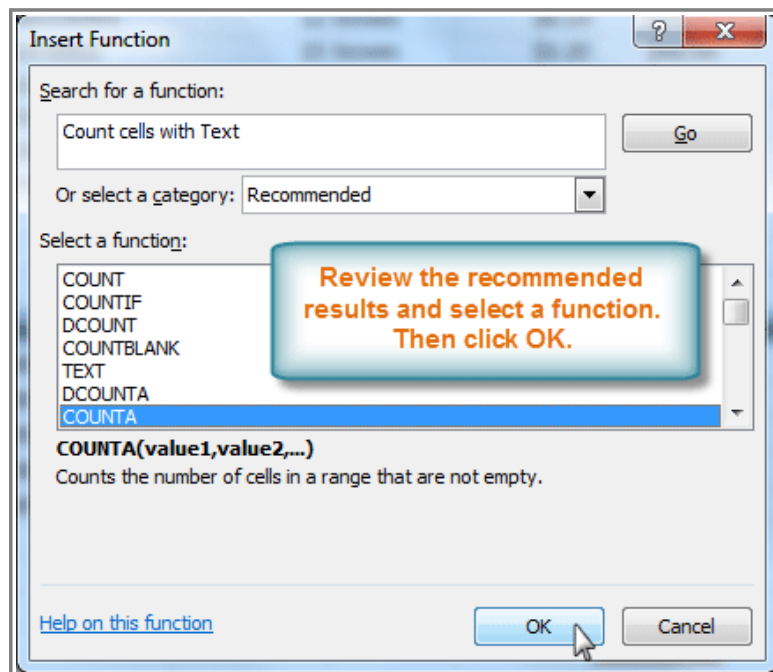
Insert Function command

3. The **Insert Function** dialog box will appear.
4. Type a **description** of the function you are searching for and click **Go**. For our example, we will type: *Count cells with text*. (You may also search by selecting a category.)



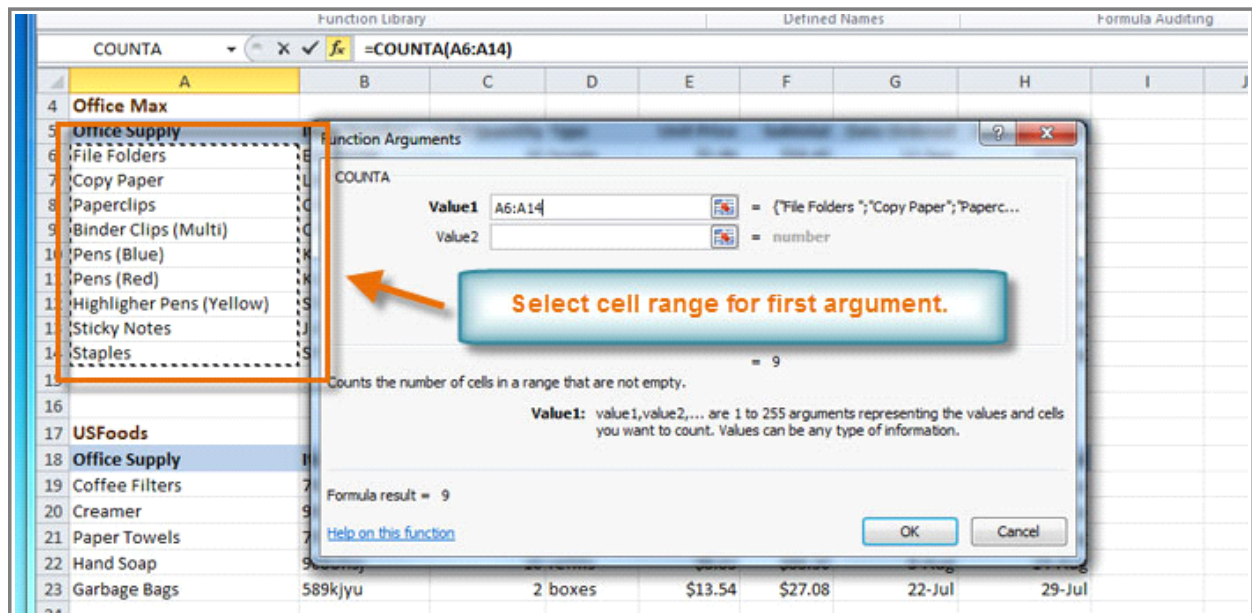
Searching for a function

5. Review the results to find the function you desire. We will use COUNTA. Then click **OK**.



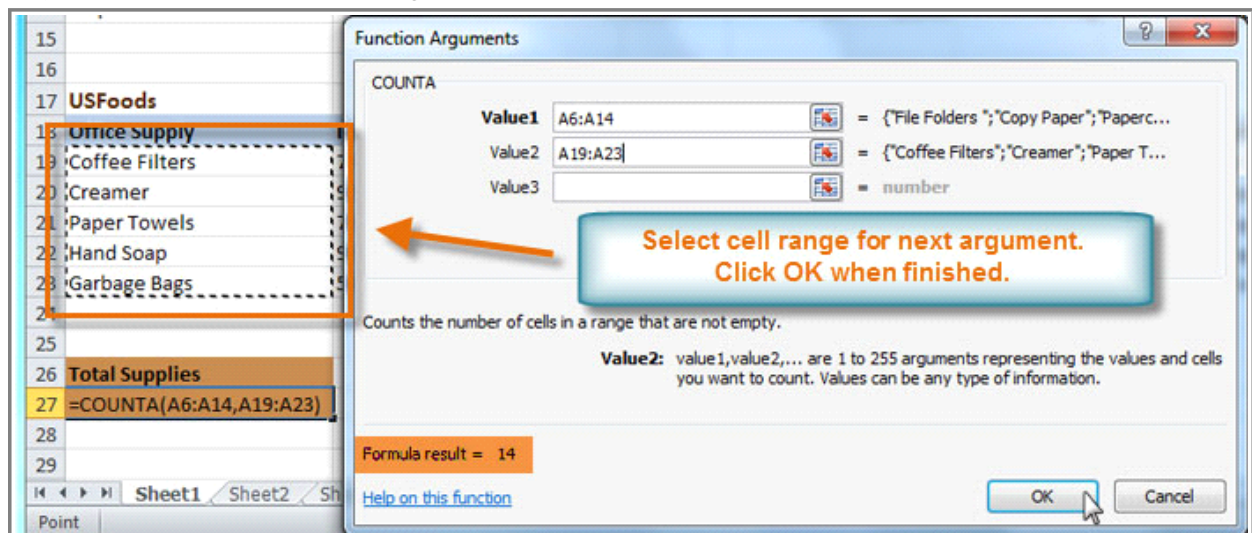
Reviewing function search results

6. The **Function Arguments** dialog box will appear. Insert the cursor in the **first field** and then enter or select the cell(s) you desire (A6:A14, for example).



Selecting cell range for Value1 field

7. Insert the cursor in the **next field** and then enter or select the cell(s) you desire (A19:A23, for example). (You may continue to add additional arguments if needed.)



Selecting cell range for Value2 field

8. Click **OK** and the result will appear. Our results show that 14 Total Supplies were ordered from our log.

Total Supplies	14
-----------------------	----

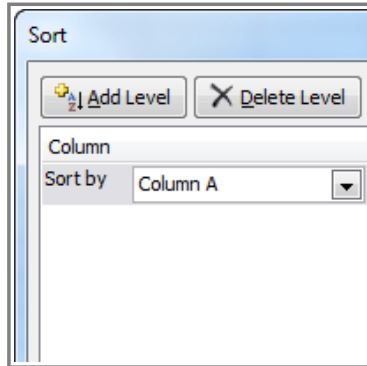
Result



Excel 2010

Sorting Data

Introduction



With over 17 billion cells in a single worksheet, Excel 2010 gives you the ability to work with an **enormous amount of data**. Arranging your data alphabetically, from smallest to largest, or other criteria, can help you find the information you're looking for more quickly.

In this lesson, you will learn how to **sort** data to better view and organize the contents of your spreadsheet.

Basic Sorting

Sorting is a common task that allows you to change or customize the order of your spreadsheet data. For example, you could organize an office birthday list by employee, birthdate, or department, making it easier to find what you're looking for. Custom sorting takes it a step further, giving you the ability to sort multiple levels (such as department first, then birthdate, to group birthdates by department), and more.

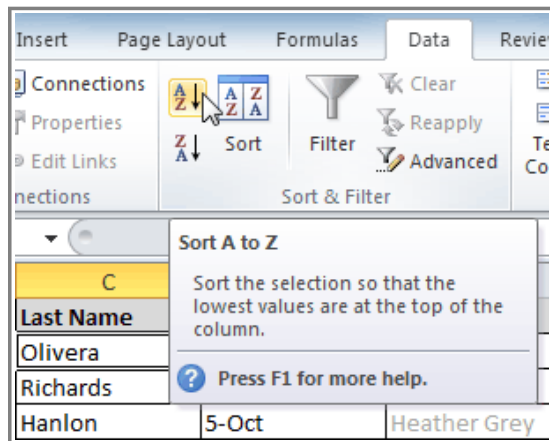
To Sort in Alphabetical Order:

1. Select a cell in the column you want to sort by. In this example, we will sort by Last Name.

	C	D	E
1	Last Name	Payment	T-Shirt Color
2	Olivera	1-Oct	White
3	Richards	4-Oct	Dark Red
4	Hanlon	5-Oct	Heather Grey
5	Means	5-Oct	Dark Red

Selecting a column to sort

2. Select the **Data** tab, and locate the **Sort and Filter** group.
3. Click the ascending command  to **Sort A to Z**, or the descending command  to **Sort Z to A**.



Sorting in ascending alphabetical order

4. The data in the spreadsheet will be organized alphabetically.

	C	D	E
1	Last Name	Payment	T-Shirt Color
2	Ackerman	1-Oct	Heather Grey
3	Albee	13-Oct	Heather Grey
4	Bell	11-Oct	Dark Red
5	Benson	11-Oct	White
6	Chen	5-Oct	Dark Red
7	Del Toro	13-Oct	White
8	Ellison	Pending	Dark Red
9	Flores	6-Oct	White
10	Hanlon	5-Oct	Heather Grey
11	Kelly	11-Oct	Dark Red
12	Kelly	11-Oct	Heather Grey
13	Lazar	14-Oct	White
14	MacDonald	Pending	Dark Red
15	Means	5-Oct	Dark Red
16	Naser	14-Oct	Dark Red
17	Nichols	6-Oct	Dark Red

Sorted by last name, from A to Z



Sorting options can also be found on the Home tab, condensed into the **Sort & Filter** command.

To Sort in Numerical Order:

1. Select a cell in the column you want to sort by.

	A	B	C
1	Homeroom #	First Name	Last Name
2	110	Kris	Ackerman
3	105	Nathan	Albee
4	220-B	Samantha	Bell
5	110	Matt	Benson

Selecting a column to sort

- From the **Data** tab, click the ascending command  to **Sort Smallest to Largest**, or the descending command  to **Sort Largest to Smallest**.
- The data in the spreadsheet will be organized numerically.

	A	B	C
1	Homeroom #	First Name	Last Name
2	105	Nathan	Albee
3	105	Christiana	Chen
4	105	Sidney	Kelly
5	105	Derek	MacDonald
6	105	Melissa	White
7	105	Esther	Yaron
8	110	Kris	Ackerman
9	110	Matt	Benson
10	110	Gabriel	Del Toro
11	110	Regina	Olivera
12	135	Anisa	Naser
13	135	James	Panarello
14	135	Lia	Richards
15	135	Jordan	Weller
16	135	Chantal	Weller
17	135	Alex	Yuen



Sorted by homeroom number, from smallest to largest

To Sort by Date or Time:

- Select a cell in the column you want to sort by.

	D	E	F
1	Payment	T-Shirt Color	T-Shirt Size
2	13-Oct	Heather Grey	Medium
3	5-Oct	Dark Red	Medium
4	11-Oct	Dark Red	Medium
5	Pending	Dark Red	Large

Selecting a column to sort

- From the **Data** tab, click the ascending command  to **Sort Oldest to Newest**, or the descending command  to **Sort Newest to Oldest**.
- The data in the spreadsheet will be organized by date or time.

	D	E	F
1	Payment	T-Shirt Color	T-Shirt Size
2	1-Oct	Heather Grey	Large
3	1-Oct	White	Large
4	4-Oct	Dark Red	X-Large
5	5-Oct	Dark Red	Medium
6	5-Oct	Heather Grey	Large
7	5-Oct	Dark Red	Medium
8	5-Oct	Heather Grey	X-Large
9	6-Oct	White	X-Large
10	6-Oct	Dark Red	X-Large
11	7-Oct	Heather Grey	Small
12	7-Oct	Dark Red	Small
13	7-Oct	Heather Grey	Small
14	7-Oct	Heather Grey	Small
15	11-Oct	Dark Red	Medium
16	11-Oct	White	Medium
17	11-Oct	Dark Red	Medium

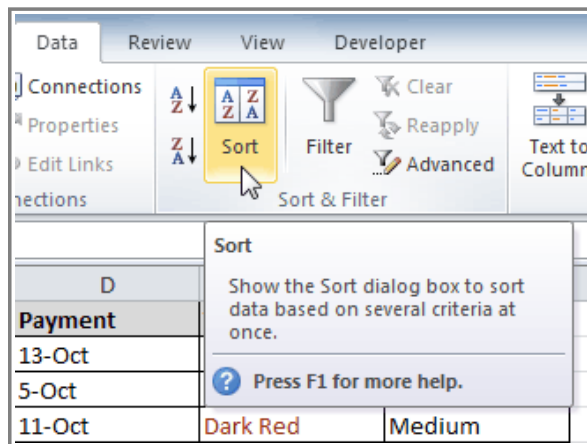
Sorted by payment date, from oldest to newest

Custom Sorting

To Sort in the Order of Your Choosing:

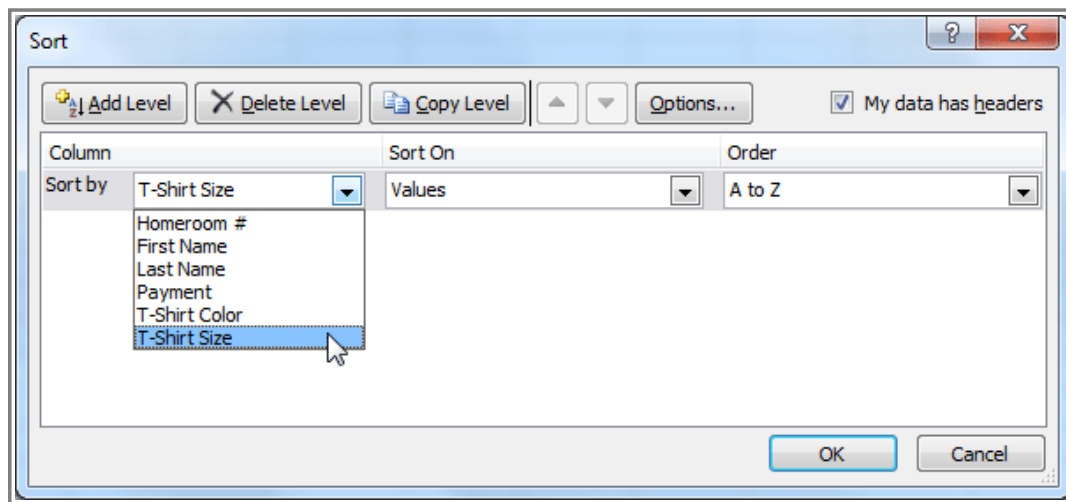
You can use a **Custom List** to identify your own sorting order, such as days of the week, or, in this example, t-shirt sizes from smallest to largest (Small, Medium, Large, and X-Large).

- From the **Data** tab, click the **Sort** command to open the **Sort** dialog box.



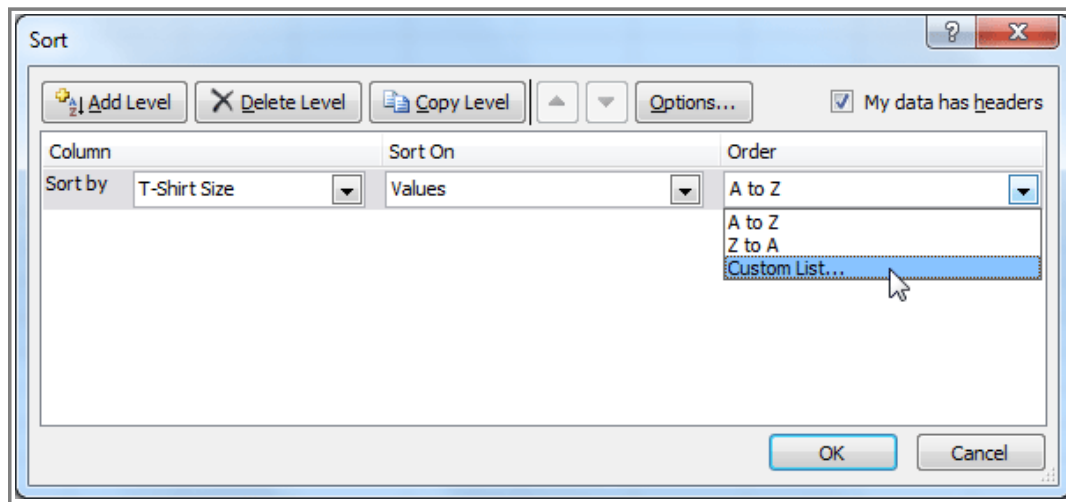
Opening the Sort dialog box

- Identify the column you want to **Sort by** by clicking the drop-down arrow in the **Column** field. In this example, we will choose T-Shirt Size.



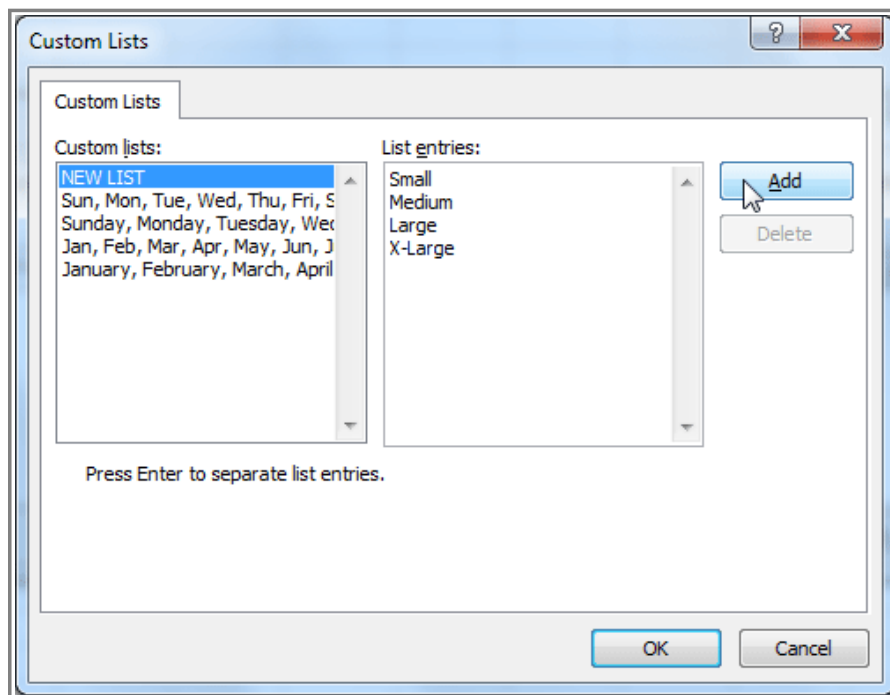
Selecting a column to sort by

- Make sure **Values** is selected in the **Sort On** field.
- Click the drop-down arrow in the **Order** field, and choose **Custom List...**



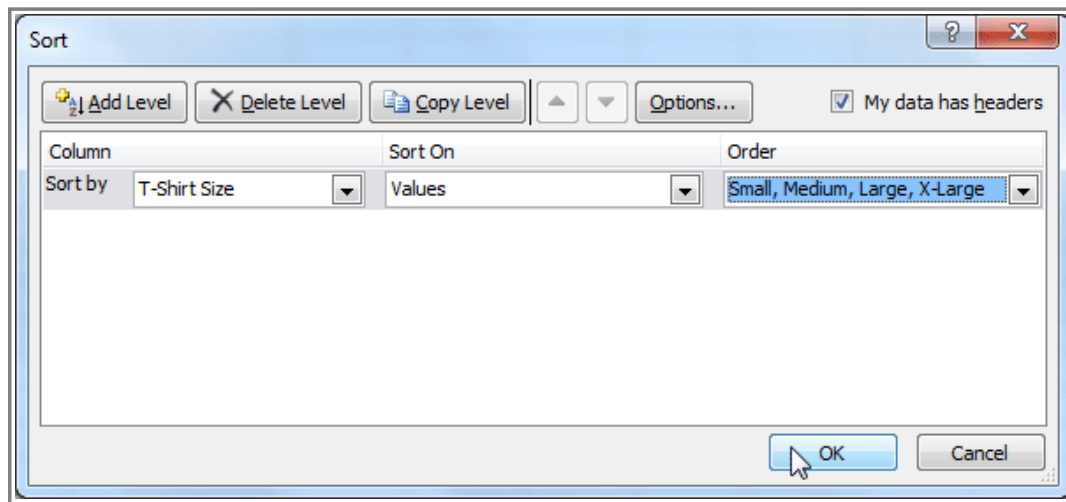
Choosing to order by Custom List

5. Select **NEW LIST**, and enter how you want your data sorted in the **List entries** box. We will sort t-shirt sizes from smallest to largest.
6. Click **Add** to save the list, then click **OK**.



Creating a custom list

7. Click **OK** to close the Sort dialog box and sort your data.



Clicking OK to sort

8. The spreadsheet will be sorted in order of Small, Medium, Large, and X-Large.

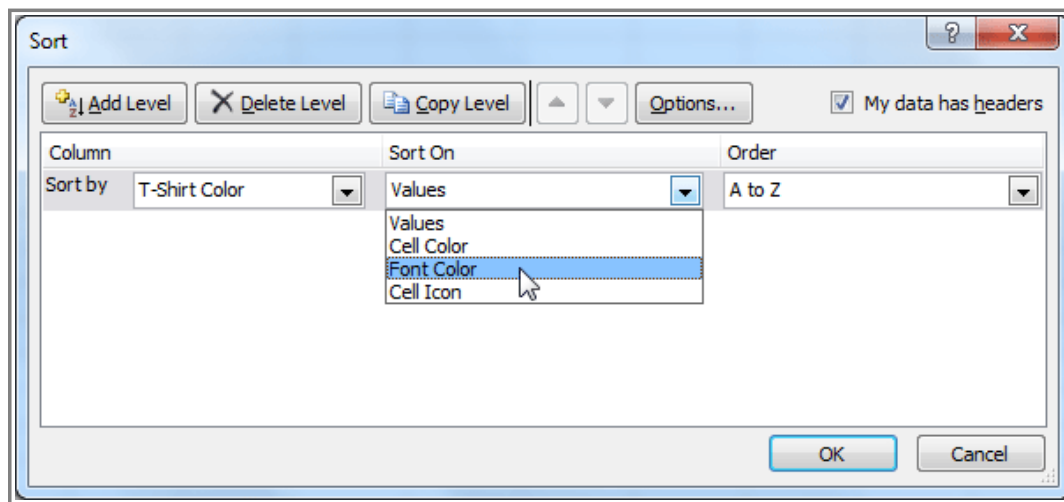
	C	D	E	F
1	Last Name	Payment	T-Shirt Color	T-Shirt Size
6	Naser	14-Oct	Dark Red	Small
7	Lazar	14-Oct	White	Small
8	Ellison	Pending	Dark Red	Small
9	Peyton-Gomez	Pending	White	Small
10	Chen	5-Oct	Dark Red	Medium
11	Means	5-Oct	Dark Red	Medium
12	Benson	11-Oct	White	Medium
13	Bell	11-Oct	Dark Red	Medium
14	Albee	13-Oct	Heather Grey	Medium
15	Del Toro	13-Oct	White	Medium
16	Panarello	15-Oct	White	Medium
17	Ackerman	1-Oct	Heather Grey	Large
18	Olivera	1-Oct	White	Large
19	Weller	5-Oct	Heather Grey	Large
20	Yuen	4-Oct	White	Large
21	MacDonald	Pending	Dark Red	Large
22	Richards	4-Oct	Dark Red	X-Large
23	Hanlon	5-Oct	Heather Grey	X-Large

Sorted by t-shirt size, from smallest to largest

To Sort by Cell Color, Font Color, or Cell Icon:

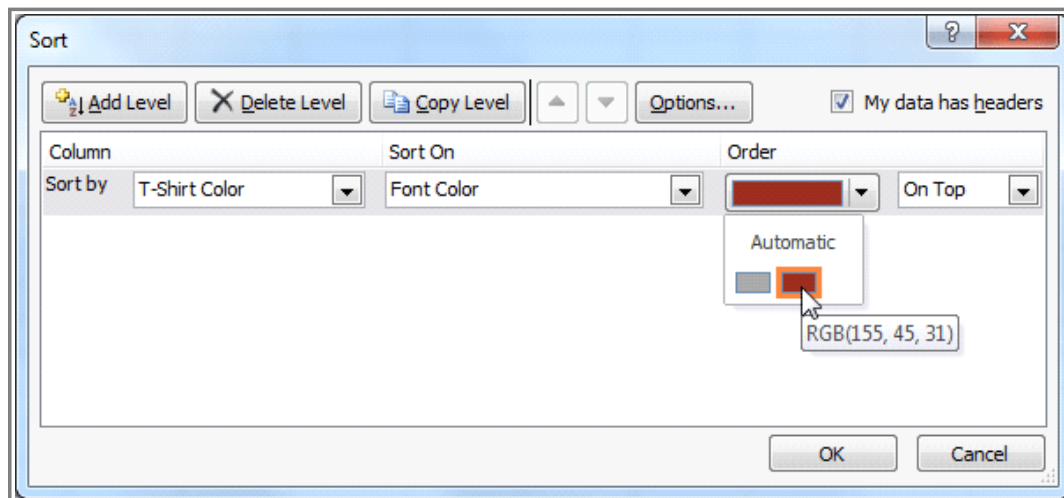
1. From the **Data** tab, click the **Sort** command to open the **Sort** dialog box.
2. Identify the column you want to **Sort by** by clicking the drop-down arrow in the **Column** field.

