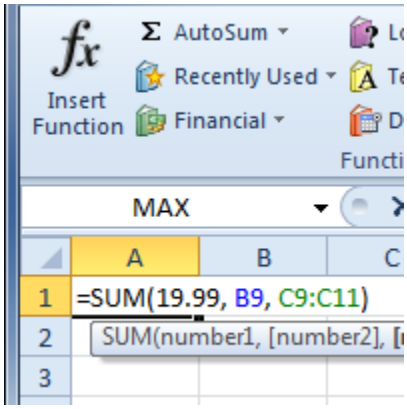
Lesson10-Working with Basic Functions



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.

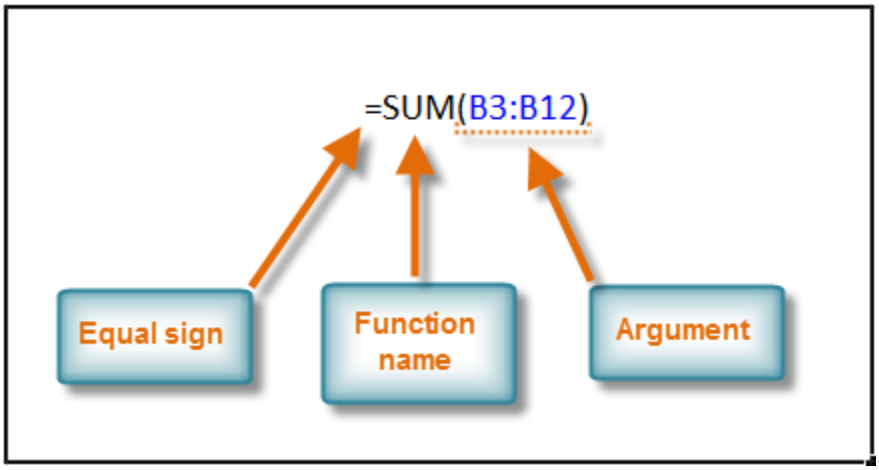
In this lesson, you will learn the basics of inserting common functions into your worksheet by utilizing the **AutoSum** and **Insert Functions** commands. You will also become familiar with how to **search and find various functions**, including exploring Excel's **Functions Library**.

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.

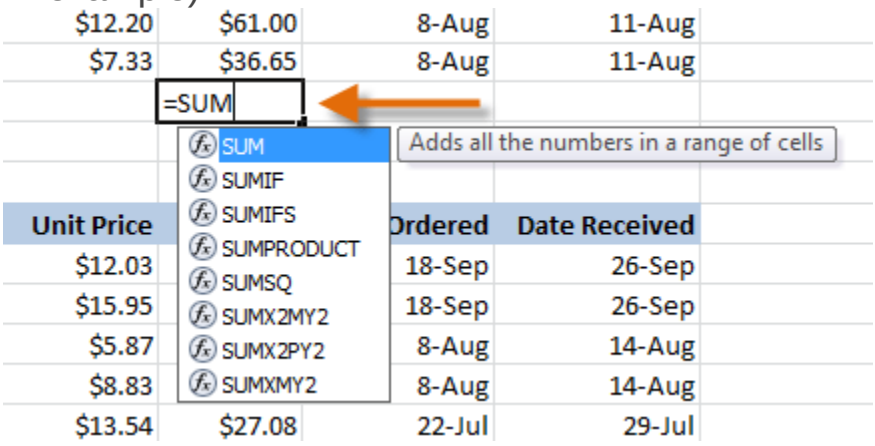
  For example, **=AVG(E19:E23)** would calculate the **average** of the cell range E19 through E23.

- **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.

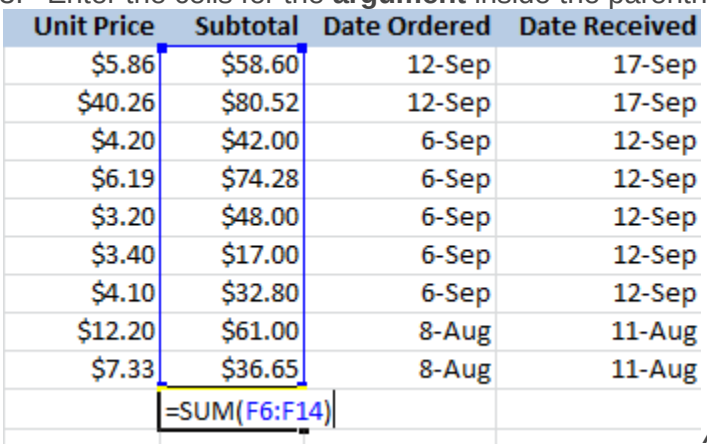
To Create a Basic Function in Excel:

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).



Creating a SUM function

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



Adding cells to the function argument

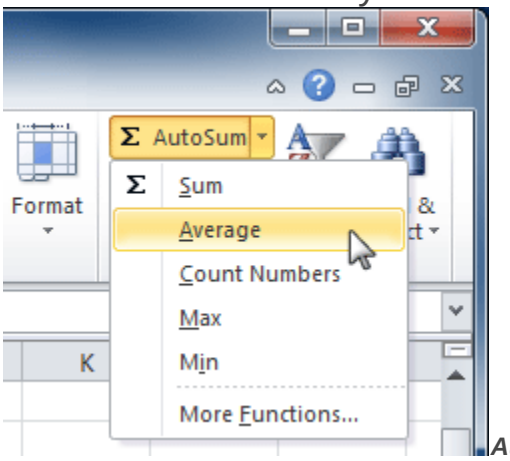
4. Press **Enter** and the result will appear.

$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 AVG.