- Choose whether you want to sort by Cell Color, Font Color, or Cell Icon in the **Sort On** field. In this example, will sort on **Font Color**.



Choosing to sort on Font Color

- In the **Order** field, click the drop-down arrow to choose a color, then decide whether you want it ordered **On Top** or **On Bottom**.



Selecting a font color

- Click **OK**. The data is now sorted by attribute rather than text.

	C	D	E
1	Last Name	Payment	T-Shirt Color
2	Richards	4-Oct	Dark Red
3	Means	5-Oct	Dark Red
4	Chen	5-Oct	Dark Red
5	Nichols	6-Oct	Dark Red
6	Yaron	7-Oct	Dark Red
7	Bell	11-Oct	Dark Red
8	Kelly	11-Oct	Dark Red
9	Naser	14-Oct	Dark Red
10	Ellison	Pending	Dark Red
11	MacDonald	Pending	Dark Red
12	Ackerman	1-Oct	Heather Grey
13	Olivera	1-Oct	White

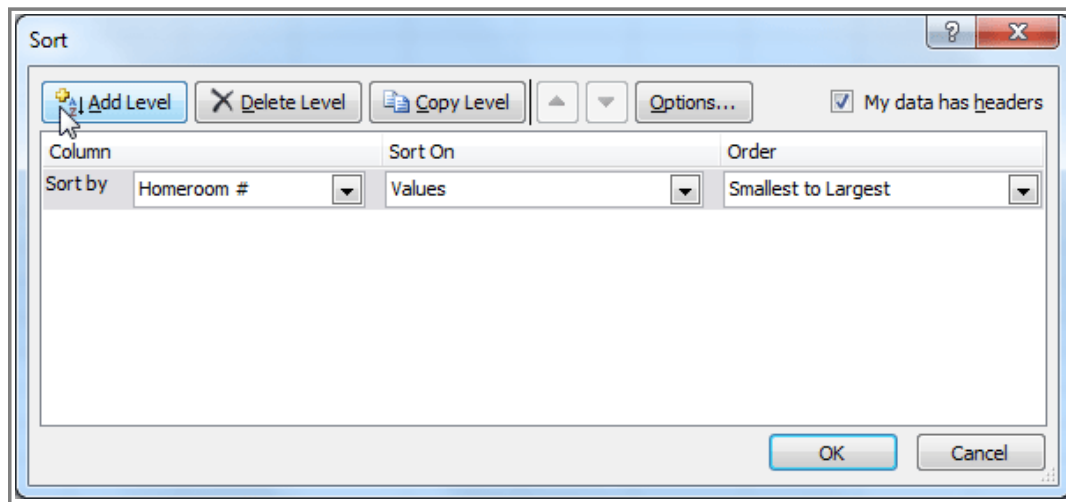
Sorted by font color

Sorting Multiple Levels

Another feature of custom sorting, **sorting multiple levels** allows you to identify which columns to sort by and when, giving you more control over the organization of your data. For example, you could sort by more than one cell color (such as red, then yellow, then green, to indicate different levels of priority); or, as seen here, sort students by homeroom number, then by last name.

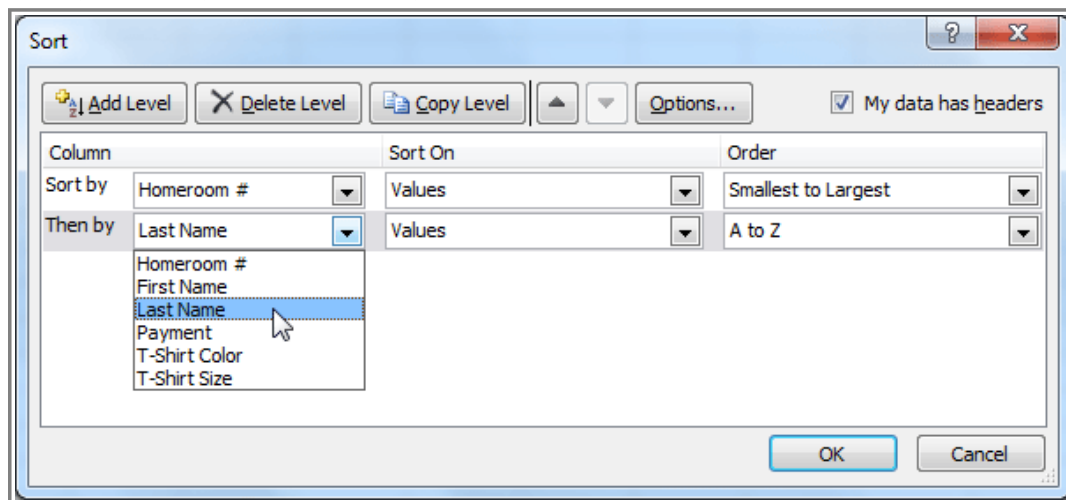
To Add a Level:

1. From the **Data** tab, click the **Sort** command to open the **Sort** dialog box.
2. Identify the first item you want to **Sort by**. In this example, we will sort Homeroom # from Smallest to Largest.
3. Click **Add Level** to add another item.



Adding a level

4. Identify the item you want to sort by next. We will sort Last Name from A to Z.



Choosing criteria for a second level

5. Click **OK**.
6. The spreadsheet will be sorted so that homeroom numbers are in order, and within each homeroom, students are listed alphabetically by last name.

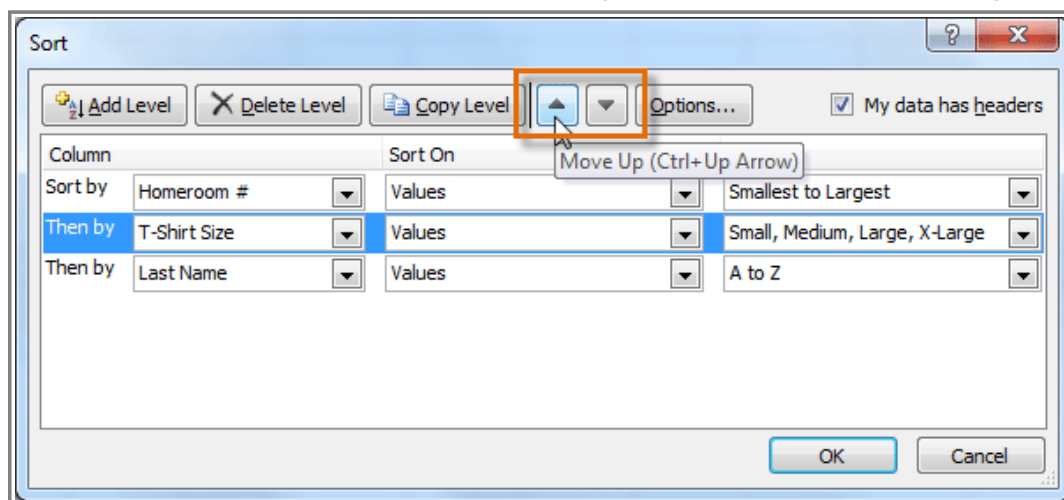
	A	B	C
1	Homeroom #	First Name	Last Name
2	105	Nathan	Albee
3	105	Christiana	Chen
4	105	Sidney	Kelly
5	105	Derek	MacDonald
6	105	Melissa	White
7	105	Esther	Yaron
8	110	Kris	Ackerman
9	110	Matt	Benson
10	110	Gabriel	Del Toro
11	110	Regina	Olivera
12	135	Anisa	Naser
13	135	James	Panarello
14	135	Lia	Richards
15	135	Jordan	Weller
16	135	Chantal	Weller
17	135	Alex	Yuen

Sorted by multiple levels

Copy Level will add a level by duplicating the one you have selected, and allowing you to modify the sorting criteria. This is useful if you need to sort multiple levels that share some criteria, such as the same Column, Sort On, or Order.

To Change the Sorting Priority:

1. From the **Data** tab, click the **Sort** command to open the **Custom Sort** dialog box.
2. Select the **level** you want to re-order.
3. Use the **Move Up** or **Move Down** arrows. The higher the level is on the list, the higher its priority.



Changing the sorting priority

4. Click **OK**.



Excel 2010 Outlining Data

Introduction

	1	2	3		B	
	1	First Name	Last Name			
+	10					
+	21					
•	22	Derek	MacDonald			
•	23	Kris	Ackermann			
•	24	Jordan	Weller			
•	25	Regina	Oliver			
•	26	Alex	Yuen			
-	27					

If the amount of data in your worksheet becomes overwhelming, creating an outline can help. Not only does this allow you to organize your data into groups, and then show or hide them from view; you can also summarize data for quick analysis using the Subtotal command (for example, subtotaling the cost of office supplies depending on the type of product).

In this lesson, you will learn how to **outline** your worksheet in order to summarize and control how your data is displayed.

Outlining Data

Outlines give you the ability to group data that you may want to show or hide from view, and create a quick summary using the Subtotal command. Because outlines rely on grouping data that is related, you **must sort before you can outline**. For more information, you may want to review the [Sorting Data](#) lesson.

To Outline Data Using Subtotal:

The **Subtotal** command can be used to outline your worksheet in many different ways. It uses common functions like SUM, COUNT, AVG, and more, to **summarize** your data, and place it in a **group**. To learn more about functions, visit our [Working with Basic Functions](#) lesson.

In this example, we will use the Subtotal command to count the number of t-shirt sizes that were ordered at a local high school. This will also place each t-shirt size in a group, making it possible to show the count, but hide the details that are not crucial to the placing of the order (such as the student's homeroom number and payment date).

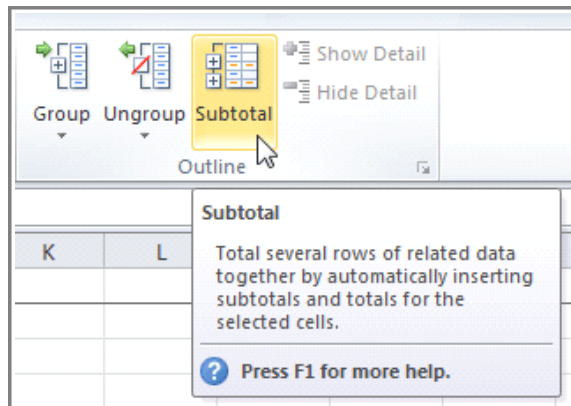
1. **Sort** according to the data you want to outline. Outlines rely on grouping data that is related. In this example,

we will outline the worksheet by T-Shirt Size, which has been sorted from smallest to largest.

	C	D	E	F
1	Last Name	Payment	T-Shirt Color	T-Shirt Size
4	Ellison	Pending	Dark Red	Small
5	White	7-Oct	Heather Grey	Small
6	Reynolds	7-Oct	Heather Grey	Small
7	Shaw	7-Oct	Heather Grey	Small
8	Peyton-Gomez	Pending	White	Small
9	Lazar	14-Oct	White	Small
10	Chen	5-Oct	Dark Red	Medium
11	Kelly	11-Oct	Dark Red	Medium
12	Means	5-Oct	Dark Red	Medium
13	Bell	11-Oct	Dark Red	Medium
14	Albee	13-Oct	Heather Grey	Medium
15	Kelly	11-Oct	Heather Grey	Medium
16	Benson	11-Oct	White	Medium
17	Del Toro	13-Oct	White	Medium
18	Panarello	15-Oct	White	Medium
19	Weller	15-Oct	White	Medium
20	MacDonald	Pending	Dark Red	Large
21	Ackerman	1-Oct	Heather Grey	Large
22	Weller	5-Oct	Heather Grey	Large
23	Olivera	1-Oct	White	Large
24	Yuen	5-Oct	White	Large
25	Richards	4-Oct	Dark Red	X-Large

Sorted by t-shirt size

2. Select the **Data** tab, and locate the **Outline** group.
3. Click the **Subtotal** command to open the Subtotal dialog box.

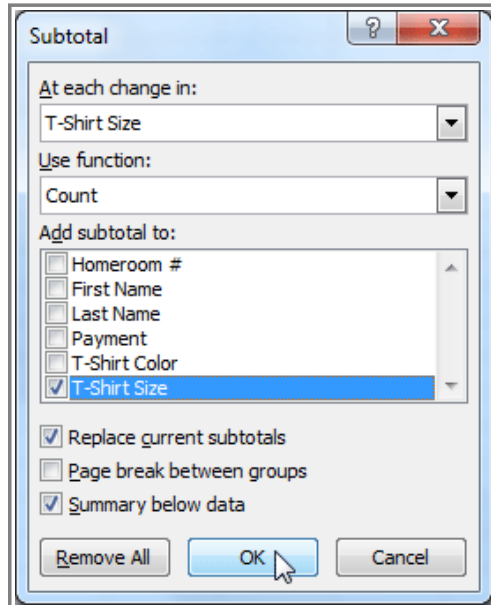


Opening the Subtotal dialog box

4. In the **At each change in** field, select the column you want to use to outline your worksheet. In this example, we will choose T-Shirt Size.
5. In the **Use function** field, choose from the list of functions that are available for subtotaling. We will use the

COUNT function to tally the number of each size.

6. Select the **column** you want the subtotal to appear in. We will choose the T-Shirt Size column.
7. Click **OK**.



Clicking OK to subtotal

8. The contents of your worksheet will be outlined. Each t-shirt size will be placed in its own group, and the subtotal (in this case, count) will be listed below each group.

1	2	3	C	D	E	F
	1		Last Name	Payment	T-Shirt Color	T-Shirt Size
	2	•	Yaron	7-Oct	Dark Red	Small
	3	•	Naser	14-Oct	Dark Red	Small
	4	•	Ellison	Pending	Dark Red	Small
	5	•	White	7-Oct	Heather Grey	Small
	6	•	Reynolds	7-Oct	Heather Grey	Small
	7	•	Shaw	7-Oct	Heather Grey	Small
	8	•	Peyton-Gomez	Pending	White	Small
	9	•	Lazar	14-Oct	White	Small
	10				Small Count	8
	11	•	Chen	5-Oct	Dark Red	Medium
	12	•	Kelly	11-Oct	Dark Red	Medium
	13	•	Means	5-Oct	Dark Red	Medium
	14	•	Bell	11-Oct	Dark Red	Medium
	15	•	Albee	13-Oct	Heather Grey	Medium
	16	•	Kelly	11-Oct	Heather Grey	Medium
	17	•	Benson	11-Oct	White	Medium
	18	•	Del Toro	13-Oct	White	Medium
	19	•	Panarello	15-Oct	White	Medium
	20	•	Weller	15-Oct	White	Medium
	21				Medium Count	10

Outlined with subtotal

Showing or Hiding Data

To Show or Hide a Group:

1. Click the minus sign, also known as the **Hide Detail** symbol, to collapse the group.



1	2	3		C	D	E	F
	1			Last Name	Payment	T-Shirt Color	T-Shirt Size
	8		•	Peyton-Gomez	Pending	White	Small
	9		•	Lazar	14-Oct	White	Small
	10					Small Count	8
	11		•	Chen	5-Oct	Dark Red	Medium
	12		•	Kelly	11-Oct	Dark Red	Medium
	13		•	Means	5-Oct	Dark Red	Medium
	14		•	Bell	11-Oct	Dark Red	Medium
	15		•	Albee	13-Oct	Heather Grey	Medium
	16		•	Kelly	11-Oct	Heather Grey	Medium
	17		•	Benson	11-Oct	White	Medium
	18		•	Del Toro	13-Oct	White	Medium
	19		•	Panarello	15-Oct	White	Medium
	20		•	Weller	15-Oct	White	Medium
	21					Medium Count	10
	22		•	MacDonald	Pending	Dark Red	Large
	23		•	Ackerman	1-Oct	Heather Grey	Large
	24		•	Weller	5-Oct	Heather Grey	Large
	25		•	Olivera	1-Oct	White	Large
	26		•	Yuen	5-Oct	White	Large
	27					Large Count	5

Hiding an expanded group




2. Click the plus sign, also known as the **Show Detail** symbol, to expand the group again.

1	2	3		C	D	E	F
			1	Last Name	Payment	T-Shirt Color	T-Shirt Size
			8	Peyton-Gomez	Pending	White	Small
			9	Lazar	14-Oct	White	Small
			10			Small Count	8
			21			Medium Count	10
			22	MacDonald	Pending	Dark Red	Large
			23	Ackerman	1-Oct	Heather Grey	Large
			24	Weller	5-Oct	Heather Grey	Large
			25	Olivera	1-Oct	White	Large
			26	Yuen	5-Oct	White	Large
			27			Large Count	5
			28	Richards	4-Oct	Dark Red	X-Large
			29	Nichols	6-Oct	Dark Red	X-Large
			30	Hanlon	4-Oct	Heather Grey	X-Large
			31	Flores	6-Oct	White	X-Large
			32			X-Large Count	4
			33			Grand Count	27

Showing a collapsed group

You can also use the  **Show Detail** or  **Hide Detail** commands on the **Data** tab in the Outline group. First select a cell in the group you want to show or hide, then click the appropriate command.

To View Groups by Level:

The groups in your outline, based on their hierarchy, are placed on different levels. You can quickly display as little or as much information as you want by clicking the level symbols    to the left of your worksheet. In this example, we will view levels in descending order, starting with the entire worksheet on display, then finishing with the grand total. While this example contains only 3 levels, Excel can accommodate up to 8.

1. Click the **highest level** (in this example, level **3**) to view and expand all of your groups. Viewing groups at the highest level will display the entirety of your worksheet.

1	2	3		C	D	E	F
	1			Last Name	Payment	T-Shirt Color	T-Shirt Size
	2			Yaron	7-Oct	Dark Red	Small
	3			Naser	14-Oct	Dark Red	Small
	4			Ellison	Pending	Dark Red	Small
	5			White	7-Oct	Heather Grey	Small
	6			Reynolds	7-Oct	Heather Grey	Small
	7			Shaw	7-Oct	Heather Grey	Small
	8			Peyton-Gomez	Pending	White	Small
	9			Lazar	14-Oct	White	Small
	10					Small Count	8
	11			Chen	5-Oct	Dark Red	Medium
	12			Kelly	11-Oct	Dark Red	Medium
	13			Means	5-Oct	Dark Red	Medium
	14			Bell	11-Oct	Dark Red	Medium
	15			Albee	13-Oct	Heather Grey	Medium
	16			Kelly	11-Oct	Heather Grey	Medium
	17			Benson	11-Oct	White	Medium
	18			Del Toro	13-Oct	White	Medium
	19			Panarello	15-Oct	White	Medium
	20			Weller	15-Oct	White	Medium
	21					Medium Count	10
	22			MacDonald	Pending	Dark Red	Large
	23			Ackerman	1-Oct	Heather Grey	Large
	24			Weller	5-Oct	Heather Grey	Large

Viewing data at the highest level

2. Click the **next level** (in this example, level 2) to hide the detail of the previous level. In this example, level 2 contains each subtotal.

1	2	3		C	D	E	F
	1			Last Name	Payment	T-Shirt Color	T-Shirt Size
	10					Small Count	8
	21					Medium Count	10
	27					Large Count	5
	32					X-Large Count	4
	33					Grand Count	27
	34						

Viewing data on level 2

3. Click the **lowest level** (level 1) to display the lowest level of detail. In this example, level 1 contains only the grand total.

1	2	3		C	D	E	F
	1			Last Name	Payment	T-Shirt Color	T-Shirt Size
+	33					Grand Count	27
	34						
	35						

Viewing data on level 1

Removing Groups and Subtotaling

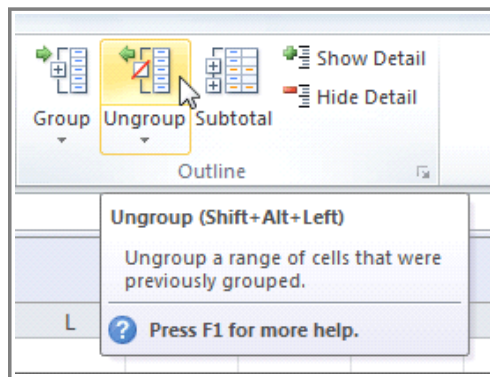
To Ungroup Data:

1. Select the rows or columns that you want to ungroup. In this example, we will ungroup size Small.

1	2	3		C	D	E	F
	1			Last Name	Payment	T-Shirt Color	T-Shirt Size
•	2			Yaron	7-Oct	Dark Red	Small
•	3			Naser	14-Oct	Dark Red	Small
•	4			Ellison	Pending	Dark Red	Small
•	5			White	7-Oct	Heather Grey	Small
•	6			Reynolds	7-Oct	Heather Grey	Small
•	7			Shaw	7-Oct	Heather Grey	Small
•	8			Peyton-Gomez	Pending	White	Small
•	9			Lazar	14-Oct	White	Small
-	10					Small Count	8
•	11			Chen	5-Oct	Dark Red	Medium
•	12			Kelly	11-Oct	Dark Red	Medium
•	13			Means	5-Oct	Dark Red	Medium
•	14			Bell	11-Oct	Dark Red	Medium
•	15			Albee	13-Oct	Heather Grey	Medium
•	16			Kelly	11-Oct	Heather Grey	Medium
•	17			Benson	11-Oct	White	Medium

Selecting cells to ungroup

2. From the **Data** tab, click the **Ungroup** command. The range of cells will be ungrouped.



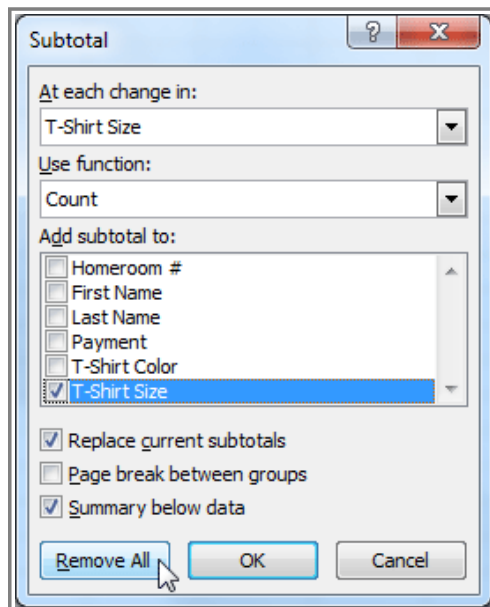
Ungrouping the selected cells

To ungroup all the groups in your outline, open the drop-down menu under the **Ungroup** command, and choose **Clear Outline**.

Ungroup and **Clear Outline** will not remove subtotaling from your worksheet. Summary or subtotal data will stay in place and continue to function until you remove it.

To Ungroup Data and Remove Subtotaling:

1. From the **Data** tab, click the **Subtotal** command to open the Subtotal dialog box.
2. Click **Remove All**.



Removing groups and subtotaling

3. All data will be ungrouped, and subtotals will be removed.

	C	D	E	F
1	Last Name	Payment	T-Shirt Color	T-Shirt Size
4	Ellison	Pending	Dark Red	Small
5	White	7-Oct	Heather Grey	Small
6	Reynolds	7-Oct	Heather Grey	Small
7	Shaw	7-Oct	Heather Grey	Small
8	Peyton-Gomez	Pending	White	Small
9	Lazar	14-Oct	White	Small
10	Chen	5-Oct	Dark Red	Medium
11	Kelly	11-Oct	Dark Red	Medium
12	Means	5-Oct	Dark Red	Medium
13	Bell	11-Oct	Dark Red	Medium
14	Albee	13-Oct	Heather Grey	Medium
15	Kelly	11-Oct	Heather Grey	Medium
16	Benson	11-Oct	White	Medium
17	Del Toro	13-Oct	White	Medium
18	Panarello	15-Oct	White	Medium
19	Weller	15-Oct	White	Medium
20	MacDonald	Pending	Dark Red	Large
21	Ackerman	1-Oct	Heather Grey	Large
22	Weller	5-Oct	Heather Grey	Large
23	Olivera	1-Oct	White	Large
24	Yuen	5-Oct	White	Large
25	Richards	4-Oct	Dark Red	X-Large

Data without groups or subtotaling

Creating Your Own Groups

The **Group** command allows you to group any range of cells - either columns or rows. It does not calculate a subtotal, or rely on your data being sorted. This gives you the ability to show or hide any part of your worksheet, and display only the information you need.

To Create and Control Your Own Group:

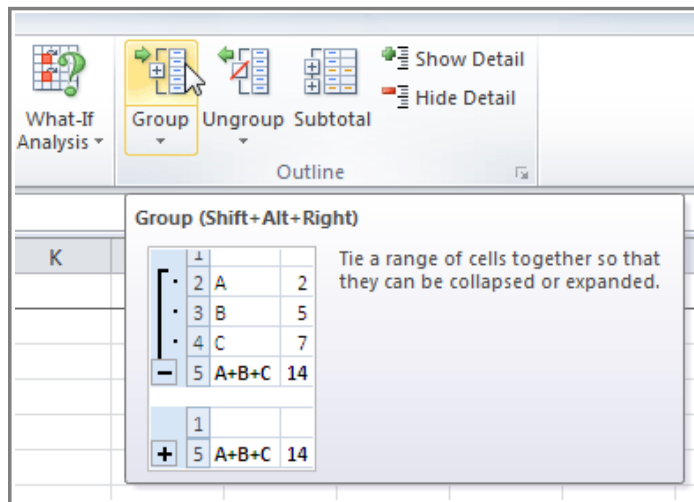
In this example, we will prepare a list of t-shirt colors and sizes that need to be distributed to each homeroom. Some of the data in the worksheet is not relevant to the distribution of the t-shirts; however, instead of deleting it, we will group it, then temporarily hide it from view.

1. Select the range of cells that you want to group. In this example, we will group the First Name, Last Name, and Payment columns.

	B	C	D	E
1	First Name	Last Name	Payment	T-Shirt Color
2	Esther	Yaron	7-Oct	Dark Red
3	Anisa	Naser	14-Oct	Dark Red
4	Brigid	Ellison	Pending	Dark Red
5	Melissa	White	7-Oct	Heather Grey
6	Malik	Reynolds	7-Oct	Heather Grey
7	Windy	Shaw	7-Oct	Heather Grey
8	Christopher	Peyton-Gomez	Pending	White
9	Michael	Lazar	14-Oct	White
10	Christiana	Chen	5-Oct	Dark Red
11	Sidney	Kelly	11-Oct	Dark Red

Selecting a range of cells to group

- From the **Data** tab, click the **Group** command.



Grouping the selected cells

- Excel will group the selected columns or rows.

1				
2				
	B	C	D	E
1	First Name	Last Name	Payment	T-Shirt Color
2	Esther	Yaron	7-Oct	Dark Red
3	Anisa	Naser	14-Oct	Dark Red
4	Brigid	Ellison	Pending	Dark Red
5	Melissa	White	7-Oct	Heather Grey
6	Malik	Reynolds	7-Oct	Heather Grey
7	Windy	Shaw	7-Oct	Heather Grey
8	Christopher	Peyton-Gomez	Pending	White
9	Michael	Lazar	14-Oct	White
10	Christiana	Chen	5-Oct	Dark Red
11	Sidney	Kelly	11-Oct	Dark Red

Grouped cells

- Click the minus sign, also known as the **Hide Detail** symbol, to hide the group.
- The group will be hidden from view.

1			
2			
	A	E	F
1	Homeroom #	T-Shirt Color	T-Shirt Size
2	105	Dark Red	Small
3	135	Dark Red	Small
4	220-A	Dark Red	Small
5	105	Heather Grey	Small
6	220-B	Heather Grey	Small
7	220-B	Heather Grey	Small
8	220-A	White	Small
9	220-B	White	Small
10	105	Dark Red	Medium
11	105	Dark Red	Medium

Click to show a hidden group

Click the plus sign, also known as the **Show Detail** symbol, to show the group again.



Excel 2010

Filtering Data

Introduction

	A	B	
1	Equipment Log — Ragnar Te		
2	ID #	Type	Equipme
3	1011	Laptop	10" Saris
4	1012	Laptop	10" Saris
5	1021	Laptop	15" EDI S
6	1022	Laptop	15" EDI S
7	1023	Laptop	15" EDI S
8	1025	Laptop	15" EDI S
9	1031	Laptop	17" Saris

Filters can be used to narrow down the data in your worksheet and hide parts of it from view. While it may sound a little like grouping, filtering is different in the way that it allows you to qualify and display only the data that interests you. For example, you could filter a list of survey participants to view only those who are between the ages of 25-34. You could also filter an inventory of paint colors to view anything that contains the word "blue," such as "bluebell" or "robin's egg blue."

In this lesson, you will learn how to **filter** the data in your worksheet to display only the information you need.

Filtering Data

Filters can be applied in many different ways to improve the performance of your worksheet. You can filter text, dates, and numbers. You can even use more than one filter to further narrow down your results.

To Filter Data:

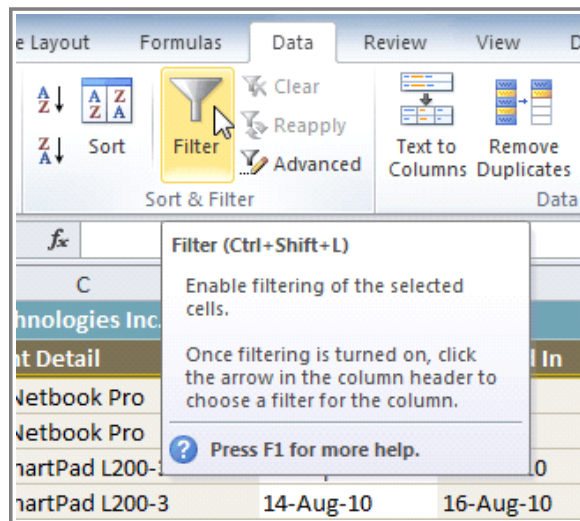
In this example, we will filter the contents of an equipment log at a technology company. We will display only the laptops and projectors that are available for check-out.

1. Begin with a worksheet that identifies each column using a header row.

	A	B	C	D
1	Equipment Log — Ragnar Technologies Inc.			
2	ID #	Type	Equipment Detail	Checked Out
3	1011	Laptop	10" Saris Netbook Pro	04-Oct-10
4	1012	Laptop	10" Saris Netbook Pro	29-Sep-10
5	1021	Laptop	15" EDI SmartPad L200-3	15-Sep-10
6	1022	Laptop	15" EDI SmartPad L200-3	14-Aug-10
7	1023	Laptop	15" EDI SmartPad L200-3	08-Aug-10
8	1025	Laptop	15" EDI SmartPad L200-4X	26-Sep-10
9	1031	Laptop	17" Saris X-10 Laptop	04-Oct-10
10	1032	Laptop	17" Saris X-10 Laptop	19-Sep-10
11	1033	Laptop	17" Saris X-10 Laptop	24-Sep-10
12	1034	Laptop	17" Saris X-10 Laptop	25-Aug-10
13	2050	Other	EDI SmartBoard L500-1	05-Oct-10
14	2051	Other	EDI SmartBoard L500-1	01-Oct-10
15	3000	Other	Saris Lumina Digital Camera	12-May-10

Worksheet with header row

2. Select the **Data** tab, and locate the **Sort & Filter** group.
3. Click the **Filter** command.



Clicking the filter command

4. Drop-down arrows will appear in the header of each column.
5. Click the **drop-down arrow** for the column you would like to filter. In this example, we will filter the Type column to view only certain types of equipment.

	A	B	C	D
1	Equipment Log — Ragnar Technologies Inc.			
2	ID #	Type	Equipment Detail	Checked Out
3	1011	Laptop	10" Core Netbook Pro	04-Oct-10
4	1012	Laptop	Netbook Pro	29-Sep-10
5	1021	Laptop	15" EDI SmartPad L200-3	15-Sep-10
6	1022	Laptop	15" EDI SmartPad L200-3	14-Aug-10
7	1023	Laptop	15" EDI SmartPad L200-3	08-Aug-10

Filtering a column

- The **Filter** menu appears.
- Uncheck** the boxes next to the data you don't want to view. (You can uncheck the box next to **Select All** to quickly uncheck all.)
- Check** the boxes next to the data you do want to view. In this example, we will check Laptop and Projector to view only those types of equipment.

	A	B	C	D
1	Equipment Log — Ragnar Technologies Inc.			
2	ID #	Type	Equipment Detail	Checked Out
3	1011	Laptop	10" Core Netbook Pro	04-Oct-10
4	1012	Laptop	Netbook Pro	29-Sep-10
5	1021	Laptop	15" EDI SmartPad L200-3	15-Sep-10
6	1022	Laptop	15" EDI SmartPad L200-3	14-Aug-10
7	1023	Laptop	15" EDI SmartPad L200-3	08-Aug-10
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22	4905	Other	7N Heavy Rolling Laptop Case	04-Oct-10
23	5020	TV	32" Paragon 440 Plasma TV	11-Aug-10

Selecting filter data

- Click **OK**. All other data will be filtered, or temporarily hidden. Only laptops and projectors will be visible.

	A	B	C	D
1	Equipment Log — Ragnar Technologies Inc.			
2	ID # ▼	Type ▼	Equipment Detail ▼	Checked Out ▼
3	1011	Laptop	10" Saris Netbook Pro	04-Oct-10
4	1012	Laptop	10" Saris Netbook Pro	29-Sep-10
5	1021	Laptop	15" EDI SmartPad L200-3	15-Sep-10
6	1022	Laptop	15" EDI SmartPad L200-3	14-Aug-10
7	1023	Laptop	15" EDI SmartPad L200-3	08-Aug-10
8	1025	Laptop	15" EDI SmartPad L200-4X	26-Sep-10
9	1031	Laptop	17" Saris X-10 Laptop	04-Oct-10
10	1032	Laptop	17" Saris X-10 Laptop	19-Sep-10
11	1033	Laptop	17" Saris X-10 Laptop	24-Sep-10
12	1034	Laptop	17" Saris X-10 Laptop	25-Aug-10
26	6100	Projector	Omega VisX 1.0	28-Sep-10
27	6101	Projector	Omega VisX 1.0	26-Sep-10
28	6102	Projector	Omega VisX 1.0	22-Aug-10

Filtered worksheet

Filtering options can also be found on the Home tab, condensed into the **Sort & Filter** command.

To Add Another Filter:

Filters are additive, meaning you can use as many as you need to narrow down your results. In this example, we will work with a spreadsheet that has already been filtered to display only laptops and projectors. Now we will display only laptops and projectors that were checked out during the month of August.

1. Click the **drop-down arrow** where you would like to add a filter. In this example, we will add a filter to the Checked Out column to view information by date.
2. **Uncheck** the boxes next to the data you don't want to view. **Check** the boxes next to the data you do want to view. In this example, we will check the box next to August.

	A	B	C	D	E
1	Equipment Log — Ragnar Technologies Inc.				
2	ID #	Type	Equipment Detail	Checked Out	Checked In
3	1011	Laptop	10" S		
4	1012	Laptop	10" S		
5	1021	Laptop	15" E		01-Oct-10
6	1022	Laptop	15" E		16-Aug-10
7	1023	Laptop	15" E		15-Aug-10
8	1025	Laptop	15" E		04-Oct-10
9	1031	Laptop	17" S		
10	1032	Laptop	17" S		
11	1033	Laptop	17" S		26-Sep-10
12	1034	Laptop	17" S		27-Aug-10
26	6100	Projector	Ome		01-Oct-10
27	6101	Projector	Ome		27-Sep-10
28	6102	Projector	Ome		23-Aug-10
29	6200	Projector	Saris		04-Sep-10
30	6301	Projector	Saris		
31	6302	Projector	Saris		15-Sep-10
32					
33					
34					
35					

Selecting filter data

- Click **OK**. In addition to the original filter, the new filter will be applied. The worksheet will be narrowed down even further.

	A	B	C	D	E
1	Equipment Log — Ragnar Technologies Inc.				
2	ID #	Type	Equipment Detail	Checked Out	Checked In
6	1022	Laptop	15" EDI SmartPad L200-3	14-Aug-10	16-Aug-10
7	1023	Laptop	15" EDI SmartPad L200-3	08-Aug-10	15-Aug-10
12	1034	Laptop	17" Saris X-10 Laptop	25-Aug-10	27-Aug-10
28	6102	Projector	Omega VisX 1.0	22-Aug-10	23-Aug-10
32					

Worksheet with two filters

To Clear a Filter:

- Click the **drop-down arrow** in the column from which you want to clear the filter.
- Choose **Clear Filter From...**

	A	B	C	D	E
1	Equipment Log — Ragnar Technologies Inc.				
2	ID #	Type	Equipment Detail	Checked Out	Checked In
6	1022	Laptop	15" E	Sort Oldest to Newest	16-Aug-10
7	1023	Laptop	15" E	Sort Newest to Oldest	15-Aug-10
12	1034	Laptop	17" S	Sort by Color	27-Aug-10
28	6102	Projector	Ome	Clear Filter From "Checked Out"	23-Aug-10
32				Filter by Color	
33				Date Filters	
34					
35				Search (All)	
36				(Select All)	
37				2010	
38				August	
39				September	
40				October	

Clearing a filter

3. The filter will be cleared from the column. The data that was previously hidden will be on display once again. To instantly clear all filters from your worksheet, click the **Filter** command on the Data tab.

Advanced Filtering

To Filter Using Search:

Searching for data is a convenient alternative to checking or unchecking data from the list. You can search for data that contains an exact phrase, number, or date, or a simple fragment. For example, searching for the exact phrase "Saris X-10 Laptop" will display only Saris X-10 Laptops. Searching for the word "Saris," however, will display Saris X-10 Laptops, and any other Saris equipment, including projectors, digital cameras, and more.

1. From the **Data** tab, click the **Filter** command.
2. Click the **drop-down arrow** in the column you would like to filter. In this example, we will filter the Equipment Detail column to view only a specific brand.
3. Enter the data you would like to view in the **Search** box. We will enter the word "Saris" to find all Saris brand equipment. The search results will appear automatically.

	A	B	C	D
1	Equipment Log — Ragnar Technologies Inc.			
2	ID #	Type	Equipment Detail	Checked Out
3	1011			04-Oct-10
4	1012			29-Sep-10
5	1021			15-Sep-10
6	1022			14-Aug-10
7	1023			08-Aug-10
8	1025			26-Sep-10
9	1031			04-Oct-10
10	1032			19-Sep-10
11	1033			24-Sep-10
12	1034			25-Aug-10
13	2050			05-Oct-10
14	2051			01-Oct-10
15	3000			12-May-10
16	3005			27-Jul-10
17	3070			06-Oct-10
18	3800			04-Aug-10
19	3900			13-Jun-10
20	4800			27-Jul-10
21	4900			04-Oct-10
22	4905	Other	7N Heavy Rolling Laptop Case	04-Oct-10

Entering a search

- Check** the boxes next to the data you want to display. We will display all the data that includes the brand name Saris.
- Click **OK**. The worksheet will be filtered according to your search term.

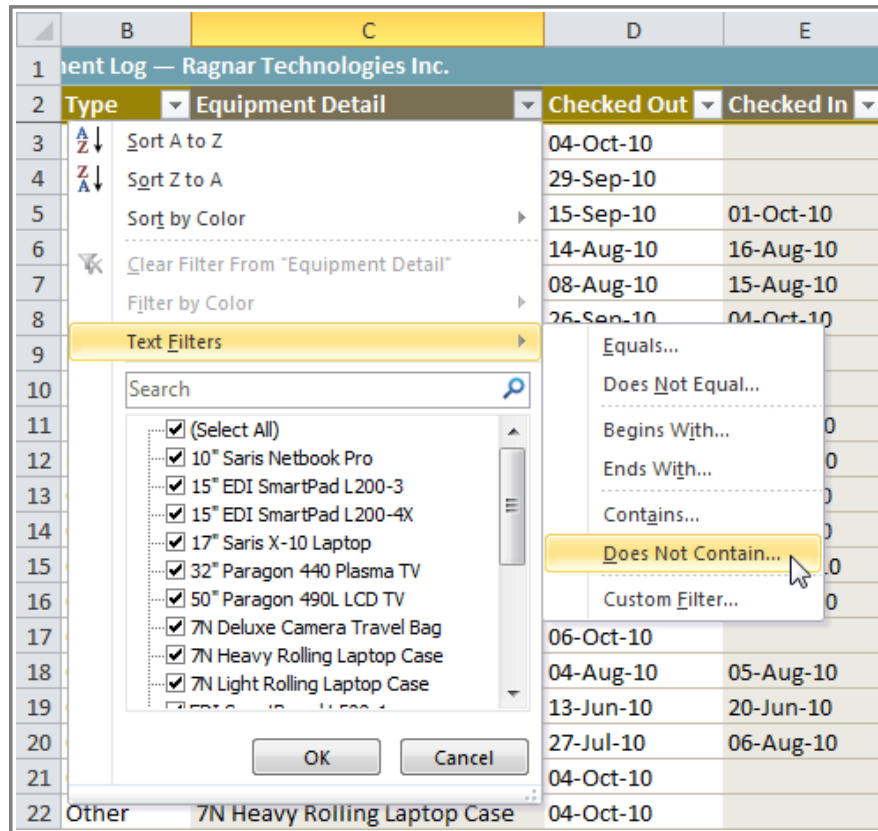
	A	B	C	D
1	Equipment Log — Ragnar Technologies Inc.			
2	ID #	Type	Equipment Detail	Checked Out
3	1011	Laptop	10" Saris Netbook Pro	04-Oct-10
4	1012	Laptop	10" Saris Netbook Pro	29-Sep-10
9	1031	Laptop	17" Saris X-10 Laptop	04-Oct-10
10	1032	Laptop	17" Saris X-10 Laptop	19-Sep-10
11	1033	Laptop	17" Saris X-10 Laptop	24-Sep-10
12	1034	Laptop	17" Saris X-10 Laptop	25-Aug-10
15	3000	Other	Saris Lumina Digital Camera	12-May-10
16	3005	Other	Saris Zoom Z-60 Digital Camera	27-Jul-10
18	3800	Other	U-Go Saris DigiCam Printer II	04-Aug-10
19	3900	Other	U-Go Saris Label Maker	13-Jun-10
29	6200	Projector	Saris Lux T-80	01-Sep-10
30	6301	Projector	Saris Lux T-81 Lite	10-Sep-10
31	6302	Projector	Saris Lux T-81 Lite	08-Sep-10
32				

Worksheet filtered using Search

To Use Advanced Text Filters:

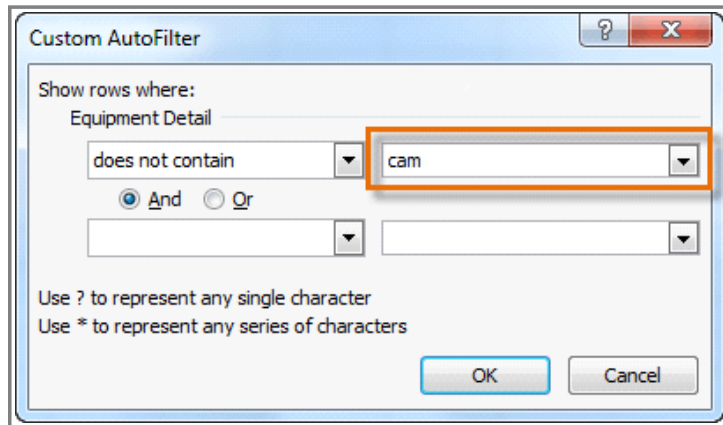
Advanced text filters can be used to display more specific information, such as cells that contain a certain number of characters, or data that does *not* contain a word you specify. In this example, we will use advanced text filters to hide any equipment that is related to cameras, including digital cameras, camcorders, and more.

1. From the **Data** tab, click the **Filter** command.
2. Click the **drop-down arrow** in the column of **text** that you would like to filter. In this example, we will filter the Equipment Detail column to view only certain kinds of equipment.
3. Choose **Text Filters** to open the advanced filtering menu.
4. Choose a **filter**. In this example, we will choose **Does Not Contain** to view data that does not contain the text we specify.



Selecting a text filter

5. The **Custom AutoFilter** dialog appears.
6. Enter your **text** to the right of your filter. In this example, we will enter "cam" to view data that does not contain those letters. That will exclude any equipment related to cameras, such as digital **cameras**, **camcorders**, **camera** bags, and the **digicam** printer.



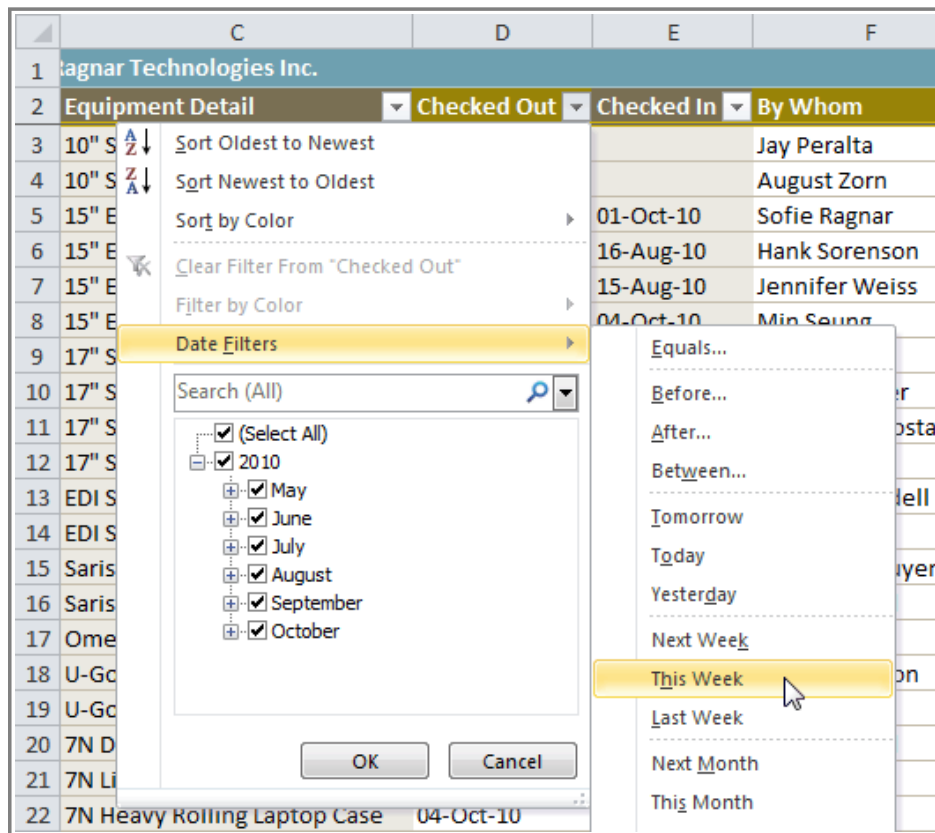
Entering filter text

7. Click **OK**. The data will be filtered according to the filter you chose and the text you specified.

To Use Advanced Date Filters:

Advanced date filters can be used to view information from a certain time period, such as last year, next quarter, between two dates, and more. Excel automatically knows your current date and time, making this tool very easy to use. In this example, we will use advanced date filters to view only the equipment that has been checked out this week.

1. From the **Data** tab, click the **Filter** command.
2. Click the **drop-down arrow** in the column of **dates** that you would like to filter. In this example, we will filter the Checked Out column to view only a certain range of dates.
3. Choose **Date Filters** to open the advanced filtering menu.
4. Click a **filter**. We will choose This Week to view equipment that has been checked out this week.



Selecting a date filter

5. The worksheet will be filtered according to the date filter you chose.

	C	D	E	F
1	Ragnar Technologies Inc.			
2	Equipment Detail	Checked Out	Checked In	By Whom
3	10" Saris Netbook Pro	04-Oct-10		Jay Peralta
9	17" Saris X-10 Laptop	04-Oct-10		Nick Ortiz
13	EDI SmartBoard L500-1	05-Oct-10	06-Oct-10	Anthony Liddell
17	Omega PixL Digital Camcorder	06-Oct-10		Min Seung
21	7N Light Rolling Laptop Case	04-Oct-10		Jay Peralta
22	7N Heavy Rolling Laptop Case	04-Oct-10		Nick Ortiz
32				

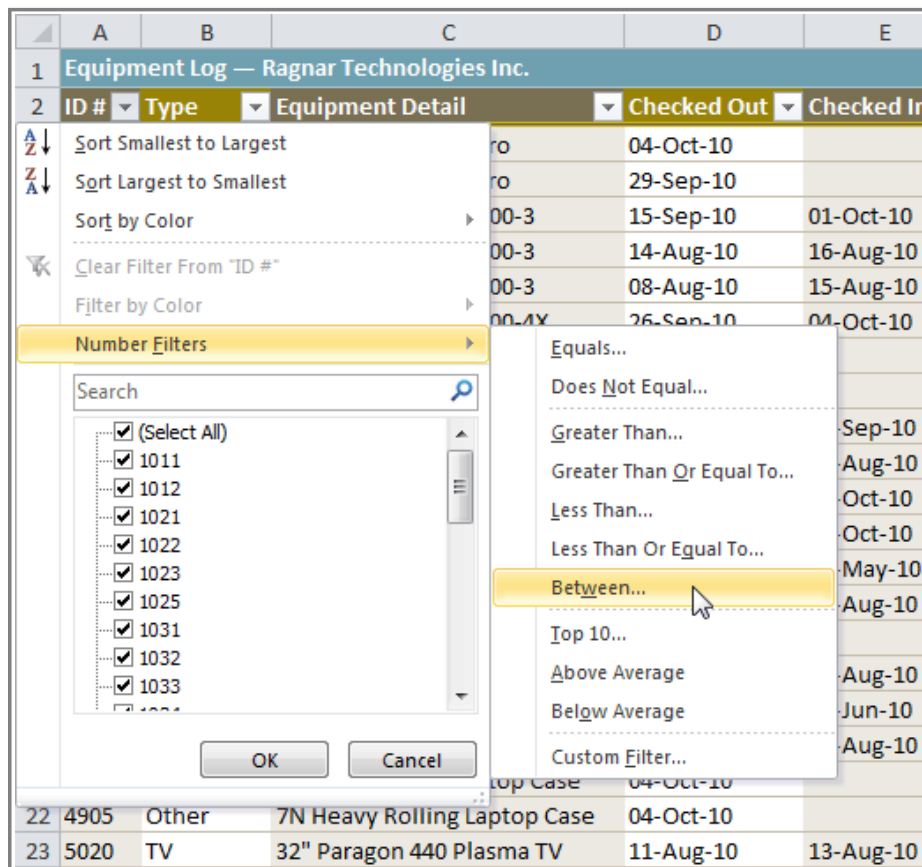
Worksheet filtered by date

To Use Advanced Number Filters:

Advanced number filters allow you to manipulate numbered data in many different ways. For example, in a worksheet of exam grades, you could display the top and bottom numbers to view the highest and lowest scores. In this example, we will display only certain kinds of equipment based on the range of ID #s that have been

assigned to them.