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 dsiplays cell range

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

$11.24 ***Result***

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

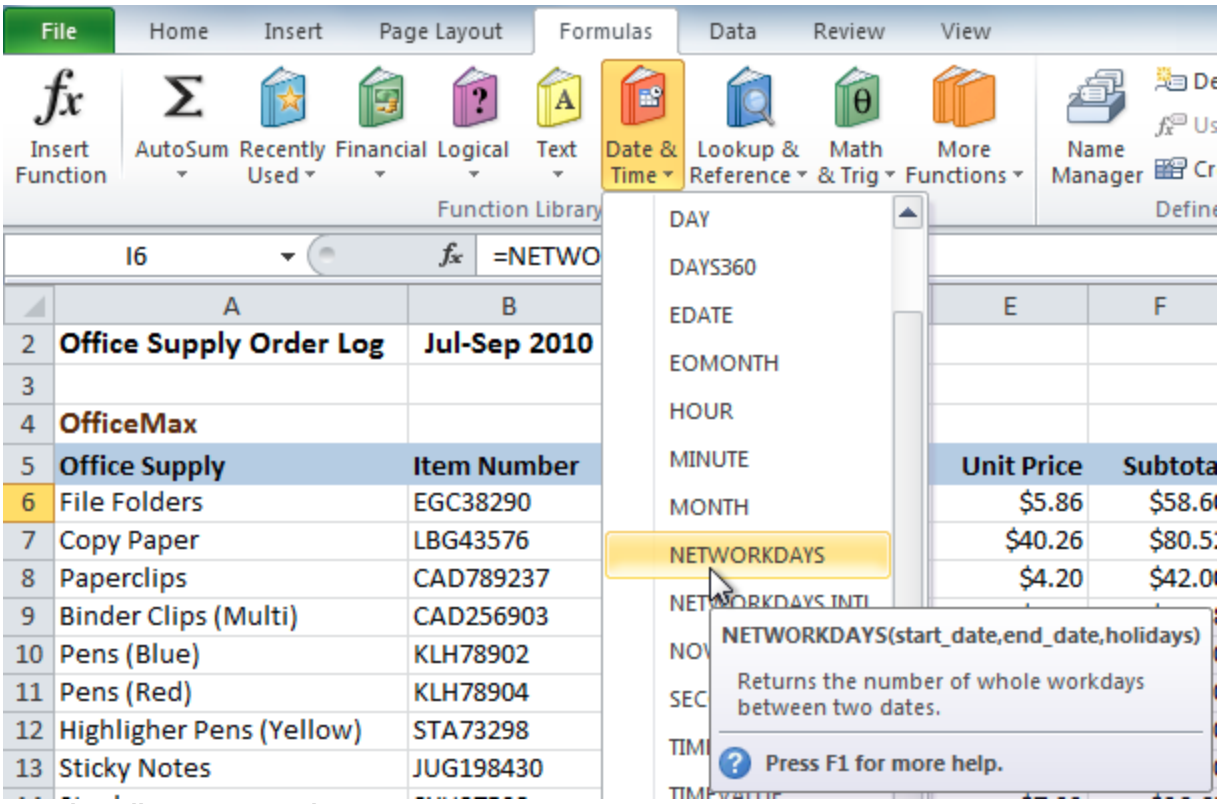
Function Library

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.

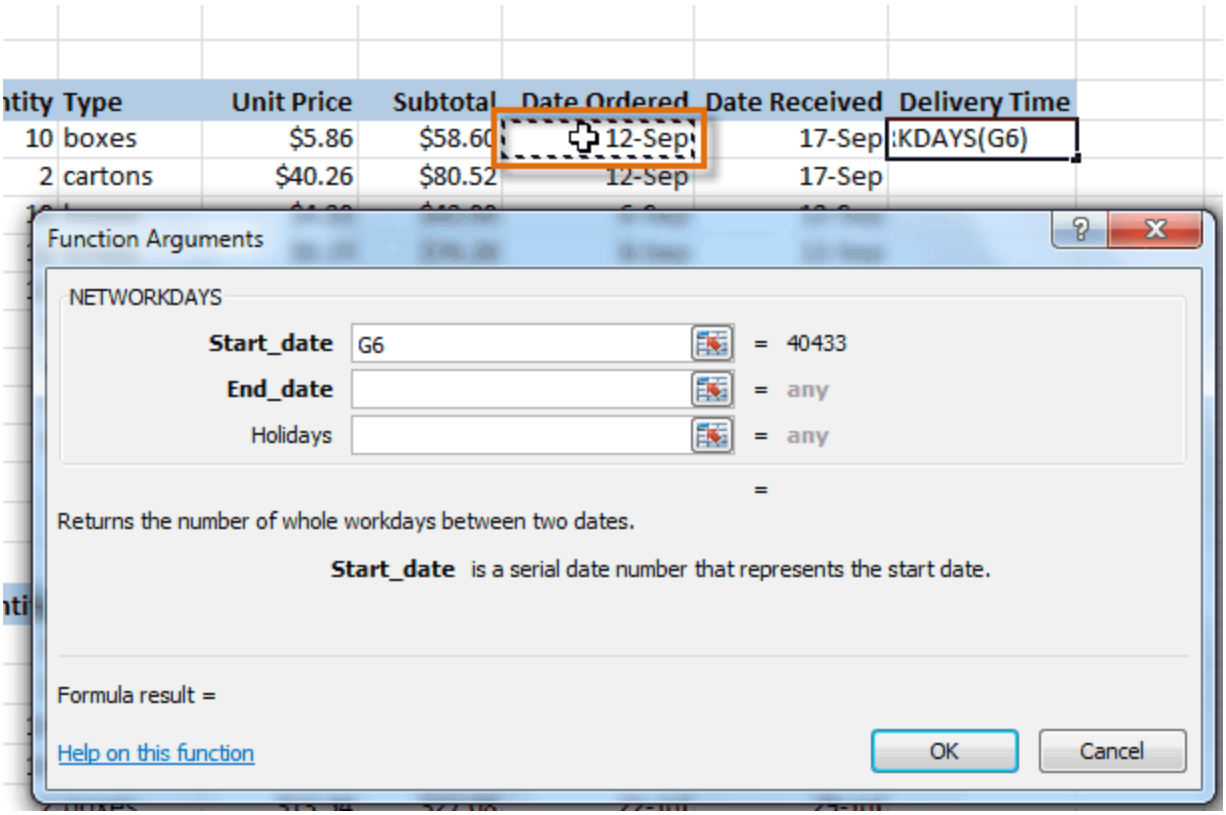
To Insert a Function from the Function Library:

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.