1. From the **Data** tab, click the **Filter** command.
2. Click the **drop-down arrow** in the column of **numbers** that you would like to filter. In this example, we will filter the ID # column to view only a certain range of ID #s.
3. Choose **Number Filters** to open the advanced filtering menu.
4. Choose a **filter**. In this example, we will choose Between to view ID #s between the numbers we specify.



Selecting a number filter

5. Enter a **number** to the right of each filter. In this example, we will view ID #s greater than or equal to 3000, but less than or equal to 4000. That will display ID #s in the 3000-4000 range.

Custom AutoFilter

Show rows where:

ID #

is greater than or equal to 3000

☒ And ☐ Or

is less than or equal to 4000

Use ? to represent any single character
Use * to represent any series of characters

OK Cancel

Entering filter numbers

6. Click **OK**. The data will be filtered according to the filter you chose and the numbers you specified.

	A	B	C	D
1	Equipment Log — Ragnar Technologies Inc.			
2	ID #	Type	Equipment Detail	Checked Out
15	3000	Other	Saris Lumina Digital Camera	12-May-10
16	3005	Other	Saris Zoom Z-60 Digital Camera	27-Jul-10
17	3070	Other	Omega PixL Digital Camcorder	06-Oct-10
18	3800	Other	U-Go Saris DigiCam Printer II	04-Aug-10
19	3900	Other	U-Go Saris Label Maker	13-Jun-10
32				

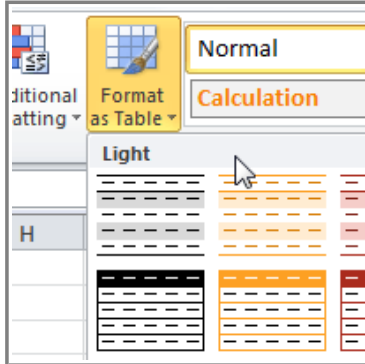
Worksheet filtered by number



Excel 2010

Formatting Tables

Introduction




Once you have entered information into a spreadsheet, you may want to format it. Formatting your spreadsheet can not only improve the look and feel, but also make it easier to use. In a previous lesson, we discussed many manual formatting options such as bold and italics. In this lesson, you will learn how to **format as a table**, to take advantage of the tools and predefined table styles available in Excel 2010.

Formatting Tables

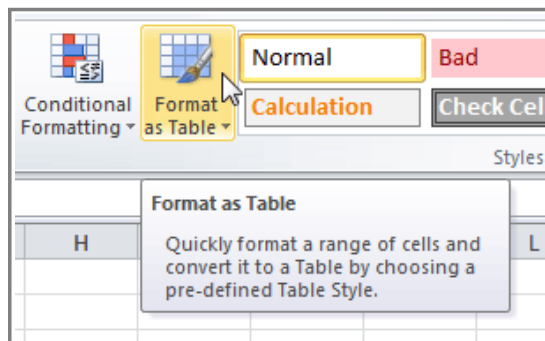
To Format Information as a Table:

1. Select the cells you want to format as a table. In this example, an invoice, we will format the cells that contain the column headers and the order details.

	A	B	C	D
1		Mongibello ARTISAN PASTA	Date:	11/13/10
2			Invoice #:	145-10
3			Customer:	Café Aurora
4	Quantity	Description	Unit Price	Line Total
5	5	Fettuccini, Black Bean Flavor	\$12.00	\$60.00
6	7	Fettuccini, Sundried Tomato Flavor	\$10.00	\$70.00
7	9	Fettuccini, Thai Basil Flavor	\$10.00	\$90.00
8	6	Penne, Roasted Red Pepper Flavor	\$14.00	\$84.00
9	3	Penne, Massaman Curry Flavor	\$14.00	\$42.00
10	4	Penne, Wild Mushroom Flavor	\$15.00	\$60.00
11				

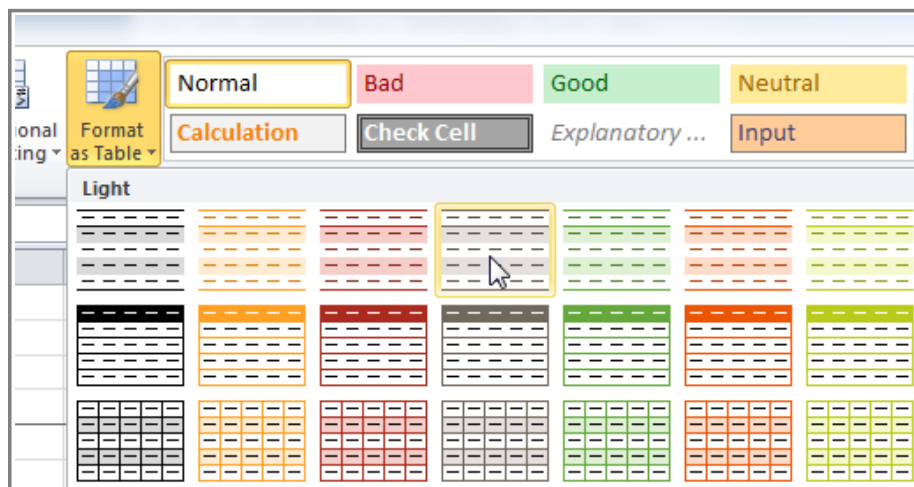
Selecting cells to format as a table

- Click the **Format as Table** command in the **Styles** group on the Home tab.



Format as Table command

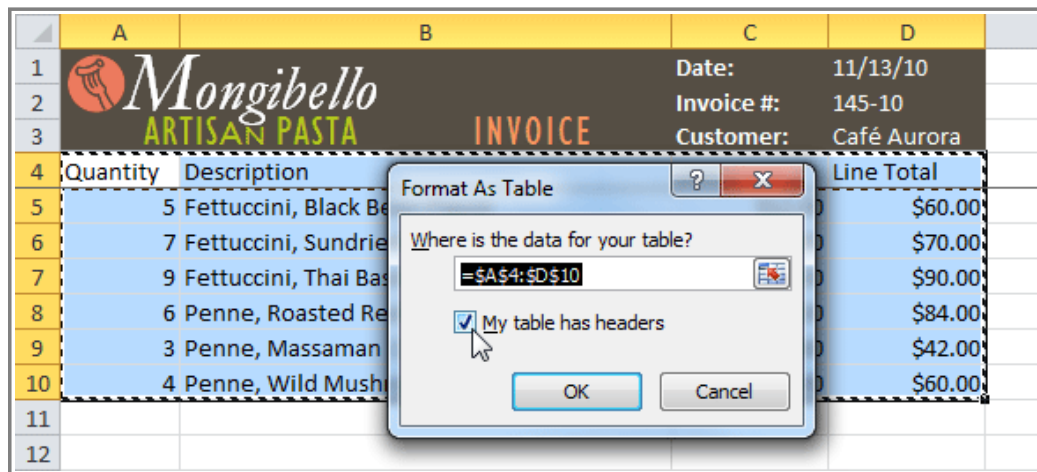
- A list of predefined **table styles** will appear. Click a table style to select it.



Selecting a table style


- A dialog box will appear, confirming the **range** of cells you have selected for your table. The cells will appear selected in the spreadsheet, and the range will appear in the dialog box.

5. If necessary, **change** the range by selecting a new range of cells directly on your spreadsheet.
6. If your table has headers, check the box next to **My table has headers**.



Creating a table

7. Click **OK**. The data will be formatted as a table in the style that you chose.

	A	B	C	D
1		Mongibello	Date:	11/13/10
2		ARTISAN PASTA	Invoice #:	145-10
3		INVOICE	Customer:	Café Aurora
4	Quantity	Description	Unit Price	Line Total
5	5	Fettuccini, Black Bean Flavor	\$12.00	\$60.00
6	7	Fettuccini, Sundried Tomato Flavor	\$10.00	\$70.00
7	9	Fettuccini, Thai Basil Flavor	\$10.00	\$90.00
8	6	Penne, Roasted Red Pepper Flavor	\$14.00	\$84.00
9	3	Penne, Massaman Curry Flavor	\$14.00	\$42.00
10	4	Penne, Wild Mushroom Flavor	\$15.00	\$60.00
11				

Data formatted as a table

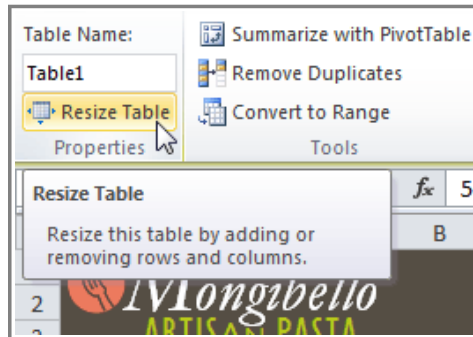
Tables include **filtering** by default. You can filter your data at any time using the **drop-down arrows** in the header. To learn more, review our [Filtering Data](#) lesson.

To convert a table back into "normal" cells, click the **Convert to Range** command in the **Tools** group. The filters and the Design tab will then disappear, but the cells will retain their data and formatting.

Modifying Tables

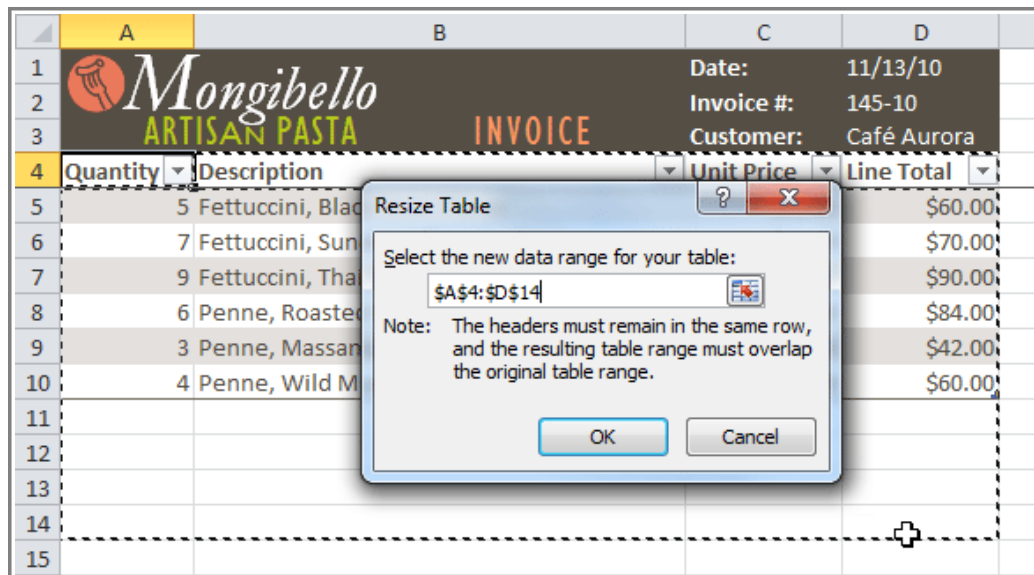
To Add Rows or Columns:

1. Select **any cell** in your table. The **Design** tab will appear on the Ribbon.
2. From the Design tab, click the **Resize Table** command.




Resize Table command

3. Directly on your spreadsheet, select the new **range** of cells that you want your table to cover. You must select your original table cells as well.



Selecting a new range of cells

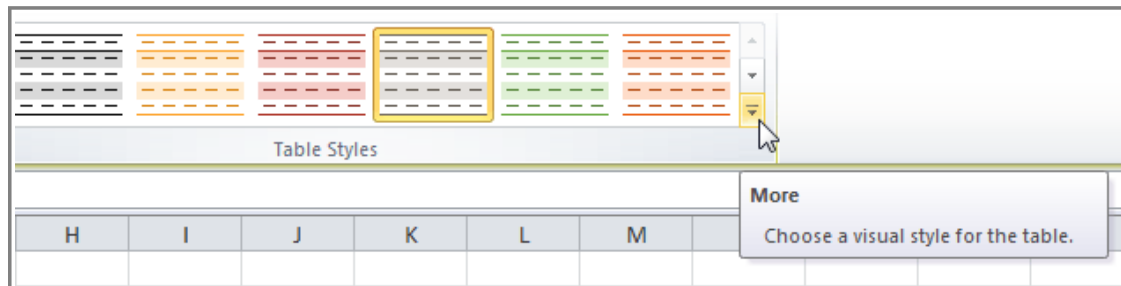
4. Click **OK**. The new rows and/or columns will be added to your table.

	A	B	C	D
1		Mongibello ARTISAN PASTA	Date:	11/13/10
2			Invoice #:	145-10
3			Customer:	Café Aurora
4	Quantity	Description	Unit Price	Line Total
5	5	Fettuccini, Black Bean Flavor	\$12.00	\$60.00
6	7	Fettuccini, Sundried Tomato Flavor	\$10.00	\$70.00
7	9	Fettuccini, Thai Basil Flavor	\$10.00	\$90.00
8	6	Penne, Roasted Red Pepper Flavor	\$14.00	\$84.00
9	3	Penne, Massaman Curry Flavor	\$14.00	\$42.00
10	4	Penne, Wild Mushroom Flavor	\$15.00	\$60.00
11				
12				
13				
14				
15				

After adding new rows


To Change the Table Style:

1. Select **any cell** in your table. The **Design** tab will appear.
2. Locate the **Table Styles** group. Click the **More** drop-down arrow to see all of the table styles.



The More drop-down arrow

3. Hover the mouse over the various styles to see a live preview.
4. Select the desired style. The table style will appear in your worksheet.

	A	B	C	D	
1		Mongibello ARTISAN PASTA	Date:	11/13/10	
2			Invoice #:	145-10	
3			Customer:	Café Aurora	
4	Quantity	Description	Unit Price	Line Total	
5	5	Fettuccini, Black Bean Flavor	\$12.00	\$60.00	
6	7	Fettuccini, Sundried Tomato Flavor	\$10.00	\$70.00	
7	9	Fettuccini, Thai Basil Flavor	\$10.00	\$90.00	
8	6	Penne, Roasted Red Pepper Flavor	\$14.00	\$84.00	
9	3	Penne, Massaman Curry Flavor	\$14.00	\$42.00	
10	4	Penne, Wild Mushroom Flavor	\$15.00	\$60.00	
11					

After changing the table style

To Change the Table Style Options:

When using an Excel table, you can turn various options **on** or **off** to change its appearance. There are six options: **Header Row**, **Total Row**, **Banded Rows**, **First Column**, **Last Column**, and **Banded Columns**.

1. Select **any cell** in your table. The **Design** tab will appear.
2. From the **Design** tab, **check** or **uncheck** the desired options in the **Table Style Options** group.

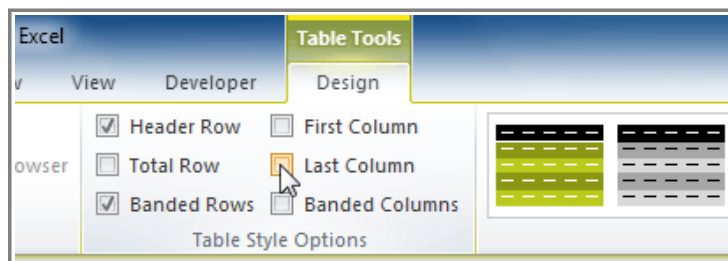


Table style options

Depending on the **Table Style** you're using, certain **Table Style Options** may have a different effect. You may need to **experiment** to get the exact look you want.



Excel 2010

Reviewing and Sharing Workbooks

Introduction

AGENDA PLANNER	
Facilitator	
Marianne	B. New Change
See Liz for info	
Dean	
Garth, exec team	

Suppose someone asked you to proofread or collaborate on a worksheet they put together. If you had a hard copy, you might use a red pen to cross out cell data, mark misspellings, or add comments in the margins. However, you could also do all of these things in Excel using the **Track Changes** and **Comments** features.

When you've finished reviewing the worksheet, the other person can choose to automatically **Accept** all of your changes, or decide whether to **Accept** or **Reject** each change one-by-one.

In this lesson, you will learn how to **track changes**, add **comments**, and **compare** two versions of a worksheet. You will also learn how to prepare a **final** version for sharing, including how to **check spelling**.

Tracking Changes

About Track Changes

When you turn on the **Track Changes** option, every change you make to the worksheet will be **highlighted** with a unique border and indicator. Hovering your mouse over a highlighted cell will display the details of the change. This allows the other person to see what changes have been made before making the changes permanent.

Time	Item	Facilitator
AM: 0:15	Break	
PM: 1:45	Cady Falls hike (strategy game?)	Marianne, Liz
PM: 1:00	Lunch (with strategy game team)	
PM: 0:30	Strategy debrief	Marianne
PM: 1:00	Get to know your team	Se
PM: 1:00	Strengths exercise	
PM: 0:15	Break	
PM: 0:45	Redwoods hike	Dean
PM: 1:00	Team building exercise	Garth, exec team
PM: 2:00	Dinner	
12:00		

B. Nemec, 10/12/2010 2:46 PM:
 Changed cell D14 from '?' to 'Get to know your team'.

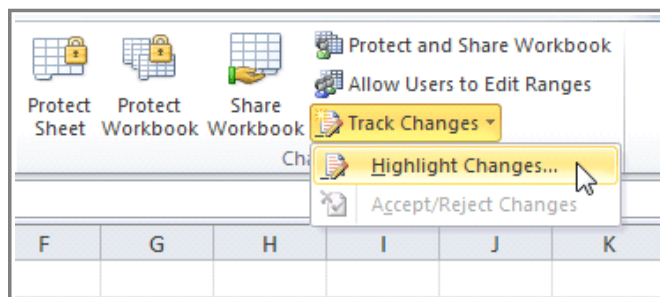
Worksheet with tracked changes

The **color** of the highlights will vary depending on who is reviewing the document, so if there are multiple reviewers, you'll be able to tell at a glance who made each change.

There are some changes that Excel **cannot** track. Familiarize yourself at [changes that Excel does not track or highlight](#).

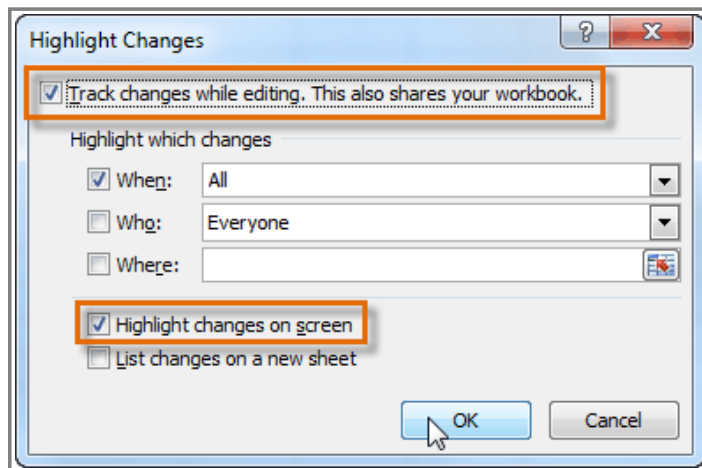
To Turn on Track Changes:

1. Go to the **Review** tab.
2. Click **Track Changes**, then select **Highlight Changes** from the drop-down menu.




Highlight tracked changes

3. The **Highlight Changes** dialog box will appear.
4. Check the box next to **Track changes while editing**.
5. Verify the box is checked for **Highlight changes on screen**. This will highlight your changes while you work.
6. Click **OK**.



Turning Track Changes on

7. If prompted, click **OK** to allow Excel to save your workbook
8. Change tracking is now active. Any changes you make to the worksheet will be **highlighted** with a unique border and indicator.

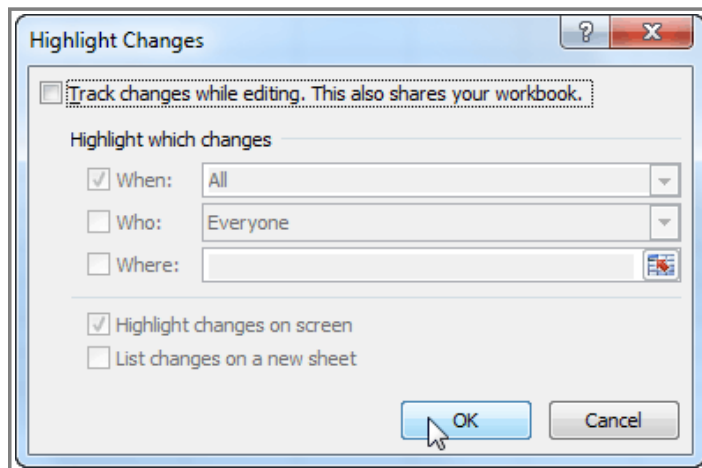
	A	B	C	D
1	 <div> Event: Team Building Retreat Location: Waverly Point Nature Preserve Date: Friday, November 12, 2010 </div>			
2				
3				
4				
5				
6	Start	End	Time	Item
7	8:00 AM	9:00 AM	1:00	Breakfast, welcome
8	9:00 AM	9:15 AM	0:30	Introduction
9	9:15 AM	10:15 AM	1:00	Work relationships exercise
10	10:15 AM	10:30 AM	0:15	Break
11	10:30 AM	12:15 PM	1:45	Cady Falls hike (strategy game?)

Worksheet with tracked changes

Your workbook will be "shared" automatically when you turn Track Changes on. Shared workbooks are designed to be stored where other users (such as users on the same network) can access and edit the workbook at the same time. However, you can also track changes in a local or personal copy, as seen throughout this lesson.

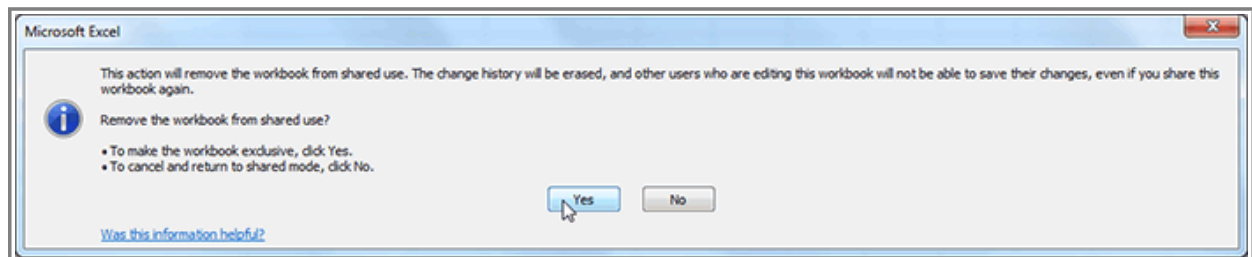
To Turn off Track Changes:

1. From the **Review** tab, click **Track Changes**. Then select **Highlight Changes** from the drop-down menu.
2. Uncheck the box next to **Track changes while editing**.




Turning Track Changes off

3. Click **Yes** to confirm that you want to turn off Track Changes and stop sharing your workbook.



Removing the workbook from shared mode

-  Turning off Track Changes will delete any tracking that has taken place in your workbook. You will not be able to view, accept, or reject changes; instead, they will all be applied to your workbook automatically. Always review the changes in your worksheet before turning Track Changes off.

Adding and Deleting Comments

Sometimes, you may want to add a **comment** to a worksheet, to provide feedback for the author instead of changing the contents. Comments are highlighted by a unique indicator and can be read by the original author or by any other reviewers.

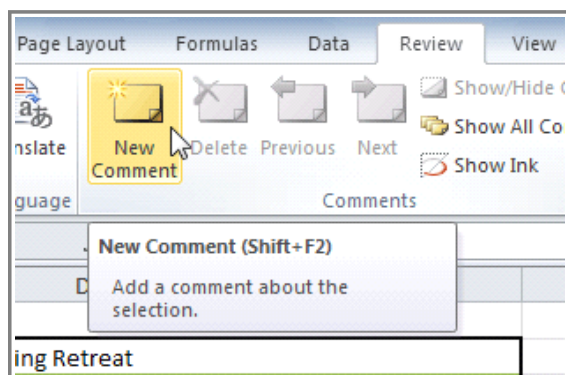
To Add a Comment:

1. Select the cell where you want the comment to appear.

6	Time	Item	Facilitator
9	1:00	Work relationships exercise	Garth, Dean, Liz
10	0:15	Break	
11	1:45	Cady Falls hike (strategy game?)	Marianne, Liz
12	1:00	Lunch (with strategy game team)	
13	0:30	Strategy debrief	Marianne
14	1:00	Get to know your team	See Liz for info
15	1:00	Strengths exercise	

Selecting a cell

2. From the **Review** tab, click the **New Comment** command.



New Comment command

3. Type your comment.

6	Time	Item	Facilitator
9	1:00	Work relationships exercise	Garth, Dean, Liz
10	0:15	Break	
11	1:45	Cady Falls hike (strategy game?)	Marianne, Liz
12	1:00	Lunch (with strategy game team)	
13	0:30	Strategy debrief	Marianne
14	1:00	Get to know your team	See Liz for info
15	1:00	Strengths exercise	

Typing a comment

4. The red **indicator** in the upper right corner shows that there is a comment in that cell.

6	Time	Item	Facilitator
9	1:00	Work relationships exercise	Garth, Dean, Liz
10	0:15	Break	
11	1:45	Cady Falls hike (strategy game?)	Marianne, Liz
12	1:00	Lunch (with strategy game team)	
13	0:30	Strategy debrief	Marianne
14	1:00	Get to know your team	See Liz for info
15	1:00	Strengths exercise	

Comment indicator

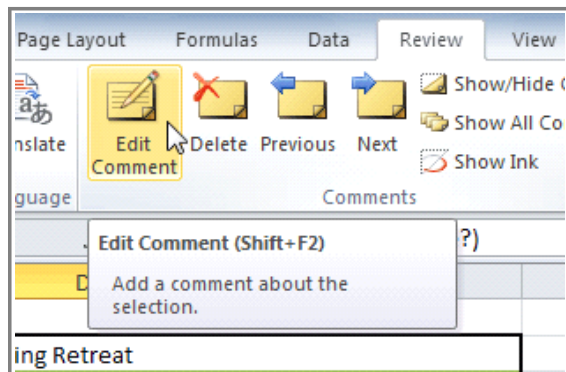
5. Hover your mouse over the cell to **view** the comment.