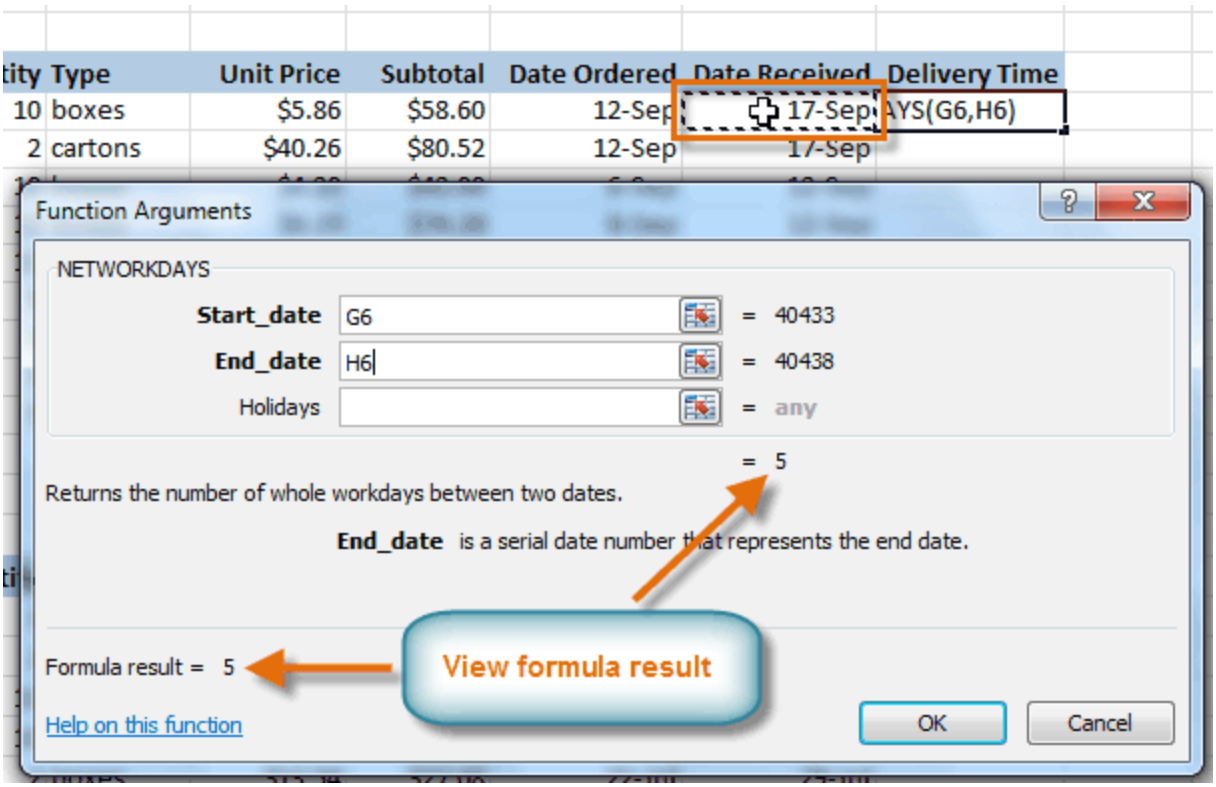
Function Library Date & Time category

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

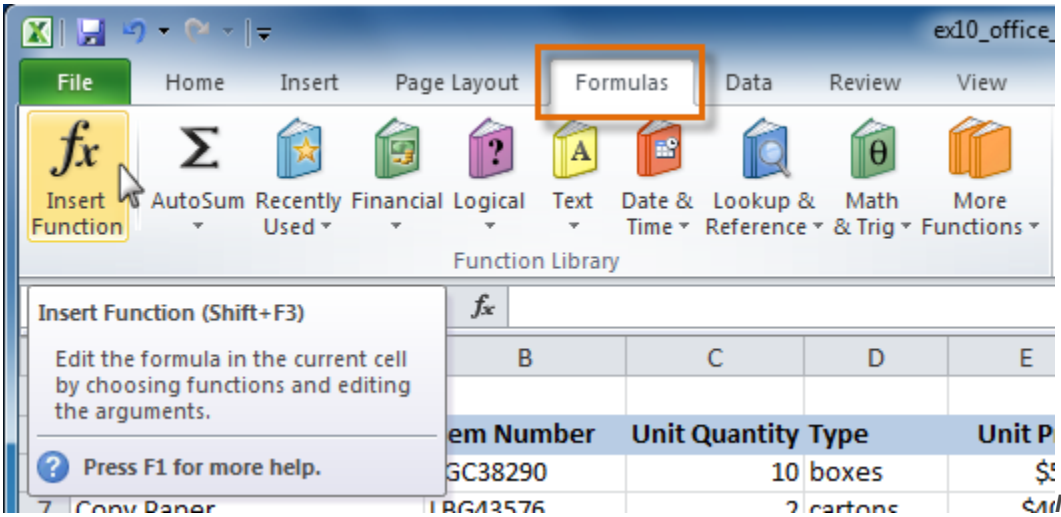
The **Insert Function** command is convenient because it allows you to search for a function by typing a description of what you are looking for or by selecting a category to peruse. The Insert Function command can also be used to easily enter or select more than one argument for a function.

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

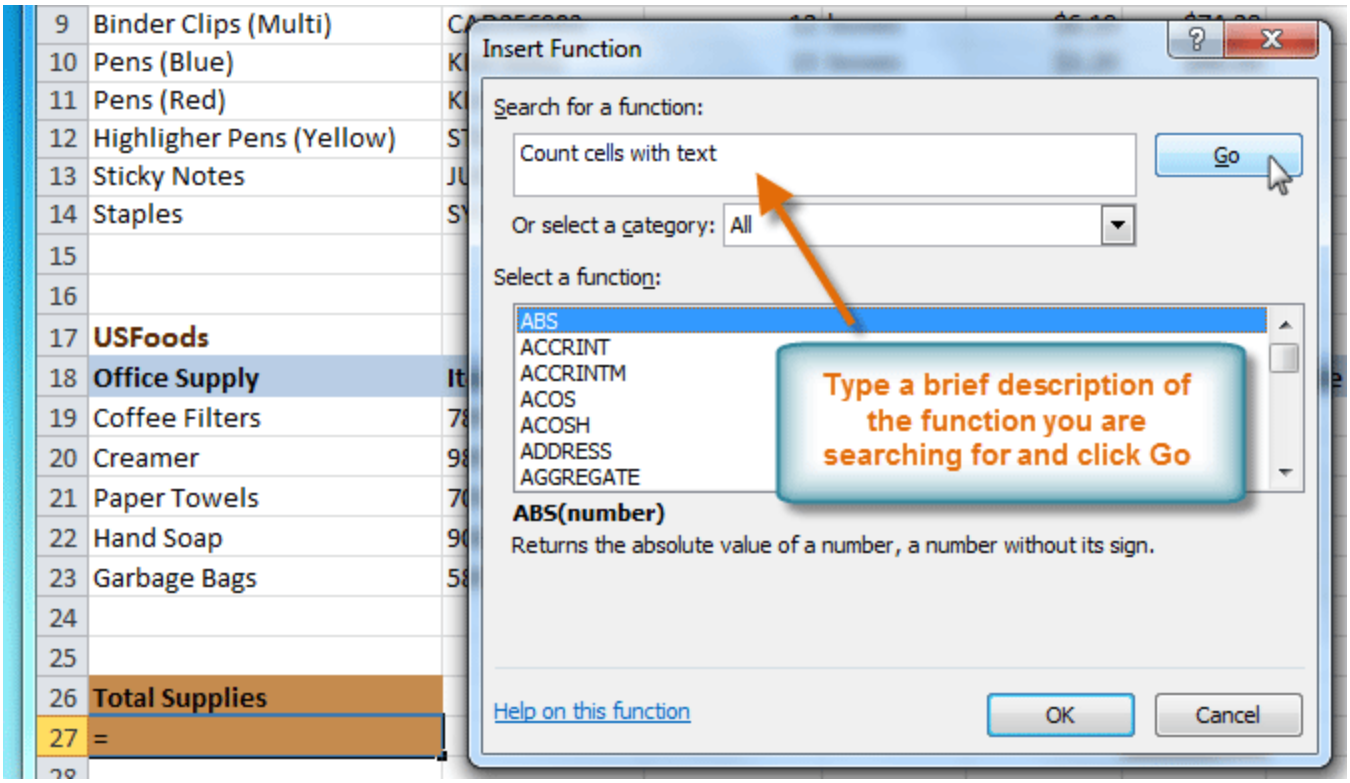
column, which uses text. Therefore, we will need to find a formula that counts cells with text.

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



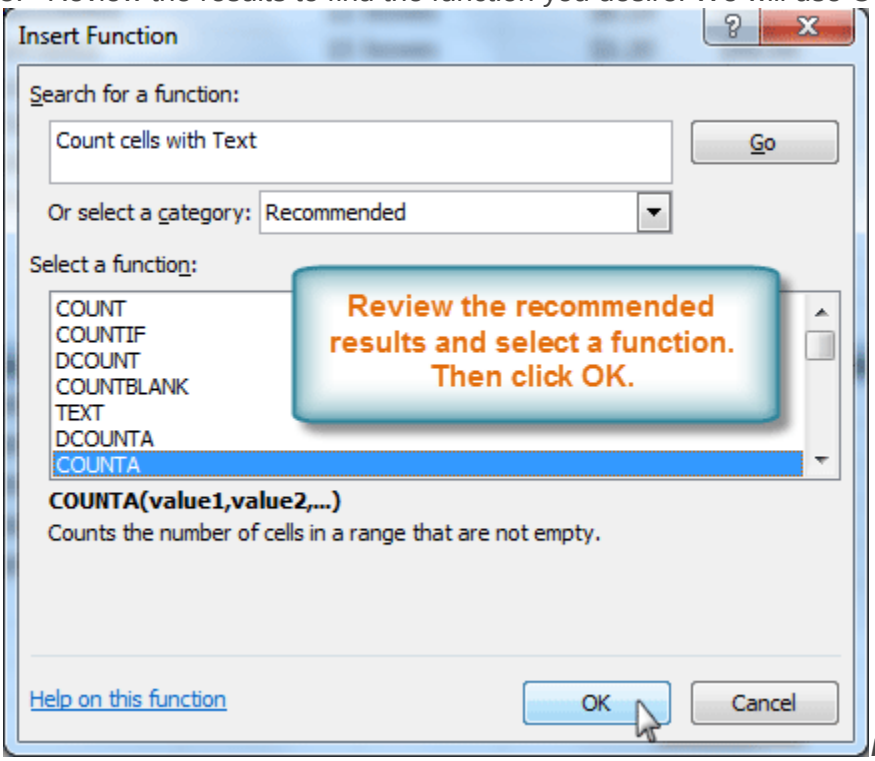
Function command

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.)