6	Time	Item	Facilitator
9	1:00	Work relationships exercise	Garth, Dean, Liz
10	0:15	Break	
11	1:45	Cady Falls hike (strategy game?)	M
12	1:00	Lunch (with strategy game team)	M
13	0:30	Strategy debrief	M
14	1:00	Get to know your team	See Liz for info
15	1:00	Strengths exercise	

B. Nemec:
This would be a great time to do the strategy game.

Viewing a comment**To Edit a Comment:**

1. Select the cell containing the comment you wish to edit.
2. From the **Review** tab, click the **Edit Comment** command (where the New Comment command used to be).

**Edit Comment command**

3. Edit your comment.

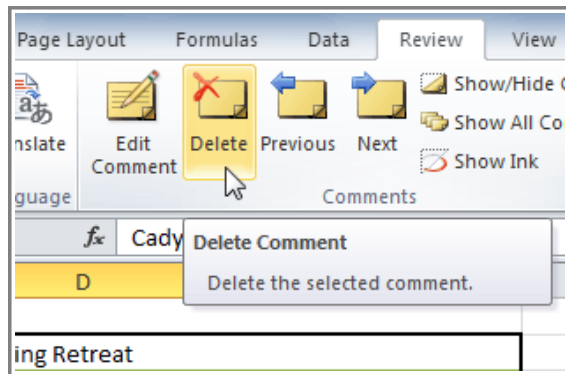
6	Time	Item	Facilitator
9	1:00	Work relationships exercise	Garth, Dean, Liz
10	0:15	Break	
11	1:45	Cady Falls hike (strategy game?)	M
12	1:00	Lunch (with strategy game team)	M
13	0:30	Strategy debrief	M
14	1:00	Get to know your team	See Liz for info
15	1:00	Strengths exercise	

B. Nemec:
This would be a great time to do the strategy game. Liz has the materials.

Editing a comment

To Delete a Comment:

1. Select the cell containing the comment you wish to delete.
2. From the **Review** tab, click the **Delete** command.



Delete command

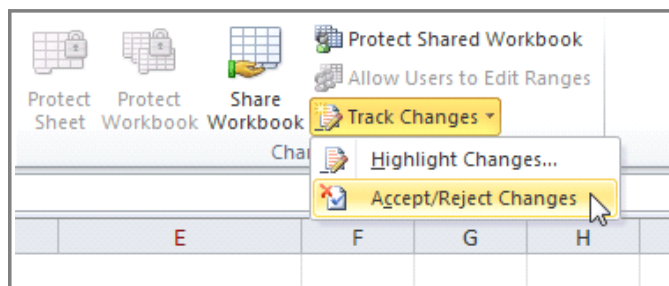
3. The comment will be deleted.

Accepting or Rejecting Changes

Tracked changes are really just "suggested" changes. To become permanent, they have to be **Accepted**. On the other hand, the original author may disagree with some of the tracked changes and choose to **Reject** them.

To Accept or Reject Changes:

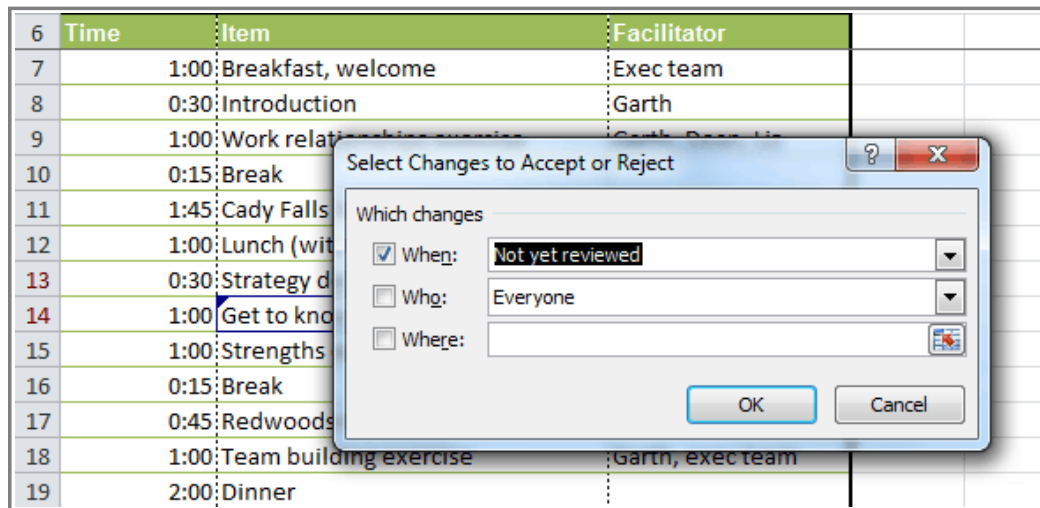
1. From the **Review** tab, click **Track Changes**. Then select **Accept/Reject Changes** from the drop-down menu.



Accept/Reject Changes command

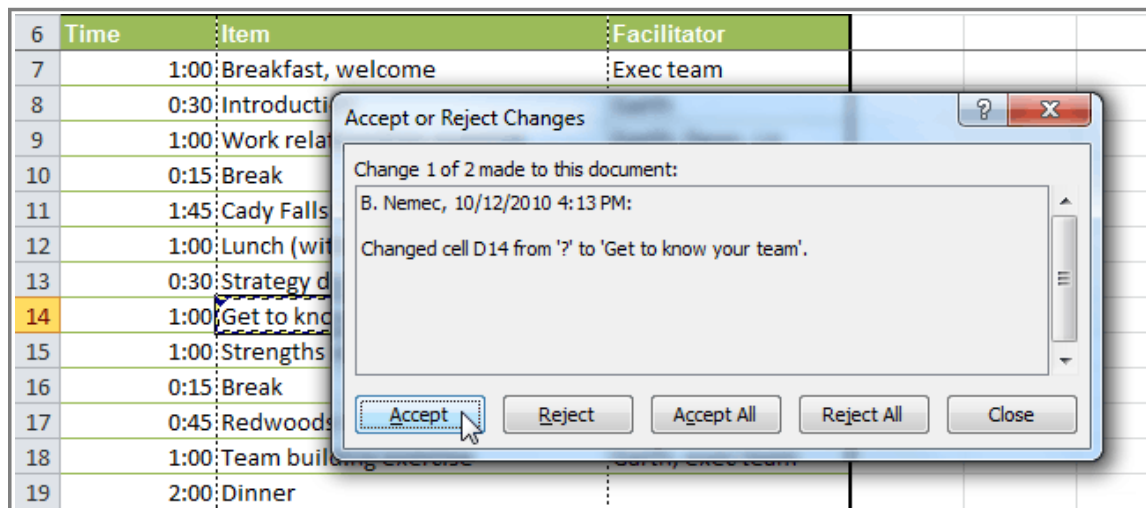
2. If prompted, allow Excel to save your workbook.

- Identify **which changes** you want to accept or reject. In this example, we will address all the changes that we have **not yet reviewed**.



Identifying which changes to accept or reject

- Click **OK**.
- The **Accept or Reject Changes** dialog box will appear.
- Click **Accept** or **Reject** for each change in the document. Excel will cycle through each change automatically until you have addressed them all.



Accepting or rejecting each change

- When you're done, the cell highlights will disappear, and the worksheet will appear "normal." To accept or reject all the changes at once, click **Accept All** or **Reject All** in the Accept or Reject Changes dialog box.

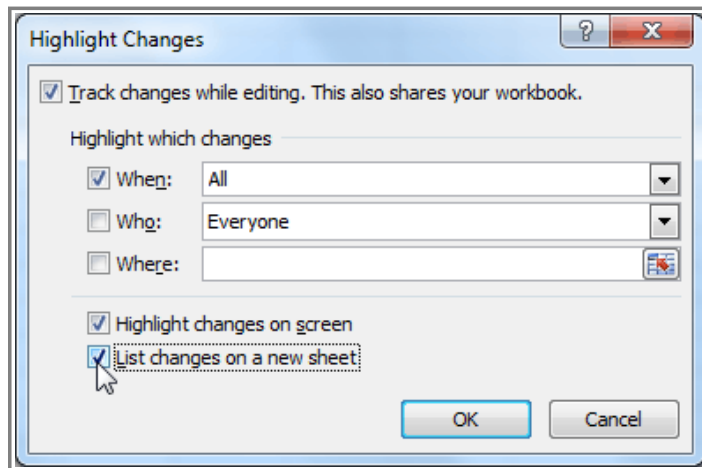
Adjusting How Changes are Viewed

Sometimes it's hard to see exactly what has been changed in a shared workbook. Taking in the meaning of a large amount of feedback can also be problematic if your worksheet contains many comments. There are a couple of settings you can use to adjust the way changes and comments are viewed.

To List Changes on a Separate Worksheet:

An alternative to viewing them as highlights on your worksheet, you can view changes on a new worksheet of their own, sometimes called the **change history**. The change history lists everything in your worksheet that has been changed, including the "old value" (what the cell used to contain) and the "new value" (what the cell contains now).

1. **Save** your workbook.
2. From the **Review** tab, click **Track Changes**. Then select **Highlight Changes** from the drop-down menu.
3. Check the box next to **List changes on a new sheet**.



Listing changes on a separate worksheet

4. Click **OK**.
5. The changes will be listed in a new sheet of their own, titled **History**.

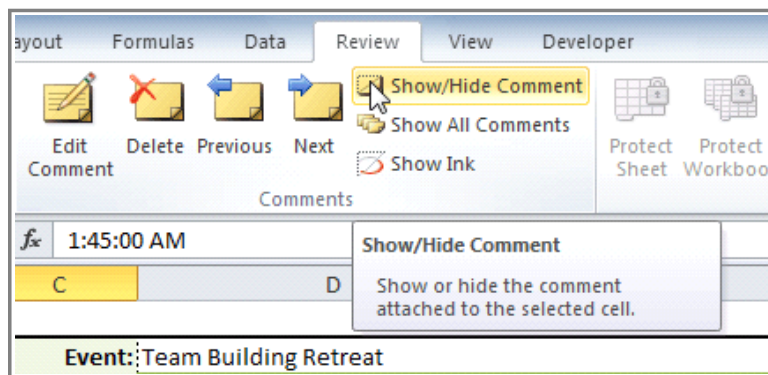
	A	B	C	D	E	F	G	H
	Action							New
1	Number	Date	Time	Who	Change	Sheet	Range	Value
2	1	10/12/2010	5:04 PM	B. Nemec	Cell Change	Agenda Planner	E13	Marianne
3	2	10/12/2010	5:04 PM	B. Nemec	Cell Change	Agenda Planner	D14	Get to know your team
4	3	10/12/2010	5:04 PM	B. Nemec	Cell Change	Agenda Planner	D15	Team building exercise
5	4	10/12/2010	5:04 PM	B. Nemec	Cell Change	Agenda Planner	D18	Strengths exercise
6	5	10/12/2010	5:04 PM	B. Nemec	Cell Change	Agenda Planner	D11	Cady Falls hike (strategy game)
7								
8	The history ends with the changes saved on 10/12/2010 at 5:04 PM.							
9								

The change history worksheet

To **remove** the History worksheet from your workbook, you can either **save** your workbook again, or uncheck the box next to **List changes on a new sheet**.

To Show or Hide Comments:

1. Select a cell that contains a comment.
2. From the **Review** tab, click the **Show/Hide Comment** command to show the comment.



Show/Hide Comment command

3. The comment will remain on display without you having to mouse over the cell.

6	Time	Item	Facilitator
9	1:00	Work relationships exercise	Garth, Dean, Liz
10	0:15	Break	
11	1:45	Call Liz and I can make this (name)	Marianne, Liz
12	1:00	Lu 1:30 if necessary. (team)	
13	0:30	St	Marianne
14	1:00	Get to know your team	See Liz for info
15	1:00	Team building exercise	
16	0:15	Break	

Comment on display

4. Click the **Show/Hide Comment** command again to hide the comment.

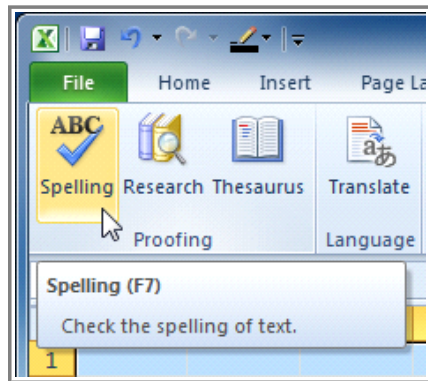
Click the  **Show All Comments** command to view every comment in your worksheet at once.

Finalizing and Protecting Your Workbook

Before you send your workbook out, take a minute to prepare a final copy. Excel has tools that might save you from sharing a workbook that contains spelling errors, or information about the workbook itself that you do not want the recipient to see. Use the **Spelling** command to find and edit any **misspelled words**; use the **Document Inspector** to find and delete any **hidden data or personal information** that is stored in the workbook, such as hidden comments, invisible objects, and file paths; and consider your **Protect Workbook** options, designed to keep other users from making unwanted changes to your workbook.

To Check Spelling:

1. Select the cells you want to spell check.
2. Click on the **Spelling** command from the Review tab.



Selecting the Spelling command

3. The **Spelling** dialog box will open. From the Spelling dialog box, you can review and edit any misspelled words.

You can also check the spelling of every cell in an active worksheet by selecting any empty cell in the worksheet and then clicking on the **Spelling** command.

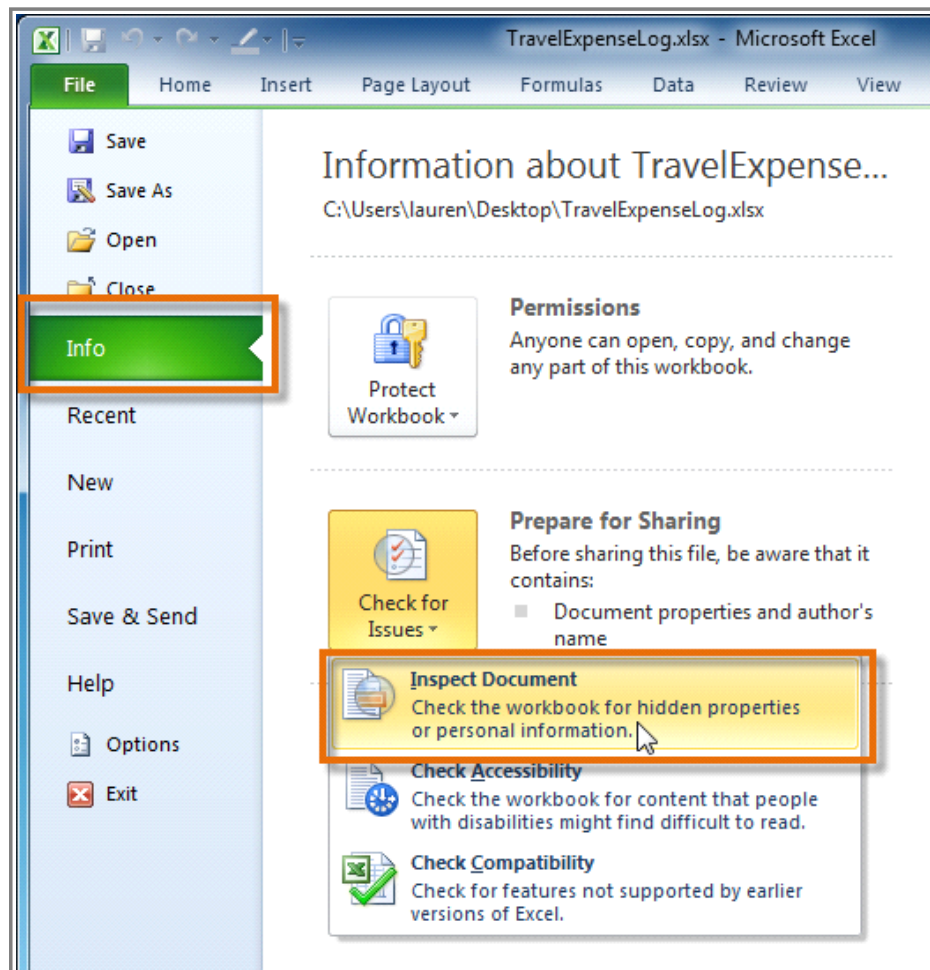
Ignoring Spelling "Errors"

There are times when Excel will say something is an error when it is not. This often happens with people's names, which may not be in the dictionary. Even if Excel says that something is an error, you can choose not to change it. There are three options you can choose from:

- ▮ **Ignore Once:** This will skip the word without changing it.
- ▮ **Ignore All:** This will skip the word without changing it, and it will also skip all other instances of this word in the worksheet.
- ▮ **Add to Dictionary:** This adds the word to the dictionary so that it will never come up as an error again. Make sure that the word is spelled correctly before choosing this option.

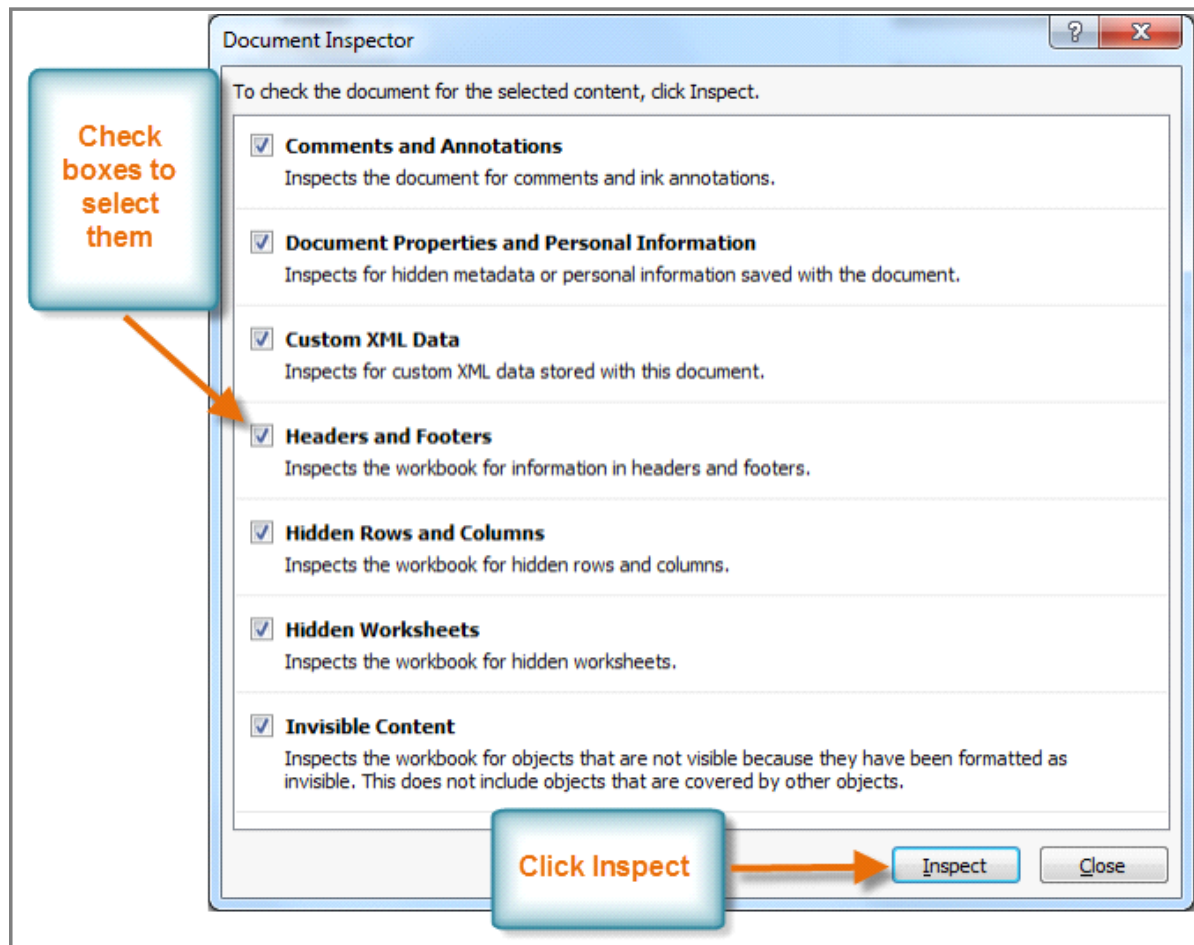
To Use the Document Inspector:

1. In **Backstage view**, click **Info**.
2. Click on the **Check for Issues** button. A drop-down menu will appear.
3. Select **Inspect Document**. A dialog box will appear.



Selecting the Inspect Document command

4. Check the boxes beside the content you want to inspect. To unselect a box, simply click it again and the check mark will disappear.
5. Click **Inspect**.



Document Inspector dialog box

6. After the Document Inspector finishes, a new dialog box will appear where you can **review the inspection results**. Click the **Remove All** command beside any information you want to remove.

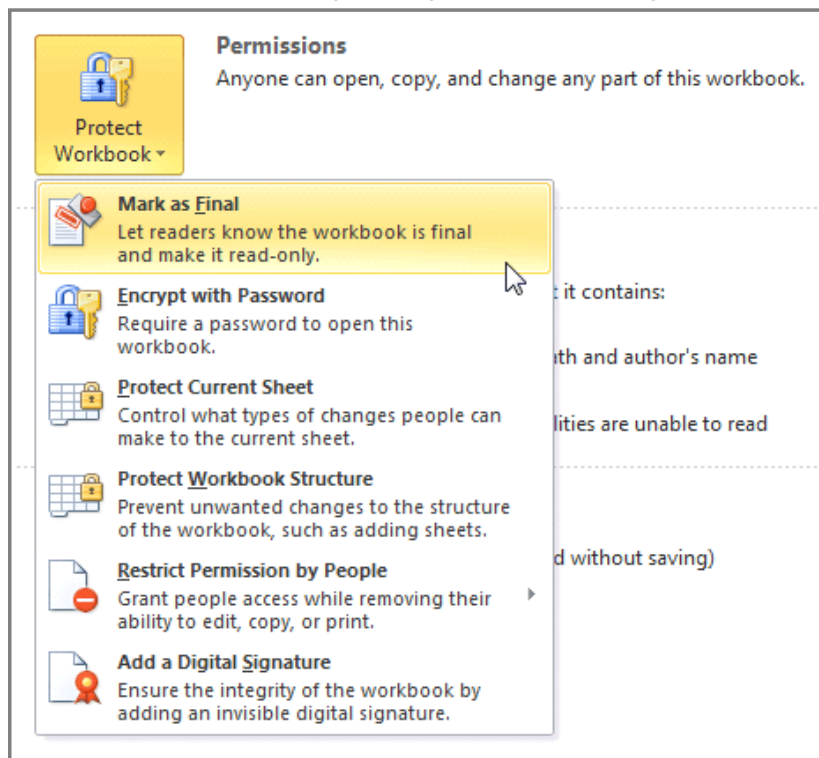
It is a good idea to save an additional copy of your workbook before you use the Document Inspector to remove information, because some changes cannot be undone.

Protecting Your Workbook

By default, anyone with access to your workbook will be able to open, copy, and change any part of it unless you protect it. There are many ways you can protect your workbook depending on your needs. For example, you can mark your workbook as final, set it up with a password, put restrictions on who can make changes, or make it so that only certain cells or features of the workbook are changeable.

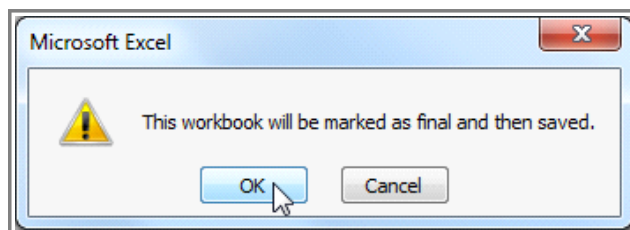
To Protect Your Workbook:

1. Click the **File** tab to access the **Backstage view**.
2. From the **Info** pane, click the **Protect Workbook** command.
3. Choose the **option** that best suits your needs. In this example, we will select Mark as Final. Marking your workbook as final is a way to discourage others from making any changes to the workbook. It will alert whoever opens it that typing, editing, and proofreading commands are unavailable.



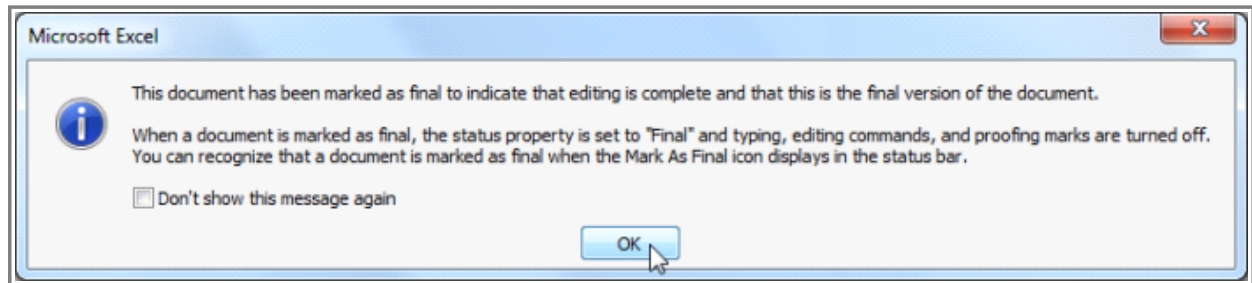
Selecting a Protect Workbook option

4. Click **OK**.



Marking the workbook as final

5. Another dialog box will appear. Click **OK** to confirm.



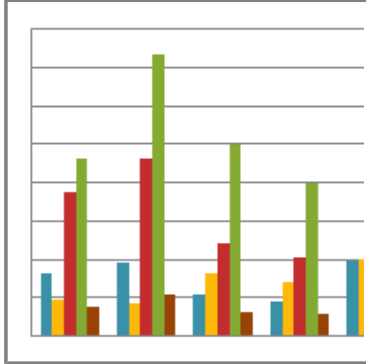
Selecting the Inspect Document command



Excel 2010

Working with Charts

Introduction



A **chart** is a tool you can use in Excel to **communicate your data graphically**. Charts allow your audience to see the **meaning behind the numbers**, and they make showing **comparisons** and **trends** a lot easier. In this lesson, you will learn how to **insert** charts and **modify** them so that they communicate information effectively.

Charts

Excel workbooks can contain **a lot of data**, and that data can often be difficult to interpret. For example, where are the highest and lowest values? Are the numbers increasing or decreasing?

The answers to questions like these can become much clearer when the data is represented as a **chart**. Excel has many different types of charts, so you can choose one that most effectively represents the data.

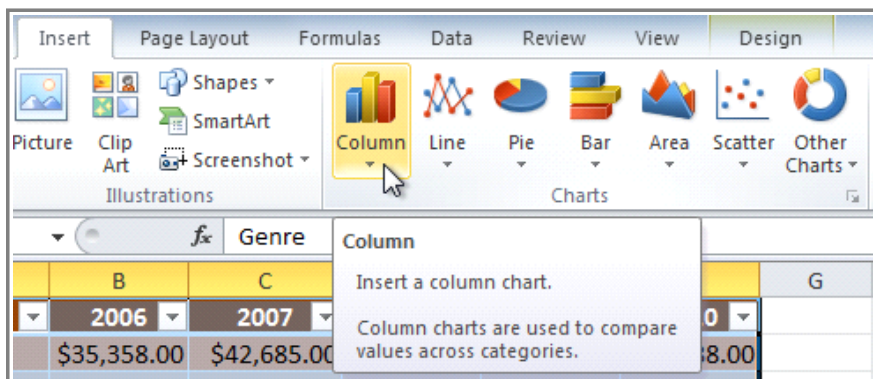
To Create a Chart:

1. Select the **cells** that you want to chart, including the **column titles** and the **row labels**. These cells will be the **source data** for the chart.

	A	B	C	D	E	F
1	Genre	2006	2007	2008	2009	2010
2	Young Adult	\$35,358.00	\$42,685.00	\$20,893.00	\$16,065.00	\$21,388.00
3	Classics	\$18,580.00	\$49,225.00	\$16,326.00	\$10,017.00	\$26,134.00
4	Mystery	\$78,970.00	\$82,262.00	\$48,640.00	\$49,985.00	\$73,428.00
5	Romance	\$94,236.00	\$131,390.00	\$79,022.00	\$71,009.00	\$81,474.00
6	Sci-Fi & Fantasy	\$16,730.00	\$19,730.00	\$12,109.00	\$11,355.00	\$17,686.00
7						

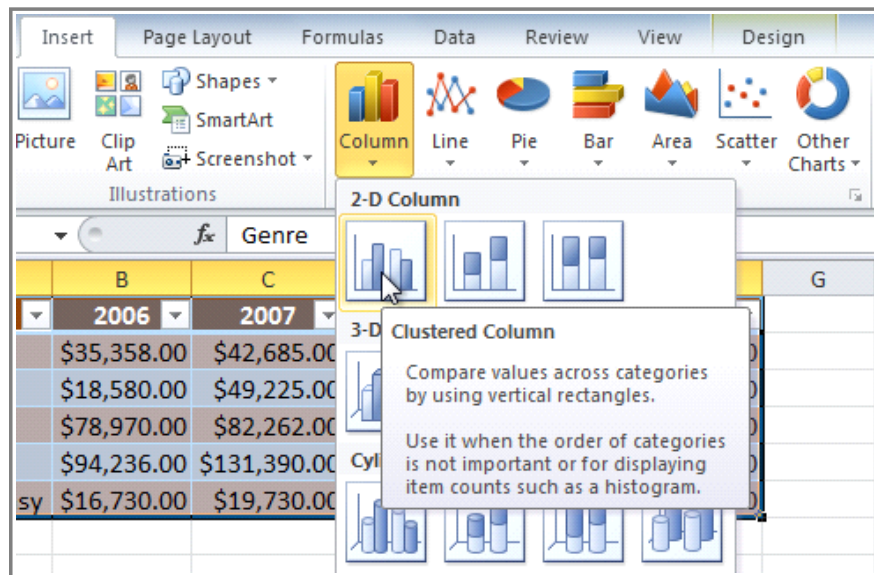
Selecting cells

2. Click the **Insert** tab.
3. In the **Charts** group, select the desired **chart category** (Column, for example).



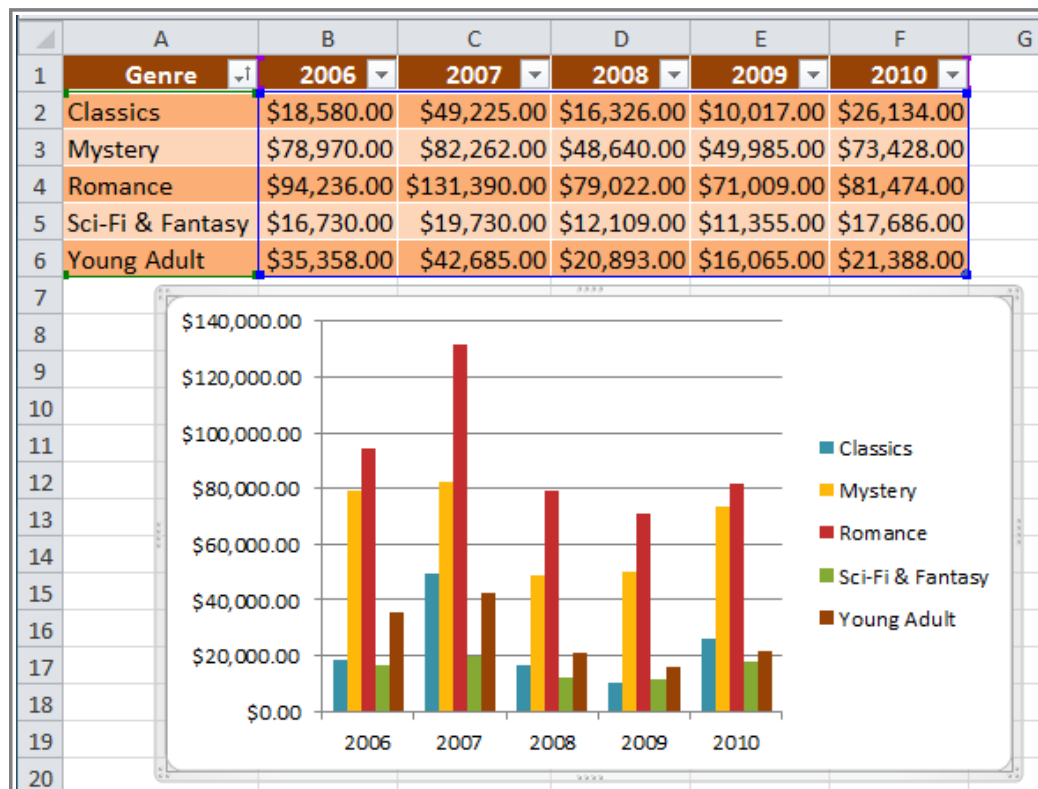
Selecting the Column category

4. Select the desired **chart type** from the drop-down menu (Clustered Column, for example).



Selecting a chart type

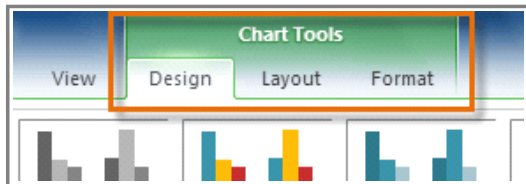
5. The chart will appear in the worksheet.



The new chart

Chart Tools

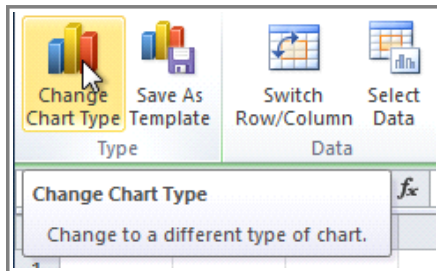
Once you insert a chart, a set of **Chart Tools**, arranged into three tabs, will appear on the Ribbon. These are only visible when the chart is selected. You can use these three tabs to **modify** your chart.



The Design, Layout and Format tabs

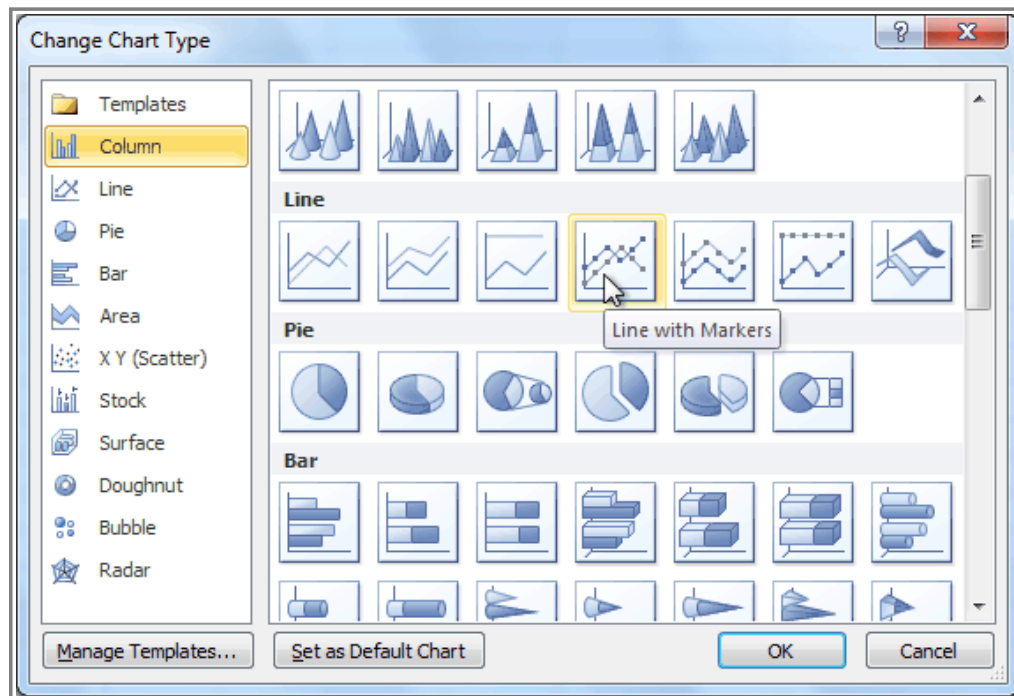
To Change the Chart Type:

1. From the **Design** tab, click the **Change Chart Type** command. A dialog box appears.



The Change Chart Type command

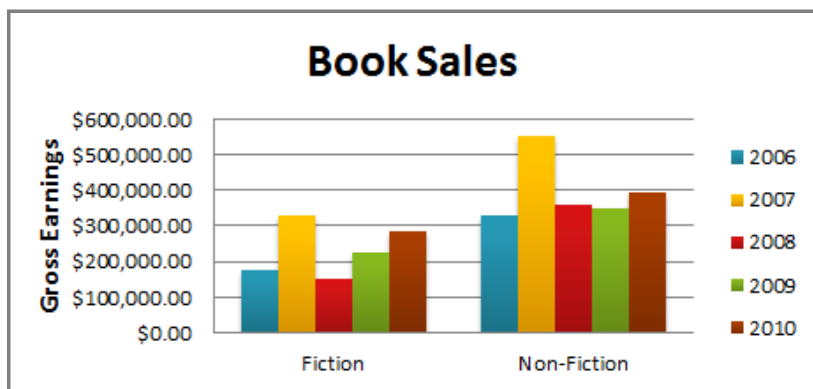
2. Select the desired **chart type** and click **OK**.



Selecting a chart type

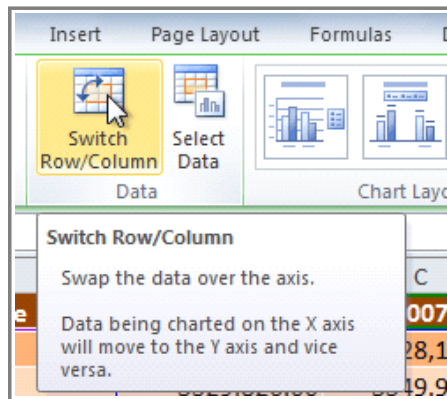
To Switch Row and Column Data:

Sometimes when you create a chart, the data may not be grouped the way you want it to be. In the **clustered column chart** below, the Book Sales statistics are grouped **by Fiction/Non-Fiction**, with a column for each year. However, you can also **switch the row and column data** so that the chart will group the statistics **by year**, with columns for Fiction and Non-Fiction. In both cases, the chart contains the **same data**; it's just organized differently.



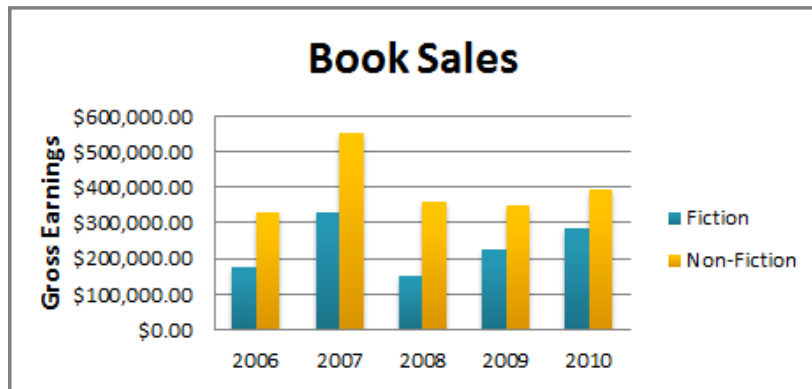
Book Sales, grouped by Fiction/Non-Fiction

1. Select the **chart**.
2. From the **Design** tab, select the **Switch Row/Column** command.



The Switch Row/Column command

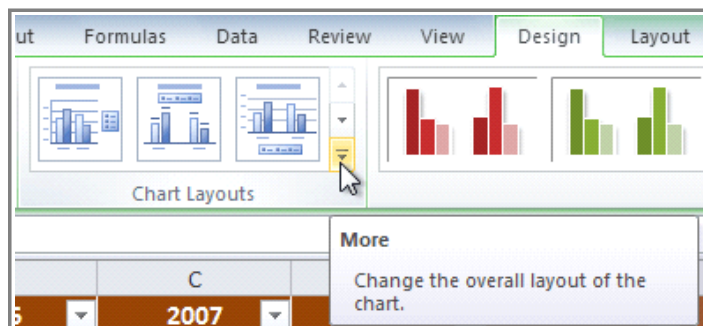
3. The chart will then readjust.



Book sales, grouped by year

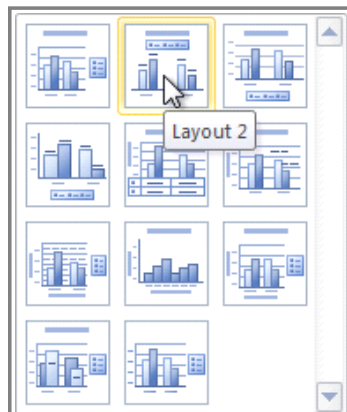
To Change the Chart Layout:

1. Select the **Design** tab.
2. Click the **More** drop-down arrow in the **Chart Layouts** group to see all of the available layouts.



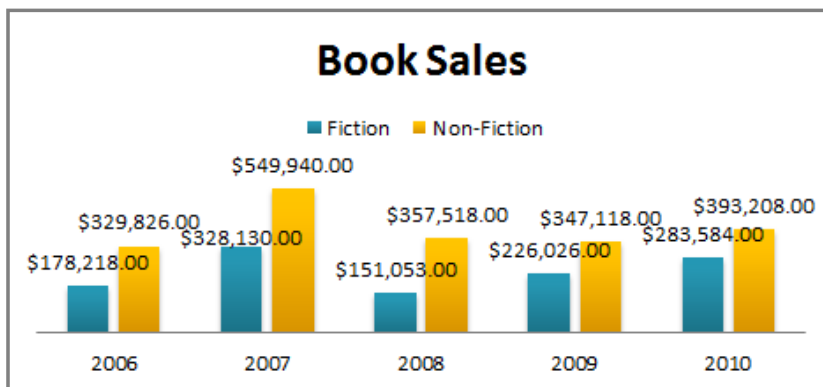
Viewing all of the chart layouts

3. Select the desired layout.



Selecting a chart layout

4. The chart will update to reflect the new layout.

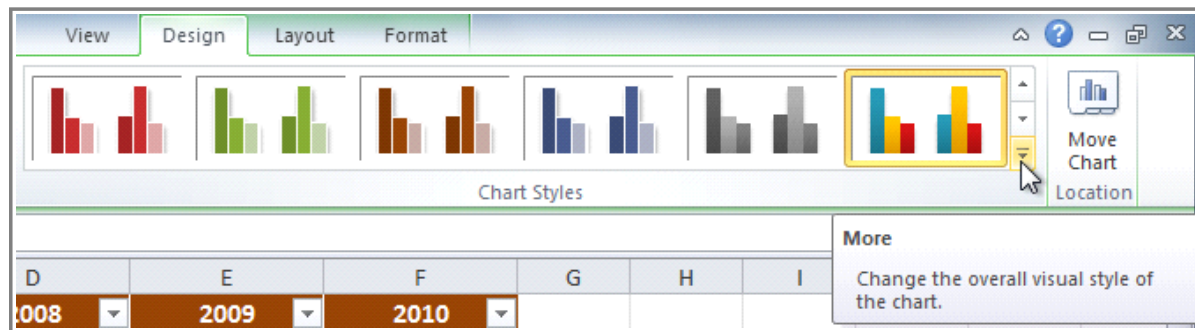


The updated layout

Some layouts include **chart titles**, **axes**, or **legend labels**. To change them, just place the **insertion point** in the text and begin typing.

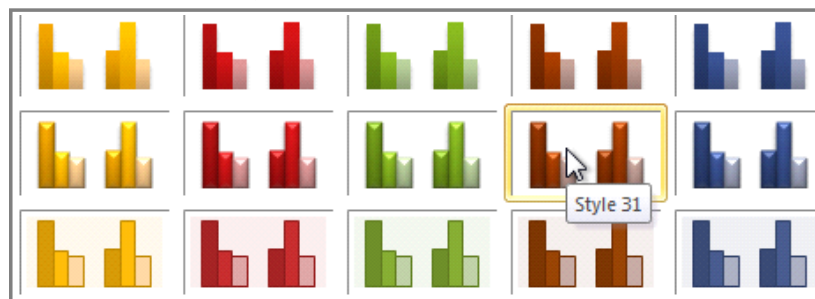
To Change the Chart Style:

1. Select the **Design** tab.
2. Click the **More** drop-down arrow in the **Chart Styles** group to see all of the available styles.



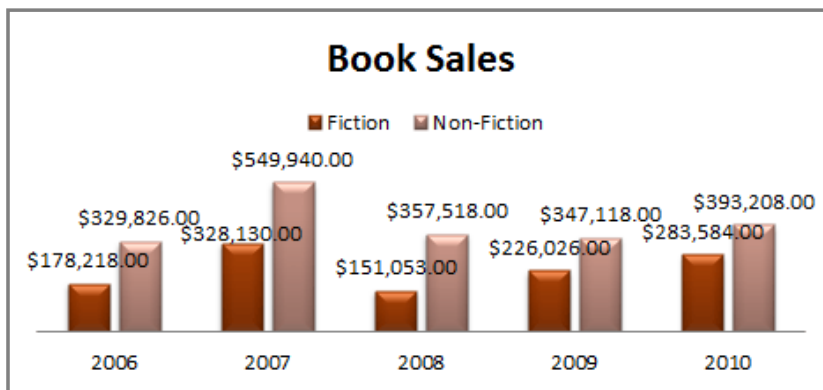
Viewing all of the Chart Styles

3. Select the desired style.



Selecting a chart style

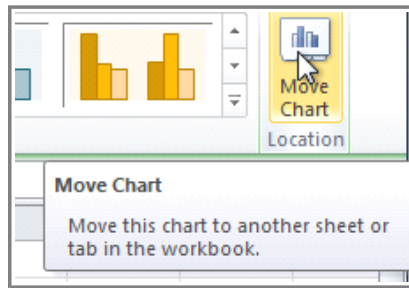
4. The chart will update to reflect the new style.



The updated chart

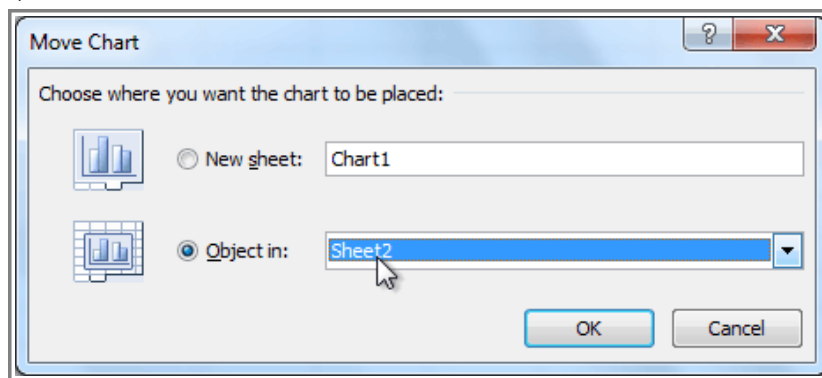
To Move the Chart to a Different Worksheet:

1. Select the **Design** tab.
2. Click the **Move Chart** command. A dialog box appears. The current location of the chart is selected.



The Move Chart command

3. Select the desired location for the chart (i.e., choose an existing worksheet, or select New Sheet and name it).



Selecting a different worksheet for the chart

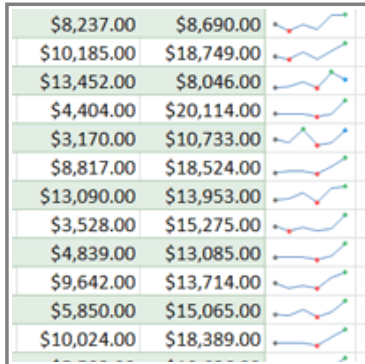
4. Click **OK**. The chart will appear in the new location.



Excel 2010

Working with Sparklines

Introduction



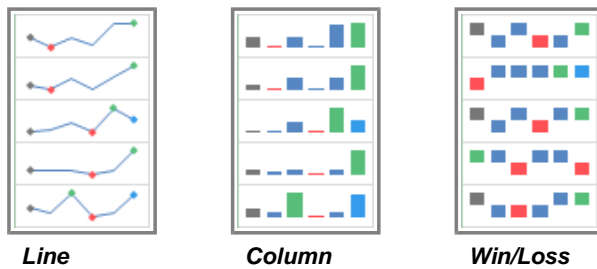
Sparklines are miniature charts that fit into a **single cell**. Since they're so compact, you can place a large number of them in your worksheets. For example, you could place one sparkline on each row to show trends within that row. In this lesson, you will learn how to **insert** sparklines and change their **type** and **appearance**.

Creating Sparklines

Sparklines were introduced in Excel 2010 to be a convenient alternative to charts. Unlike a traditional chart, a sparkline is placed **inside a cell**, allowing you to easily create a large number of sparklines (for example, one on each **row**).

Types of Sparklines

There are three different types of sparklines: **Line**, **Column**, and **Win/Loss**. **Line** and **Column** work the same as line and column **charts**. **Win/Loss** is similar to **Column**, except it only shows whether each value is **positive** or **negative**, instead of how **high** or **low** the values are. All three types can display **markers** at important points, such as the **highest** and **lowest** points, to make them easier to read.



Why Use Sparklines?

Sparklines are basically **charts**, so why would you want to use sparklines instead of charts? Sparklines have certain advantages that make them more convenient in many cases. Imagine you have 1000 rows of data. If you place a sparkline on each row, it will be right next to its **source data**, making it easy to see the **relationships** between the numbers and the sparkline. If you used a traditional chart, it would need to have 1000 data series in order to represent all of the rows, and you would probably need to do a lot of **scrolling** to find the relevant data in the worksheet.

Sparklines are ideal for situations where you just want to make the data **clearer** and more **eye-catching**, and where you don't need all of the features of a full chart. On the other hand, charts are ideal for situations where you want to represent the data in **greater detail**, and they are often better for **comparing** different **data series**.

To Create Sparklines:

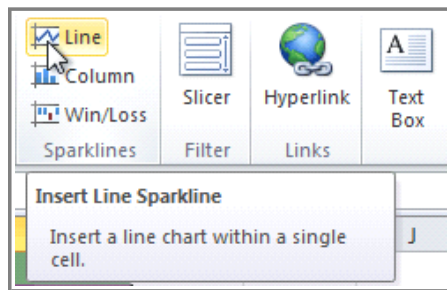
Generally, you will have one sparkline for each row, but you can create as many as you want in any location you want. Just like with **formulas** it's usually easiest to create a **single sparkline** and then use the **fill handle** to automatically create the sparklines for the remaining rows.

1. Select the **cells** that you will need for the **first sparkline**. In this example, we are creating a sparkline for Kathy Albertson, so we will select her sales data.