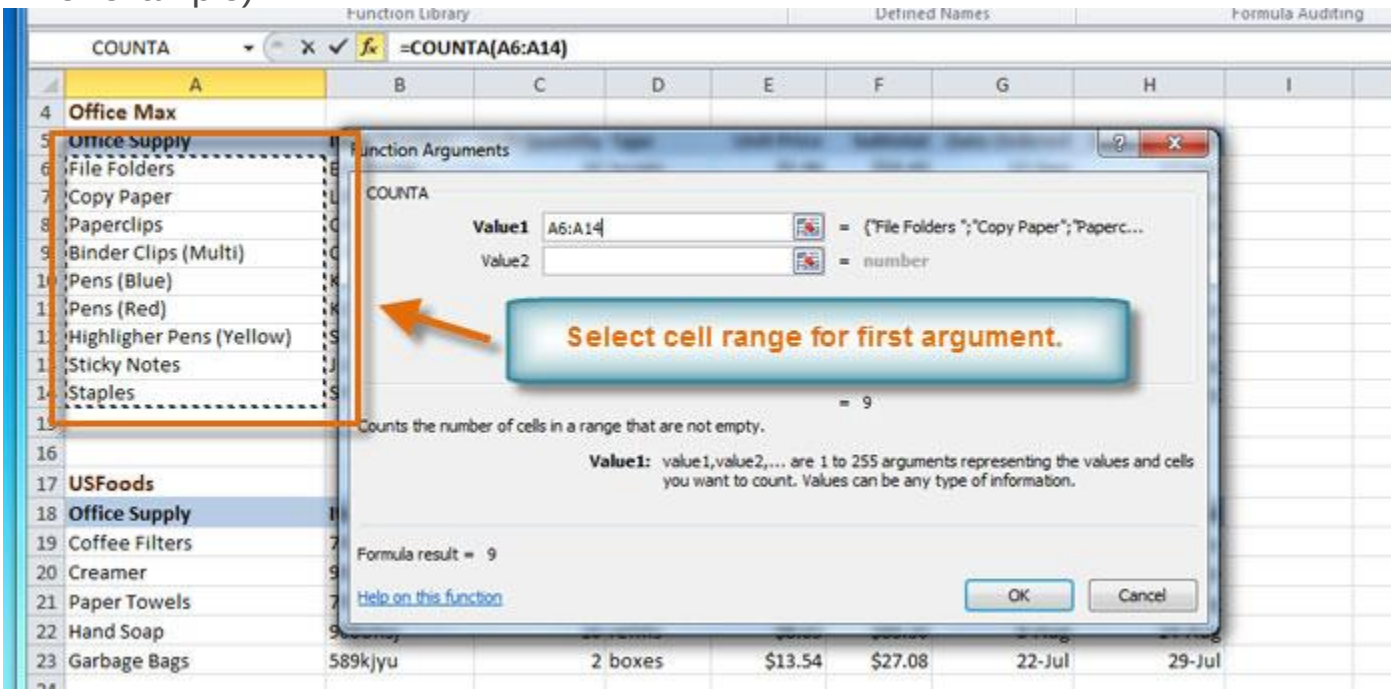
Searching for a function

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



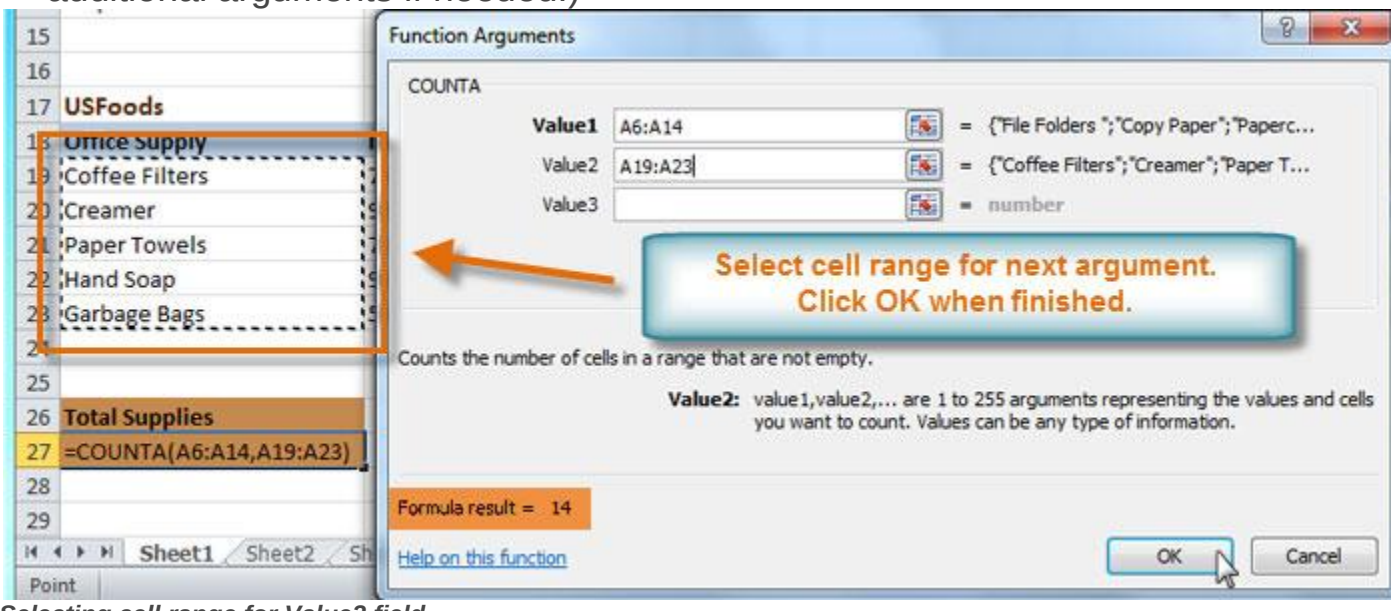
Reviewing function search results

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.

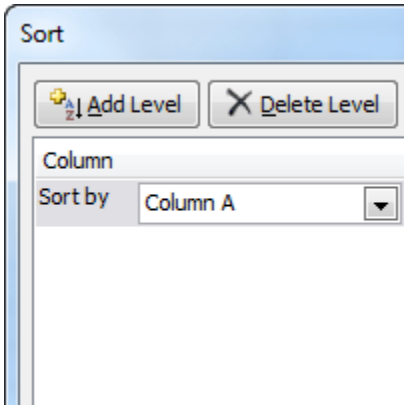
Total Supplies	
	14

Result

Challenge!

1. Open an existing Excel 2010 workbook. If you want, you can use Lesson10 file.
2. Create a function that contains more than one argument.
3. Use AutoSum to insert a function. If you are using the example, insert the MAX function in cell E15 to find the highest priced supply.
4. Insert a function from the Functions Library. If you are using the example, find the PRODUCT function (multiply) to calculate the Unit Quantity times the Unit Price in cells F19 through F23.
5. Use the Insert Function command to search and explore functions.

Lesson11-Sorting Data



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.

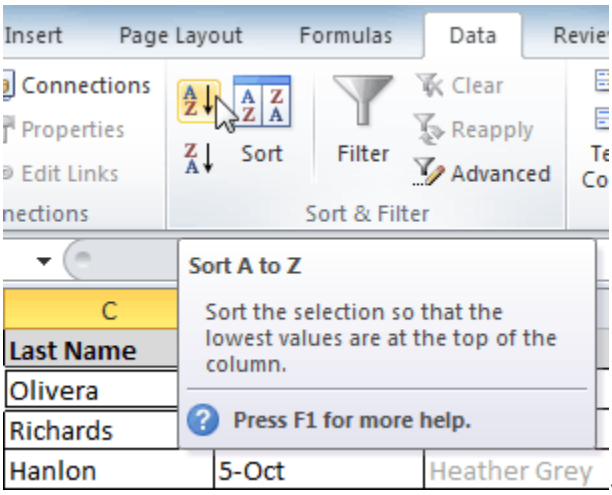
To Sort in Alphabetical Order:

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

2. From the **Data** tab, click the ascending command to **Sort Smallest to Largest**, or the descending command to **Sort Largest to Smallest**.
3. 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:

1. 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

2. From the **Data** tab, click the ascending command to **Sort Oldest to Newest**, or the descending command to **Sort Newest to Oldest**.
3. 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

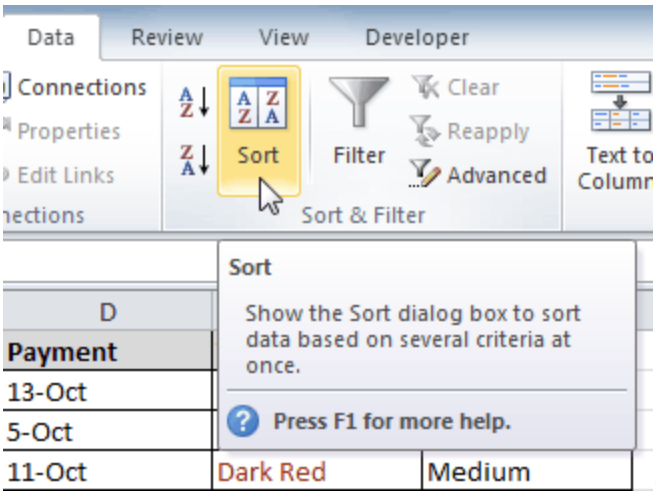
Sorted by payment date, from oldest to newest

Custom Sorting

To Sort in the Order of Your Choosing:

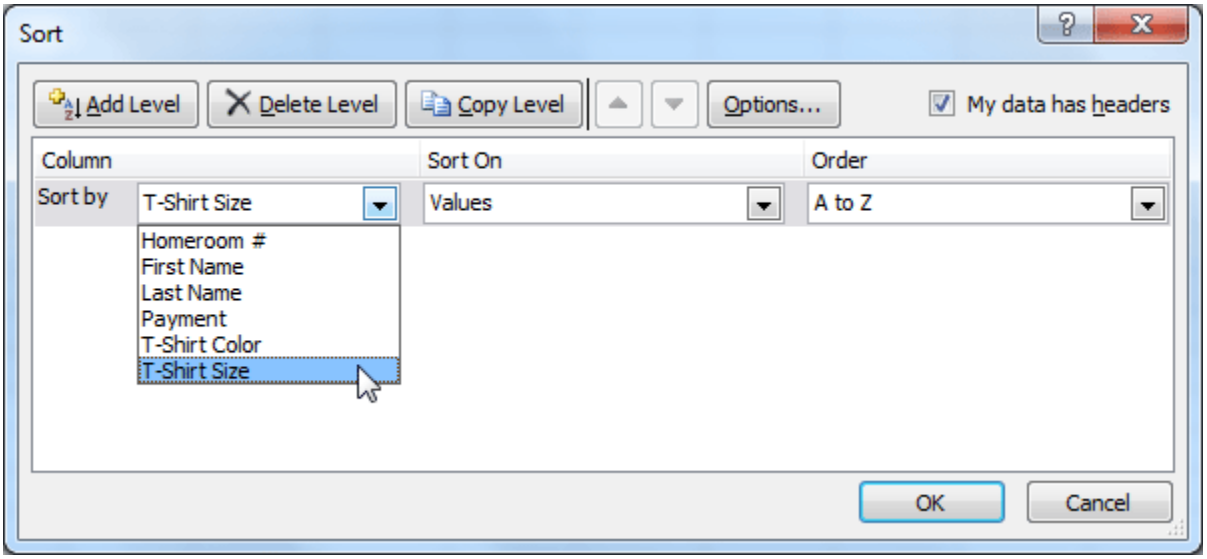
You can use a **Custom List** to identify your own sorting order, such as days of the week, or, in this example, t-shirt sizes from smallest to largest (Small, Medium, Large, and X-Large).