A	B	C	D	E	F	G	H
Salesperson	May	June	July	Aug.	Sept.	Oct.	
Albertson, Kathy	\$3,947.00	\$557.00	\$3,863.00	\$1,117.00	\$8,237.00	\$8,690.00	
Allenson, Carol	\$4,411.00	\$1,042.00	\$9,355.00	\$1,100.00	\$10,185.00	\$18,749.00	
Altman, Zoey	\$2,521.00	\$3,072.00	\$6,702.00	\$2,116.00	\$13,452.00	\$8,046.00	

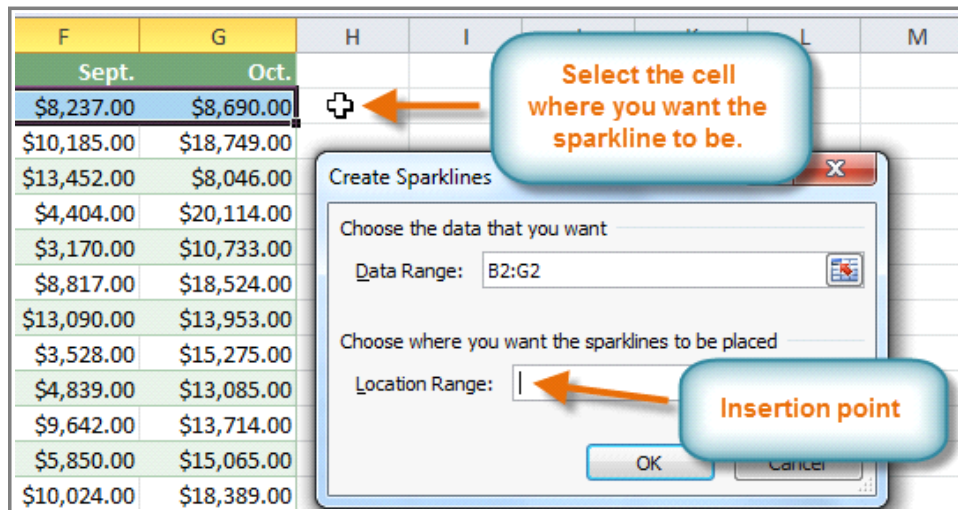
Selecting cells

2. Click the **Insert** tab.
3. In the **Sparklines** group, select **Line**. A dialog box will appear.



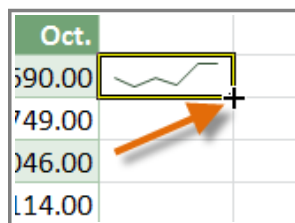
The Line command

4. Make sure the **insertion point** is next to **Location Range**.
5. Click the **cell** where you want the sparkline to be. In this example, we'll select the cell to the right of the selected cells.



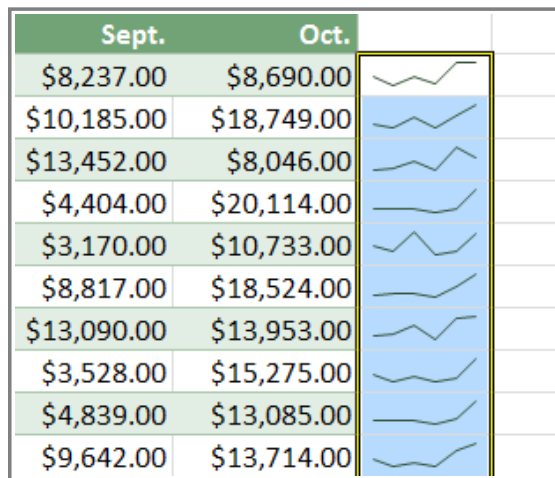
Choosing a location for the sparkline

6. Click **OK**. The sparkline will appear in the document.
7. Click and drag the **fill handle** downward.



Dragging the fill handle

8. Sparklines will be created for the remaining rows.



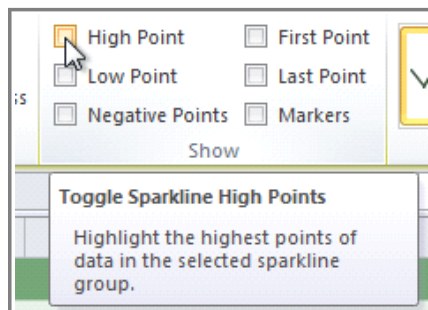
The finished sparklines

Changing the Appearance of Your Sparklines

To Show Points on the Sparkline:

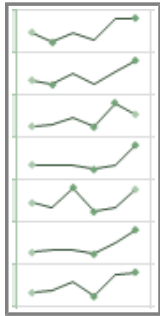
Certain points on the sparkline can be emphasized with **markers**, or dots, making the sparkline more readable. For example, in a line with a lot of **ups and downs**, it may be difficult to tell which ones are the highest and lowest points, but if you show the **High Point** and **Low Point**, it will be easy to identify them.

1. Select the **sparklines** that you want to change. If they are **grouped**, you only need to select one of them.
2. Locate the **Show** group in the **Design** tab.
3. Hover over the different **checkboxes** to see a description of each one.



Hovering over the High Point checkbox

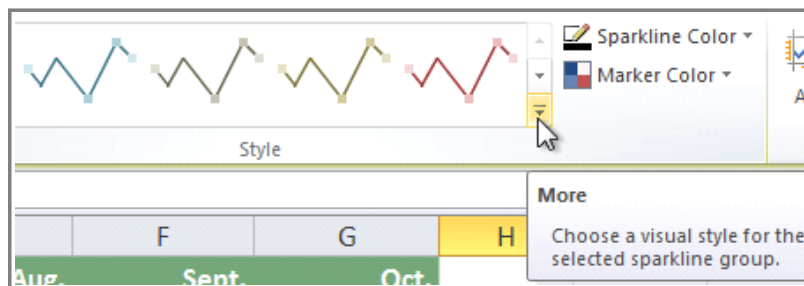
4. Check each option that you want to show. The sparklines will update to show the selected options.



The updated sparklines

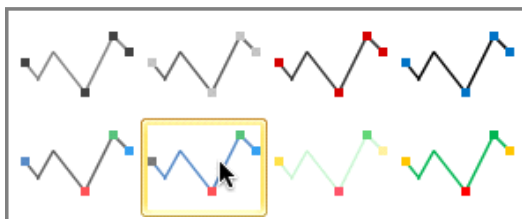
To Change the Style:

1. Select the **sparklines** that you want to change.
2. Locate the **Style** group in the **Design** tab.
3. Click the **More** drop-down arrow to show all of the available styles.



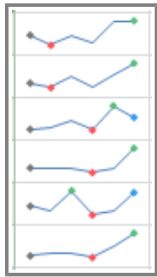
Viewing all of the available styles

4. Select the desired **style**.



Selecting a sparkline style

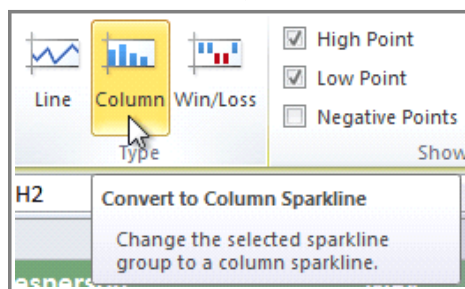
5. The sparklines will update to show the selected style.



*The new
sparkline
style*

To Change the Sparkline Type:

1. Select the **sparklines** that you want to change.
2. Locate the **Type** group in the **Design** tab.
3. Select the desired **type** (Column, for example).



*Converting the sparkline type to
Column*

4. The sparkline will update to reflect the new type.



*The
converted
sparklines*

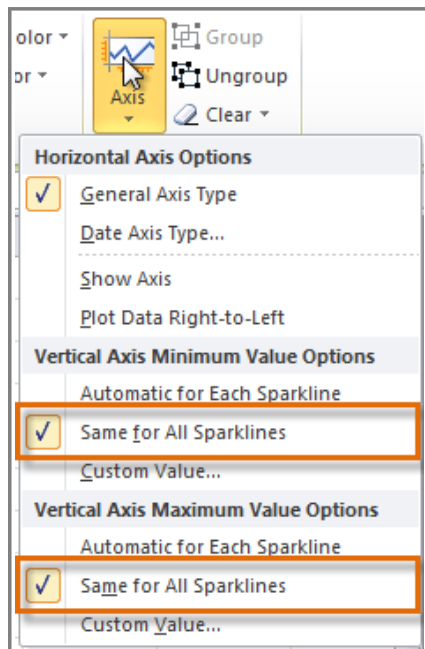
Some sparkline types will be better or worse for certain types of data. For example, **Win/Loss** is best suited for data where there may be **positive** and **negative** values (such as **net earnings**).

Changing the Display Range

By default, each sparkline is scaled to fit the maximum and minimum values of **its own data**. This allows it to fill the entire cell no matter how high or low the values are. However, it has a **downside**: if you are trying to compare several sparklines, you won't be able to tell at a glance which ones have higher or lower values. The solution is to make the display range **the same** for all of the sparklines.

To Change the Display Range:

1. Select the **sparklines** that you want to change.
2. In the **Design** tab, click the **Axis** command. A drop-down menu will appear.
3. Under **Vertical Axis Minimum Value Options** and **Vertical Axis Maximum Value Options**, select **Same for All Sparklines**.



Changing the range of the sparklines

4. The sparklines will update to reflect the new range.



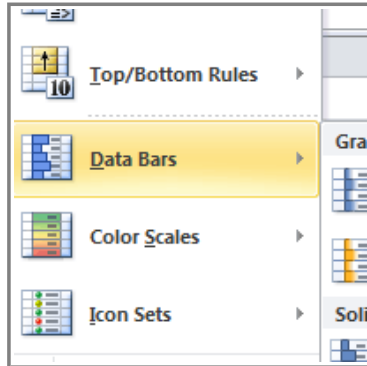
The updated sparklines



Excel 2010

Using Conditional Formatting

Introduction



Imagine you have a spreadsheet with thousands of rows of data. It would be extremely difficult to see patterns and trends just from examining the raw data. Excel gives us several tools that will make this task easier. One of these tools is called **conditional formatting**. With conditional formatting, you can apply formatting to **one or more cells** based on the value of the cell. You can highlight **interesting** or **unusual** cell values, and visualize the data using formatting such as **colors**, **icons**, and **data bars**.

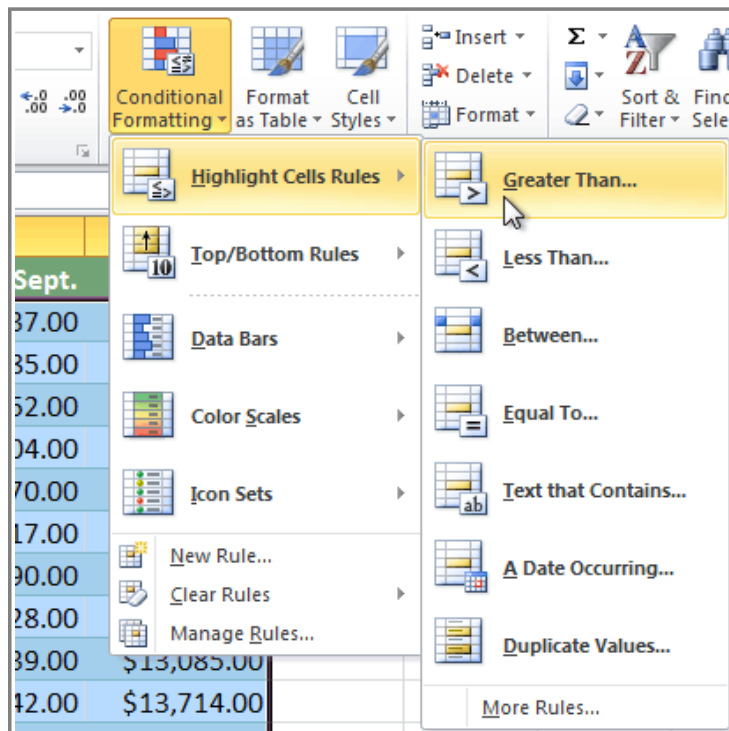
In this lesson, you will learn how to **apply**, **modify**, and **remove** conditional formatting rules.

Conditional Formatting

Conditional formatting applies one or more **rules** to any cells that you want. An example of a rule might be "**If the value is greater than 5,000, color the cell yellow.**" By applying this rule to the cells in a worksheet, you'll be able to see at a glance which cells are over 5,000. There are also rules that can mark the **top 10 items**, all cells that are **below the average**, cells that are within a certain **date range**, and many more.

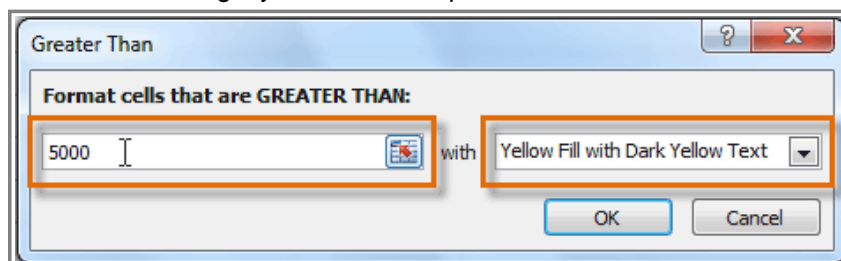
To Create a Conditional Formatting Rule:

1. Select the **cells** that you want to add the formatting to.
2. In the **Home** tab, click the **Conditional Formatting** command. A drop-down menu will appear.
3. Select **Highlight Cells Rules** or **Top/Bottom Rules**. We will choose Highlight Cells Rules for this example. A menu will appear with several **rules**.
4. Select the desired rule (Greater Than, for example).



Selecting the Greater Than rule

5. From the dialog box, enter a **value** in the space provided, if applicable. In this example, we want to format cells that are greater than \$5,000, so we'll enter 5000 as our value. If you want, you can enter a **cell reference** instead of a number.
6. Select a formatting style from the drop-down menu.



Entering a value and formatting style

7. The formatting will be applied to the selected cells.

\$9,355.00	\$1,100.00	\$10,185.00	\$18,749.00
\$6,702.00	\$2,116.00	\$13,452.00	\$8,046.00
\$4,415.00	\$1,089.00	\$4,404.00	\$20,114.00
\$11,601.00	\$1,122.00	\$3,170.00	\$10,733.00
\$3,726.00	\$1,135.00	\$8,817.00	\$18,524.00
\$9,007.00	\$2,113.00	\$13,090.00	\$13,953.00
\$4,505.00	\$1,024.00	\$3,528.00	\$15,275.00
\$3,973.00	\$1,716.00	\$4,839.00	\$13,085.00

The formatted cells

If you want, you can apply more than one rule to your cells.

Conditional Formatting Presets

Excel has a number of **presets** that you can use to quickly apply conditional formatting to your cells. They are grouped into three categories:

✦ **Data Bars** are horizontal bars added to each cell, much like a **bar graph**.

\$3,863.00	\$1,117.00	\$8,237.00	\$8,690.00
\$9,355.00	\$1,100.00	\$10,185.00	\$18,749.00
\$6,702.00	\$2,116.00	\$13,452.00	\$8,046.00
\$4,415.00	\$1,089.00	\$4,404.00	\$20,114.00

Data Bars

✦ **Color Scales** change the color of each cell based on its value. Each color scale uses a **two or three color gradient**. For example, in the **Green - Yellow - Red** color scale, the **highest** values are green, **average** values are yellow, and the **lowest** values are red.

\$3,863.00	\$1,117.00	\$8,237.00	\$8,690.00
\$9,355.00	\$1,100.00	\$10,185.00	\$18,749.00
\$6,702.00	\$2,116.00	\$13,452.00	\$8,046.00
\$4,415.00	\$1,089.00	\$4,404.00	\$20,114.00

Color Scales

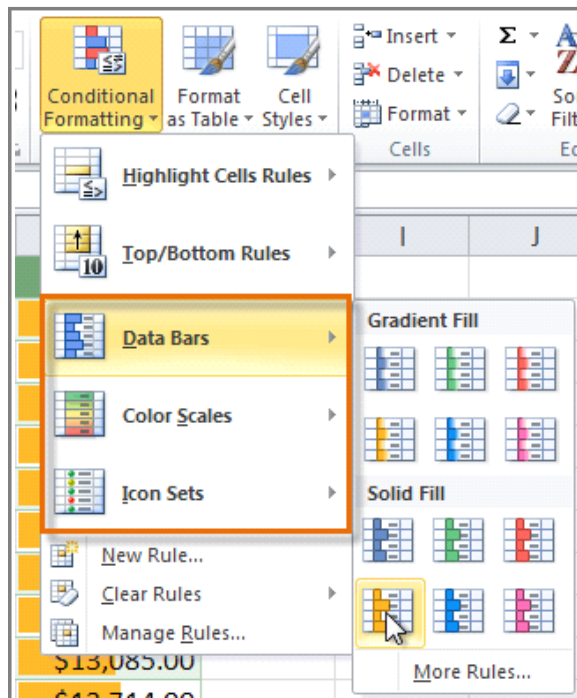
✦ **Icon Sets** add a specific icon to each cell based on its value.

↓ \$3,863.00	↓ \$1,117.00	↗ \$8,237.00	↘ \$8,690.00
↗ \$9,355.00	↓ \$1,100.00	↗ \$10,185.00	↑ \$18,749.00
↗ \$6,702.00	↓ \$2,116.00	↗ \$13,452.00	↘ \$8,046.00
↓ \$4,415.00	↓ \$1,089.00	↓ \$4,404.00	↑ \$20,114.00

Icon Sets

To Use Preset Conditional Formatting:

1. Select the cells you want to add the formatting to.
2. In the **Home** tab, click the **Conditional Formatting** command. A drop-down menu will appear.
3. Select **Data Bars**, **Color Scales** or **Icon Sets** (Data Bars, for example). Then, select the desired preset.



Selecting a formatting preset

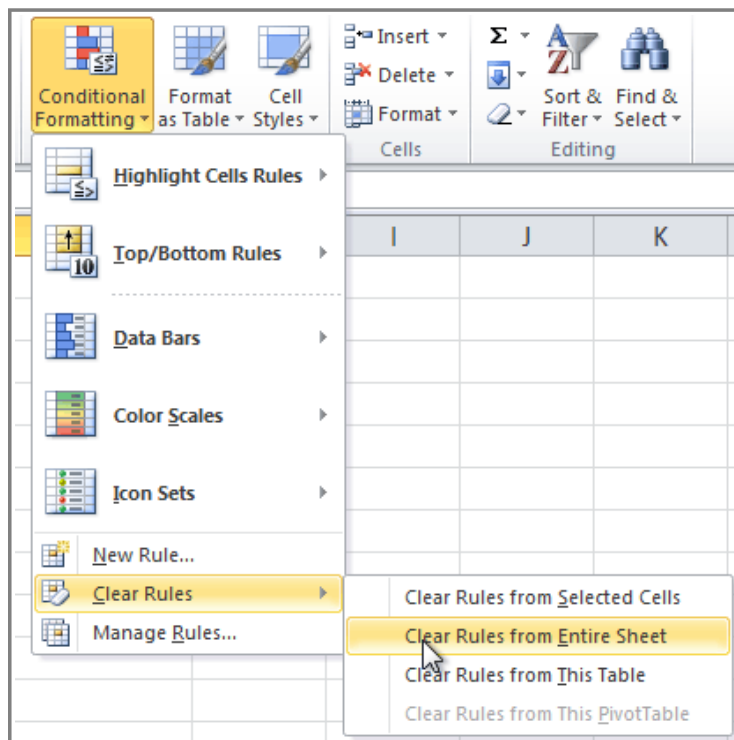
4. The conditional formatting will be applied to the selected cells.

\$3,863.00	\$1,117.00	\$8,237.00	\$8,690.00
\$9,355.00	\$1,100.00	\$10,185.00	\$18,749.00
\$6,702.00	\$2,116.00	\$13,452.00	\$8,046.00
\$4,415.00	\$1,089.00	\$4,404.00	\$20,114.00

The finished Data Bars

To Remove Conditional Formatting Rules:

1. Select the cells that have conditional formatting.
2. In the **Home** tab, click the **Conditional Formatting** command. A drop-down menu will appear.
3. Select **Clear Rules**.
4. A menu will appear. You can choose to clear rules from the **Selected Cells**, **Entire Sheet**, **This Table**, or **This PivotTable**. In this example, we will clear rules from the entire sheet.

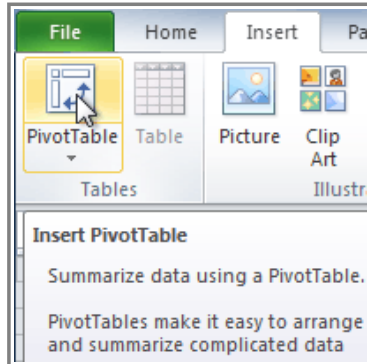


Clearing Rules

You can edit or delete **individual** rules by clicking on the **Conditional Formatting** command and selecting **Manage Rules**. This is especially useful if you have applied **multiple** rules to the cells.



Creating PivotTables



PivotTable reports (or, simply **PivotTables**) make the data in your worksheets much more manageable by **summarizing** the data and allowing you to **manipulate** it in different ways. PivotTables can be an indispensable tool when used with large, complex spreadsheets, but they can be used with smaller spreadsheets as well.

In this lesson, you will learn the basics of **creating** and **manipulating** PivotTables.

PivotTables

When you have a lot of data, it can sometimes be difficult to analyze all of it. A PivotTable **summarizes** the data, making it easier to manage. Best of all, you can quickly and easily change the PivotTable to see the data in a different way, making this an extremely powerful tool.

Using PivotTables to Answer Questions

The example below contains sales statistics for a fictional company. There is a **row** for each order, and it includes the **order amount**, the name of the **salesperson** who made the sale, the **month**, the **sales region**, and the customer's **account number**.

Salesperson	Region	Account	Order Amount	Month
Albertson, Kathy	East	29386	\$925.00	January
Albertson, Kathy	East	74830	\$875.00	February
Albertson, Kathy	East	90099	\$500.00	February
Albertson, Kathy	East	74830	\$350.00	March
Brennan, Michael	West	82853	\$400.00	January
Brennan, Michael	West	72949	\$850.00	January
Brennan, Michael	West	90044	\$1,500.00	January
Brennan, Michael	West	82853	\$550.00	February
Brennan, Michael	West	72949	\$400.00	March
Davis, William	South	55223	\$235.00	February
Davis, William	South	10354	\$850.00	January
Davis, William	South	50192	\$600.00	March
Davis, William	South	27589	\$250.00	January
Dumlao, Richard	West	67275	\$400.00	January
Dumlao, Richard	West	41828	\$965.00	February
Dumlao, Richard	West	87543	\$125.00	March
Flores, Tia	South	97446	\$1,500.00	March
Flores, Tia	South	41400	\$305.00	January

Company Sales Statistics

Suppose we wanted to answer the question, "**What is the amount sold by each salesperson?**" This could be time-consuming, as each salesperson appears on multiple rows, and we would need to add up all of the order amounts for each salesperson. Of course, we could use the **Subtotal** feature to add them, but we would still have a lot of data to sift through.

Luckily, a **PivotTable** can instantly do all of the math for us and summarize the data in a way that's not only easy to read, but easy to manipulate. When we're done, the PivotTable will look something like this:

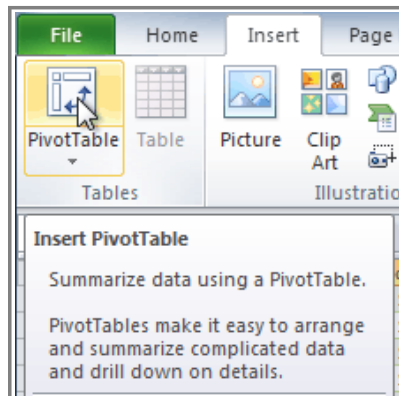
Row Labels	Sum of Order Amount
Albertson, Kathy	\$2,650.00
Brennan, Michael	\$3,700.00
Davis, William	\$1,935.00
Dumlao, Richard	\$1,490.00
Flores, Tia	\$4,565.00
Post, Melissa	\$1,690.00
Thompson, Shannon	\$3,160.00
Walters, Chris	\$4,375.00
Grand Total	\$23,565.00

A finished PivotTable

As you can see, the PivotTable is much easier to read. It only takes a **couple of steps** to create one, and once you create it you'll be able to take advantage of the PivotTable's powerful features.

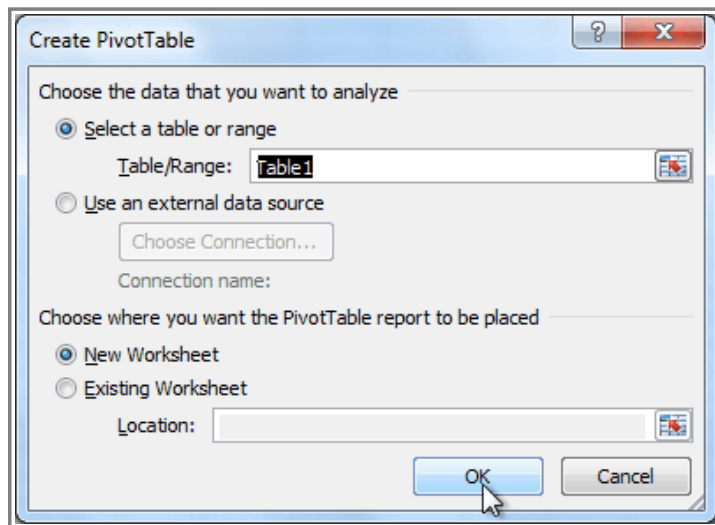
To Create a PivotTable:

1. Select the **table** or **cells** (including column headers) containing the data you want to use.
2. From the **Insert** tab, click the **PivotTable** command.