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



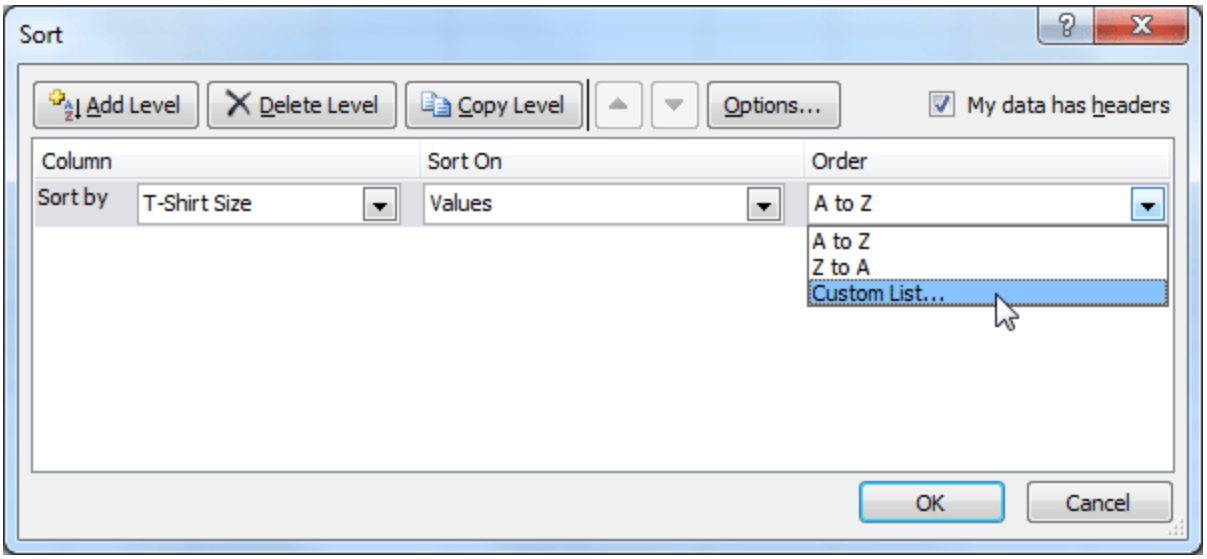
Opening the Sort dialog box

2. 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.