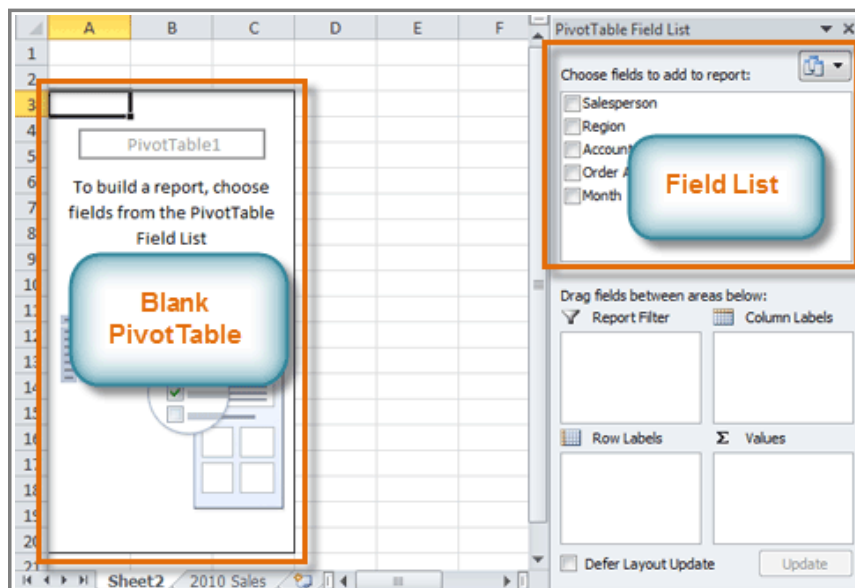
The PivotTable command

3. The **Create PivotTable** dialog box will appear. Make sure the settings are correct, and then click **OK**.



The Create PivotTable dialog box

4. A blank **PivotTable** will appear on the left, and the **Field List** will appear on the right



The Blank PivotTable and Field List

To Add Fields to the PivotTable:

Now, you'll need to decide which **fields** to add to the PivotTable. Each field is simply a **column header** from the source data. It may be helpful to recall the **question** that you are trying to answer. In this example, we want to know the total **amount** sold by each **salesperson**, so we'll just need the **Order Amount** and **Salesperson** fields.

1. In the **Field List**, place a checkmark next to each field you want to add.

- The selected fields will be added to one of the four **Areas** below the Field List. In this example, the **Salesperson** field is added to the **Row Labels** area, and the **Order Amount** is added to the **Values** area. If a field is not in the desired area, you can drag it to a different one.
- The PivotTable now shows the **amount sold** by each **salesperson**.

Row Labels	Sum of Order Amount
Albertson, Kathy	2650
Brennan, Michael	3700
Davis, William	1935
Dumlao, Richard	1490
Flores, Tia	4565
Post, Melissa	1690
Thompson, Shannon	3160
Walters, Chris	4375
Grand Total	23565

Amount sold by each salesperson

PivotTable Field List

Choose fields to add to report:

- ☒ Salesperson
- ☐ Region
- ☐ Account
- ☒ Order Amount
- ☐ Month

Drag fields between areas below:

Report Filter: [Empty]

Column Labels: [Empty]

Row Labels: Salesperson

Values: Sum of Order...

Defer Layout Update: ☐ Update

Adding fields to the PivotTable

Just like with normal spreadsheet data, you can sort the data in a PivotTable using the **Sort & Filter** command in the **Home** tab. You can also apply any type of formatting that you want. For example, you may want to change the **Number Format** to **Currency**. However, be aware that some types of formatting may disappear when you modify the PivotTable.

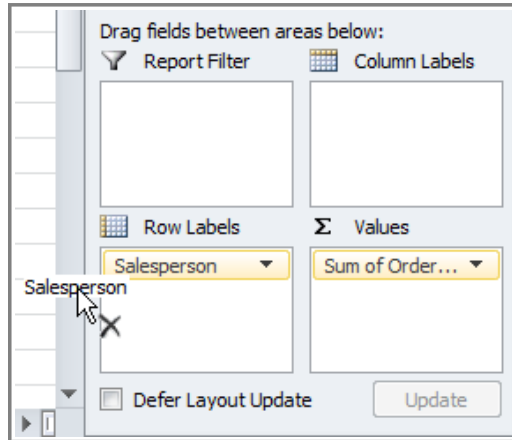
Pivoting Data

One of the best things about PivotTables is that they let you "pivot" the data in order to look at it in a different way. This allows you to answer **multiple questions** and even **experiment** with the data to learn new things about it.

In our example, we used the PivotTable to answer the question "What is the total amount sold by each salesperson?" But now we'd like to answer a new question, such as "What is the total amount sold in **each month**?" We can do this by simply changing the **Row Labels**.

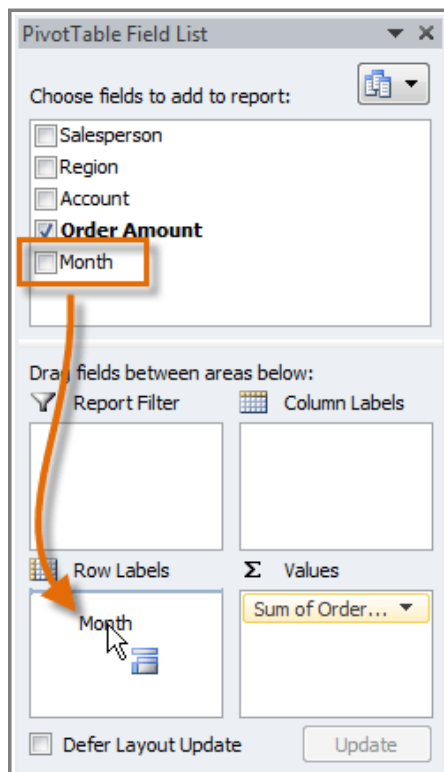
To Change the Row Labels:

1. Drag any existing **fields** out of the **Row Labels** area, and they will disappear.



Dragging a field out of Row Labels

2. Drag a new field from the **Field List** into the **Row Labels** area. In this example, we're using the **Month** field.



Dragging a new field into Row Labels

3. The PivotTable will adjust to show the new data. In this example, it now shows us the total **Order Amount** for each **month**.

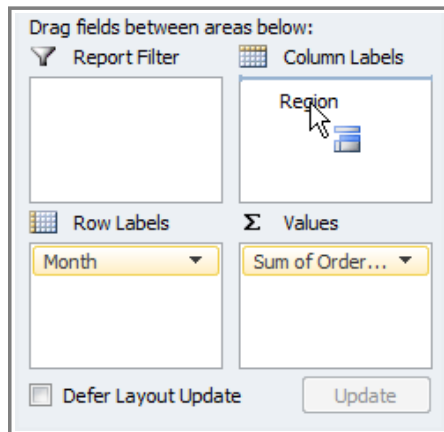
Row Labels	Sum of Order Amount
January	\$9,090.00
February	\$9,160.00
March	\$5,315.00
Grand Total	\$23,565.00

The updated PivotTable

To Add Column Labels:

So far, our PivotTable has only shown **one column** of data at a time. In order to show **multiple columns**, you'll need to add **Column Labels**.

1. Drag a field from the **Field List** into the **Column Labels** area. In this example, we're using the **Region** field.



Adding a field to Column Labels

2. The PivotTable will now have multiple columns. In this example, there is a column for each **region**.

Sum of Order Amount	Column Labels				
Row Labels	East	North	South	West	Grand Total
January	\$1,690.00	\$1,140.00	\$3,110.00	\$3,150.00	\$9,090.00
February	\$1,950.00	\$1,720.00	\$3,975.00	\$1,515.00	\$9,160.00
March	\$700.00	\$300.00	\$3,790.00	\$525.00	\$5,315.00
Grand Total	\$4,340.00	\$3,160.00	\$10,875.00	\$5,190.00	\$23,565.00

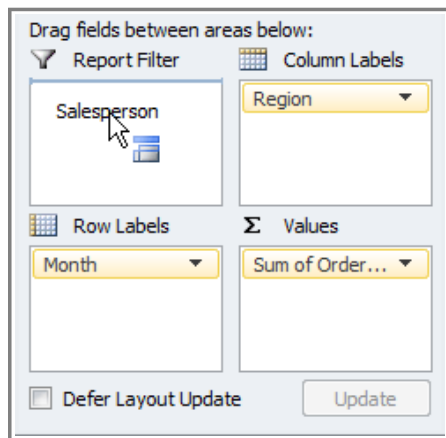
The updated PivotTable

Report Filters

Sometimes you may want focus on just a portion of the data and **filter out** everything else. In our example, we're going to focus on certain salespeople, to see how they affect the total sales.

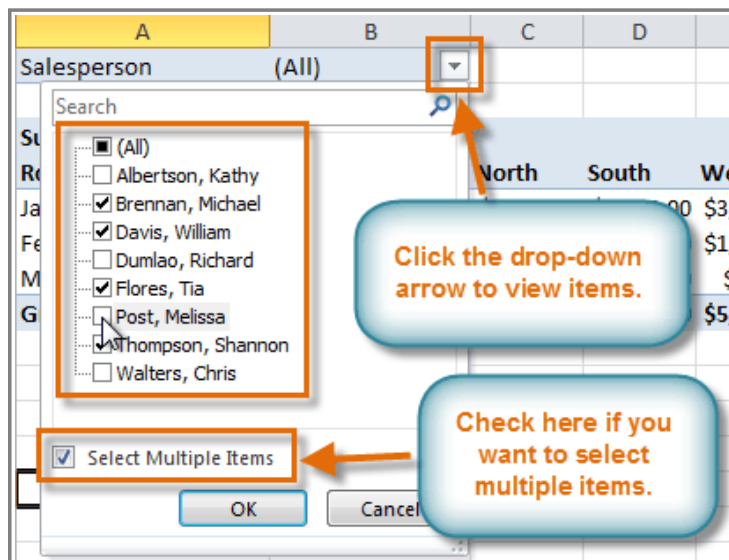
To Add a Report Filter:

1. Drag a field from the **Field List** into the **Report Filter** area. In this example, we're using the **Salesperson** field.



Adding a Report Filter

2. The report filter appears above the PivotTable. Click the **drop-down arrow** on the right side of the filter to view the list of items.
3. Select the item that you wish to view. If you want to select more than one item, place a checkmark next to **Select Multiple Items**. Then click **OK**. In the example below, we are selecting five salespeople.



Using a Report Filter

4. Click **OK**. The PivotTable will adjust to reflect the changes.

Salesperson	(Multiple Items)				
Sum of Order Amount	Column Labels				
Row Labels	East	North	South	West	Grand Total
January	\$765.00	\$1,140.00	\$2,755.00	\$2,750.00	\$7,410.00
February	\$575.00	\$1,720.00	\$1,220.00	\$550.00	\$4,065.00
March	\$350.00	\$300.00	\$2,525.00	\$400.00	\$3,575.00
Grand Total	\$1,690.00	\$3,160.00	\$6,500.00	\$3,700.00	\$15,050.00

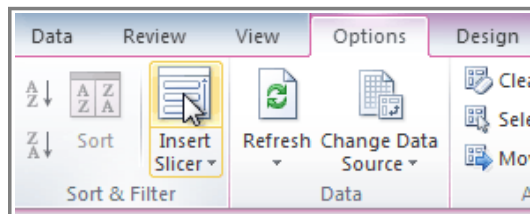
The updated PivotTable

Slicers

Slicers were introduced in Excel 2010 to make filtering data **easier** and **more interactive**. They're basically just **report filters**, but they're more interactive and faster to use, as they let you quickly select items and **instantly see the result**. If you filter your PivotTables a lot, you might want to use slicers instead of report filters.

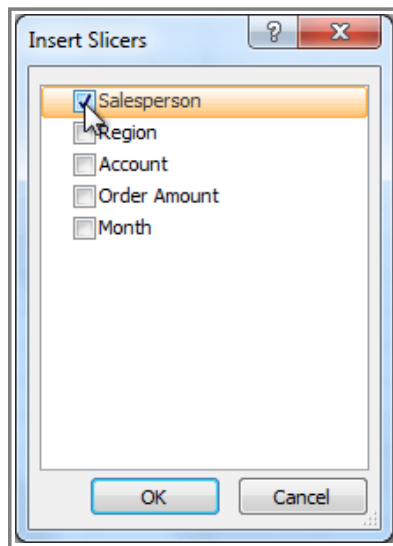
To Add a Slicer:

1. Select any cell in your PivotTable. The **Options** tab will appear on the **Ribbon**.
2. From the **Options** tab, click the **Insert Slicer** command. A dialog box will appear.



The Insert Slicer command

3. Select the desired field. In this example, we will select **Salesperson**. Then click **OK**.



Selecting a field

4. The slicer will appear next to the PivotTable. Each item that is selected will be highlighted in **blue**. In the example below, the slicer contains a list of all of the different salespeople, and **four** of them are currently selected.

Sum of Order Amount				
Column Labels				
Row Labels	South	West	Grand Total	
January	\$2,010.00	\$3,150.00	\$5,160.00	
February	\$3,740.00	\$1,515.00	\$5,255.00	
March	\$3,190.00	\$525.00	\$3,715.00	
Grand Total	\$8,940.00	\$5,190.00	\$14,130.00	

A slicer with four selected items

Using the Slicer:

Just like with **report filters**, only the **selected** items are used in the PivotTable. When you **select** or **deselect** items, the PivotTable will instantly reflect the changes. Try selecting different items to see how they affect the PivotTable.

- | To select a single item, just click on it.
- | To select multiple items, hold down the **Control (Ctrl)** key on your keyboard, and then click on each item that you want.

- You can also select multiple items by clicking and dragging the mouse. This is useful if the desired items are **adjacent** to one another, or if you want to **select all of the items**.
- To deselect an item, hold down the **Control (Ctrl)** key on your keyboard, and then click on the item.

Salesperson				
Albertson, Kathy				
Brennan, Michael				
Davis, William				
Dumlao, Richard				
Flores, Tia				
Post, Melissa				
Thompson, Shannon				
Walters, Chris				

Sum of Order Amount				
Column Labels				
Row Labels	East	South	Grand Total	
January	\$1,690.00	\$1,100.00	\$2,790.00	
February	\$1,950.00	\$235.00	\$2,185.00	
March	\$700.00	\$600.00	\$1,300.00	
Grand Total	\$4,340.00	\$1,935.00	\$6,275.00	

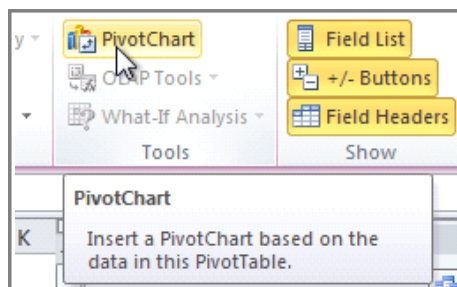
Ctrl-clicking to select multiple items

PivotCharts

PivotCharts are like regular charts, except they display data from a **PivotTable**. As with a regular chart, you'll be able to select a **chart type**, **layout** and **style** to best represent the data. In this example, we'll use a PivotChart so we can visualize the **trends** in each sales region.

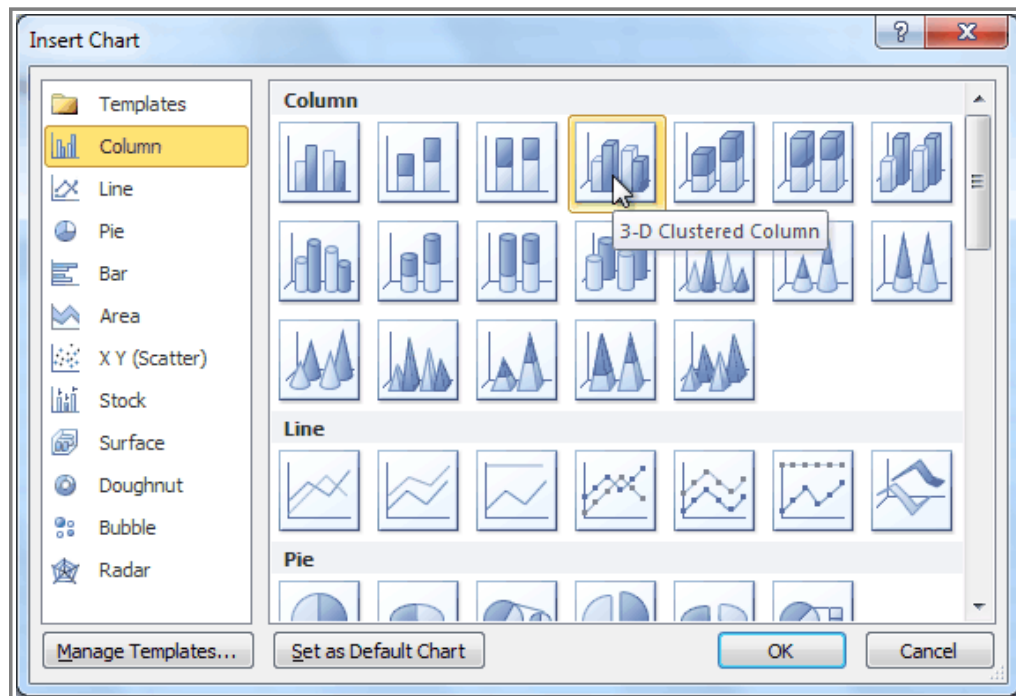
To Create a PivotChart:

- Select any cell in your PivotTable. The **Options** tab will appear in the **Ribbon**.
- From the **Options** tab, click the **PivotChart** command.



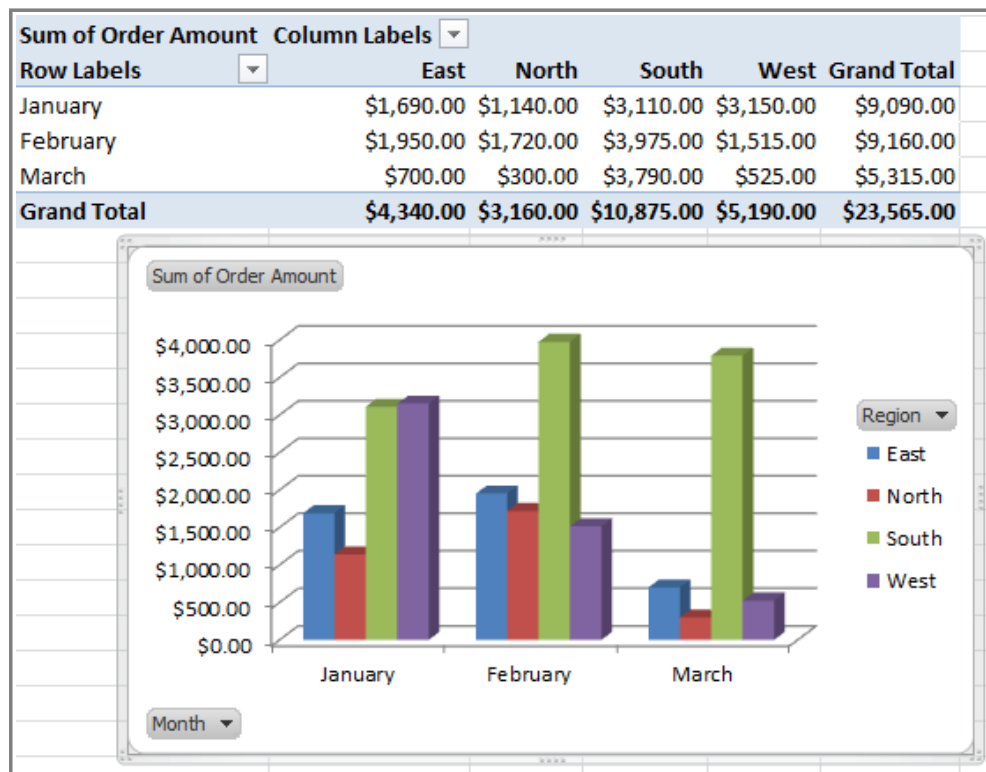
The PivotChart command

- From the **dialog box**, select the desired **chart type** (3-D Clustered Column, for example) and click **OK**.



Selecting a chart type

4. The PivotChart will appear in the worksheet. If you want, you can move it by clicking and dragging.



A PivotChart



Excel 2010

Creating Complex Formulas

Creating Complex Formulas

The screenshot shows the Excel interface. The formula bar at the top displays `=B4*B1`. Below it, a table is visible with columns 'Price' and 'Sales Tax'. The 'Sales Tax' column contains the formula `=B4*B1` in cell C4. The table data is as follows:

	Price	Sales Tax
Unit	\$9.95	\$1.35
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.

Complex Formulas

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

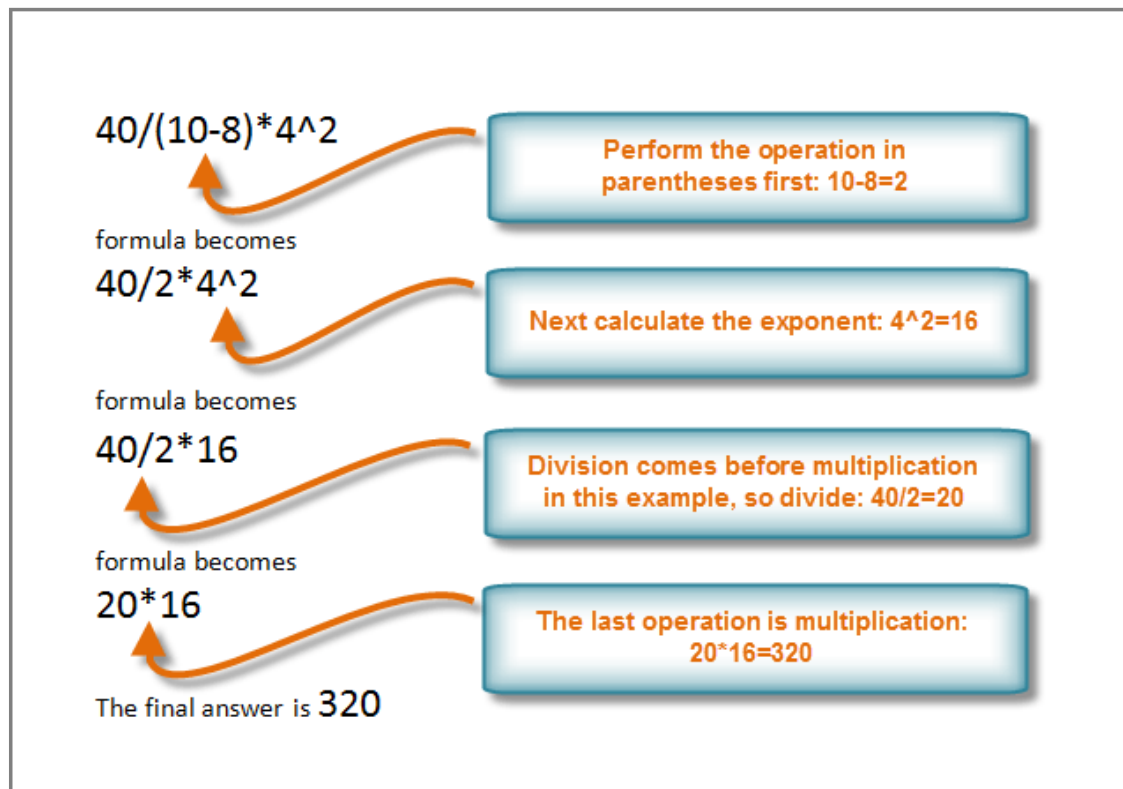
Excel calculates formulas based on the following **order of operations**:

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

A mnemonic that can help you remember the order is **Please Excuse My Dear Aunt Sally**.

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


- 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.
- Second, it will divide the White Lily seeds amount by the Total Lily seeds amount: $37.81/65.67=.5758$.
- 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 a **closed 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						X ✓ f_x		=(F4+ F5)*0.055	
	A	B	C	D	E	F			
1									
2		 Blossoming Bells Nursery							
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.

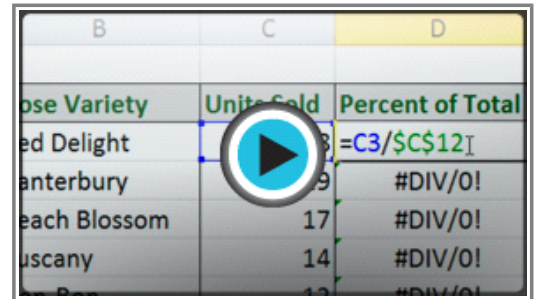
\$2.12

Result in F11

Working with Cell References

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 a formula ($=A1+B1$) into row 2, the formula will change to become ($=A2+B2$).



	B	C	D
	Rose Variety	Units Sold	Percent of Total
1	Ed Delight	8	$=C3/\$C\12
2	Canterbury	9	#DIV/0!
3	Each Blossom	17	#DIV/0!
4	Ruscany	14	#DIV/0!

Watch the video (4:38). [Need help?](#)

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.

 Watch the video to learn how to copy and fill relative and absolute references.

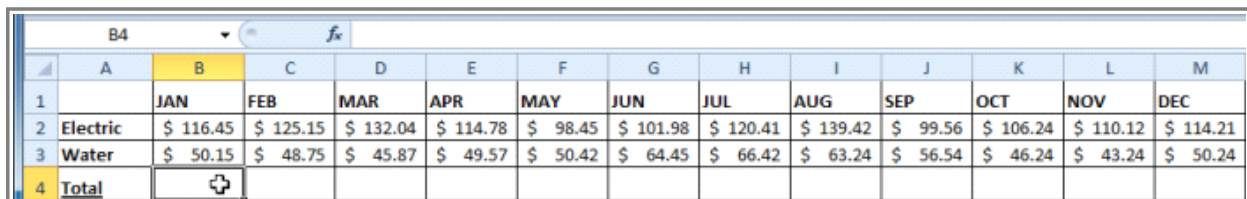
Relative References

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.)

	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

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.

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).

MAX =B4*\$B\$1		
	A	B
1	5.5% Sales Tax	0.055
2		
3	ITEM	Price
4	7" Spanish Pot - BLU	\$9.95
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.)

C5 =B5*\$B\$1		
	A	B
1	5.5% Sales Tax	0.055
2		
3	ITEM	Price
4	7" Spanish Pot - BLU	\$9.95
5	LightWorks Garden Kit	\$24.50
6	Coneflower - Sundown	\$9.99
7	Four Way Soil Analyzer	\$49.99
8	Ferti-Again	\$8.25

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.