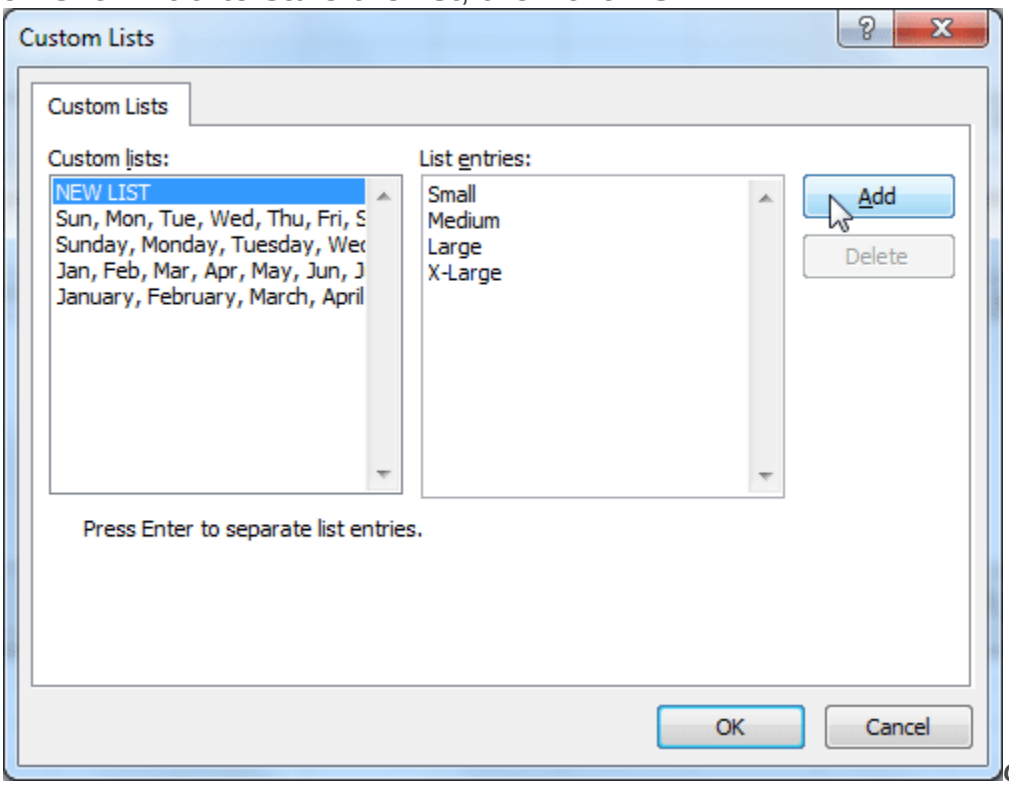
Selecting a column to sort by

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



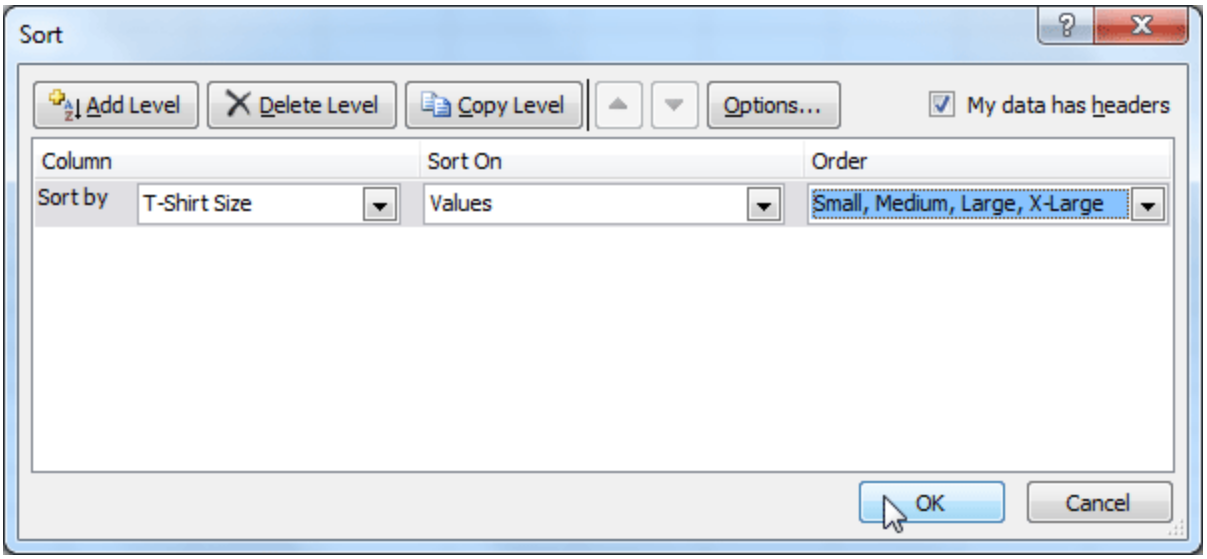
Choosing to order by Custom List

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

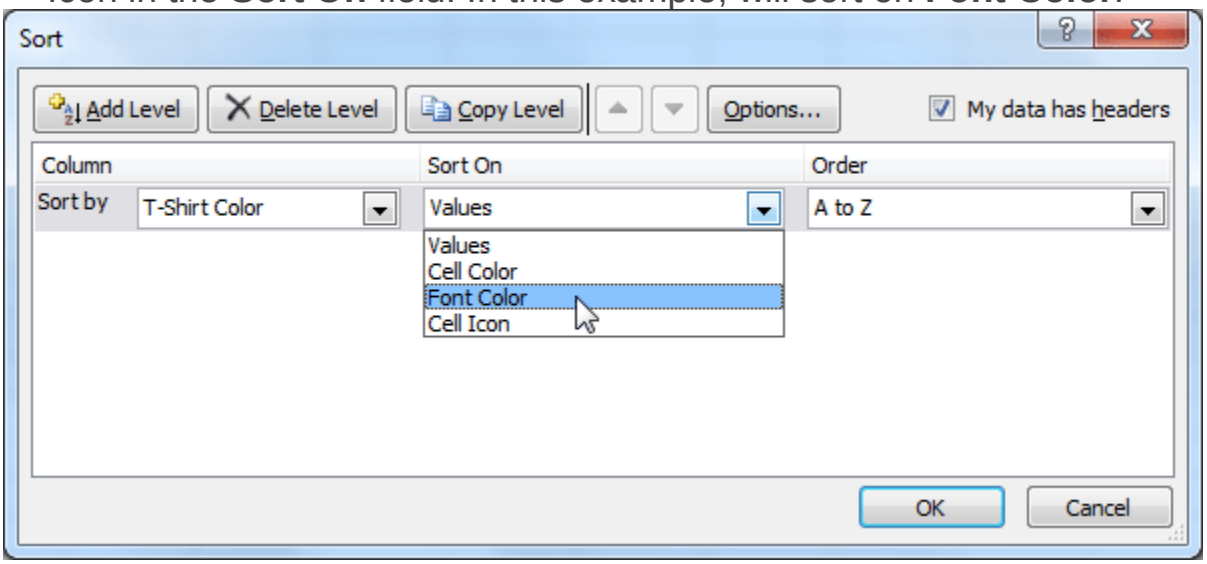
8. The spreadsheet will be sorted in order of Small, Medium, Large, and X-Large.

	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	4-0ct	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

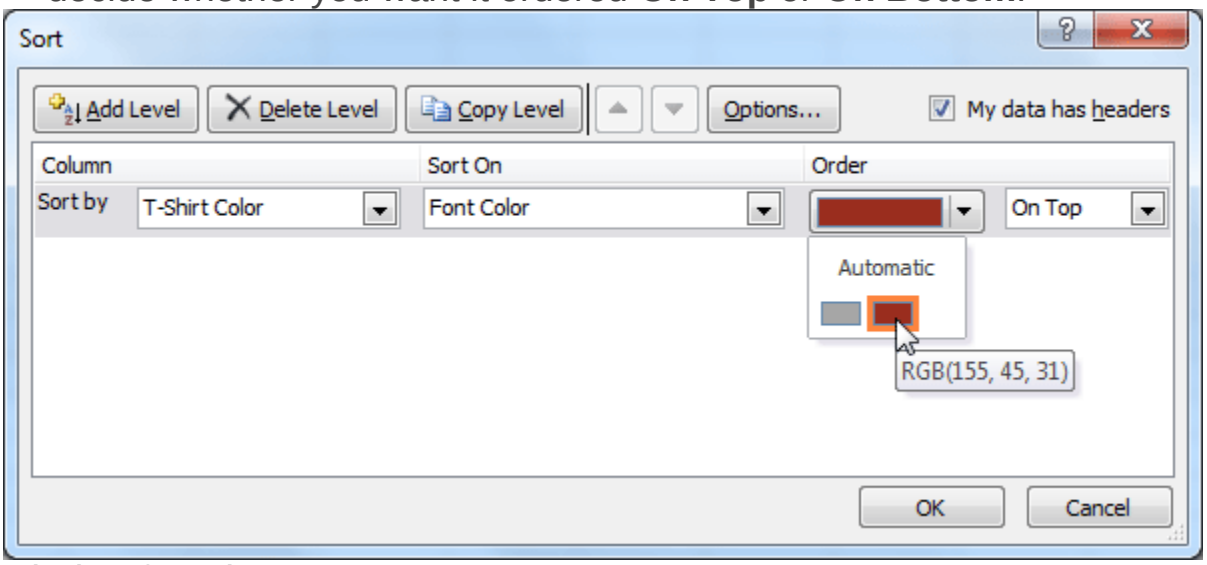
To Sort by Cell Color, Font Color, or Cell Icon:

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.
3. 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

4. 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

5. 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

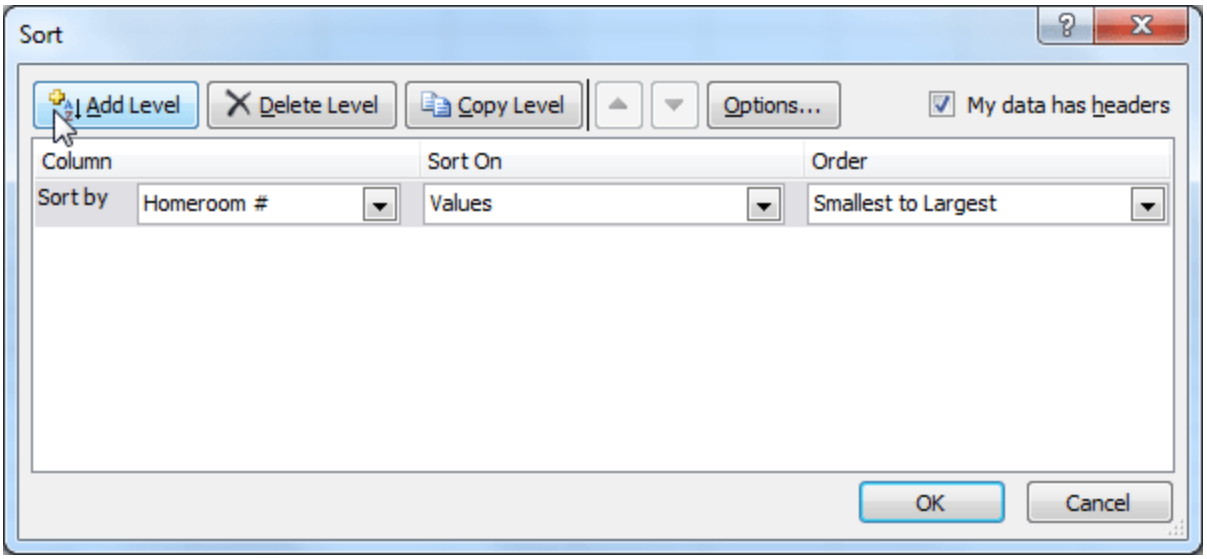
Sorted by font color

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.

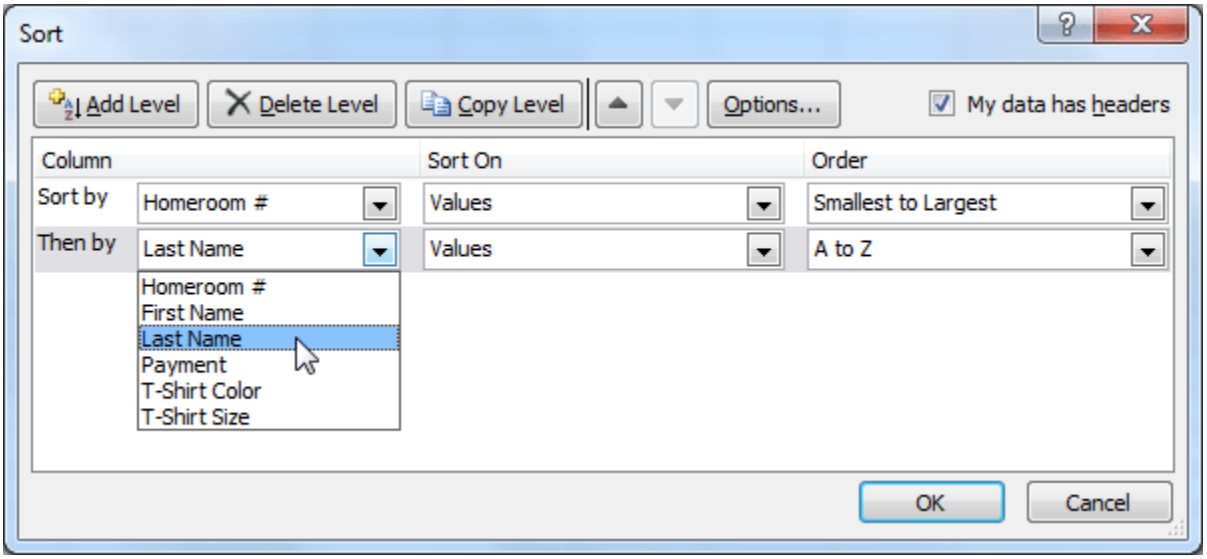
To Add a Level:

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.

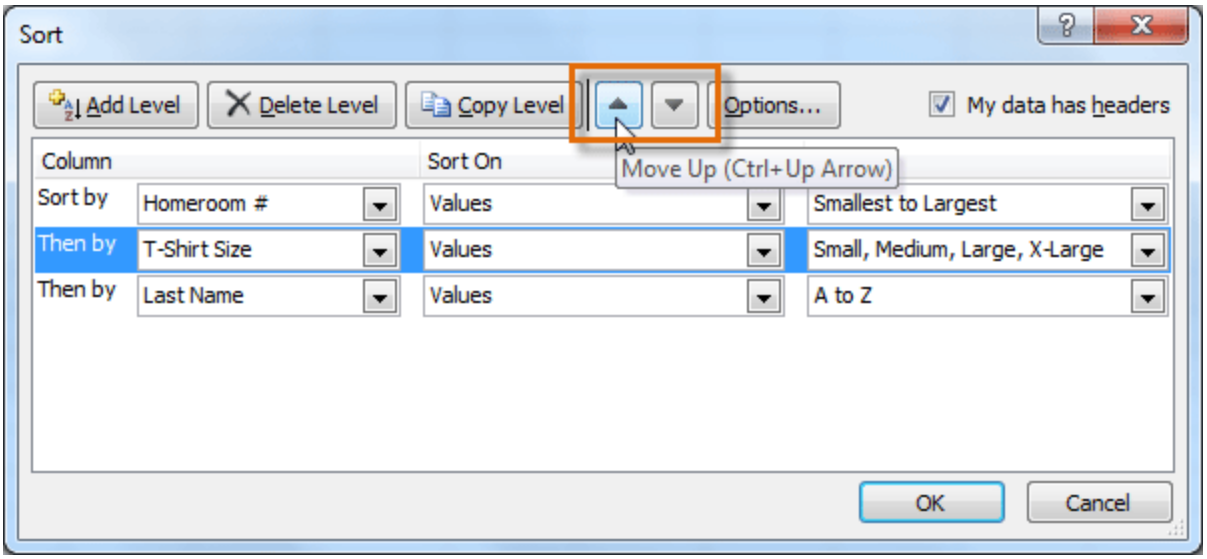
	A	B	C
1	**Homeroom #**	**First Name**	**Last Name**
2	105	Nathan	Albee
3	105	Christiana	Chen
4	105	Sidney	Kelly
5	105	Derek	MacDonald
6	105	Melissa	White
7	105	Esther	Yaron
8	110	Kris	Ackerman
9	110	Matt	Benson
10	110	Gabriel	Del Toro
11	110	Regina	Olivera
12	135	Anisa	Naser
13	135	James	Panarello
14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

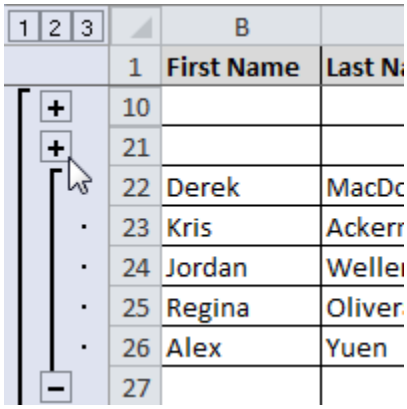
4. Click **OK**.

Challenge!

1. Open an existing Excel workbook. If you want, you can use Lesson11 file.
2. Sort a column in ascending or descending order. If you are using the example, sort by Homeroom #.
3. Add a second level, and sort it according to cell color, font color, or cell icon. If you are using the example, add a second and third level to sort by the red and grey fonts used in T-Shirt Color.
4. Add another level, and sort it using a Custom List. If you are using the example, sort by T-Shirt Size in the order of Small, Medium, Large, and X-Large.
5. Change the sorting priority. If you are using the example, re-order the list to sort by T-Shirt Color (red), then by T-Shirt Color (grey), then by T-Shirt Size, then by Homeroom #.

Lesson12-Outlining Data

Introduction



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.

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**.

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**. 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

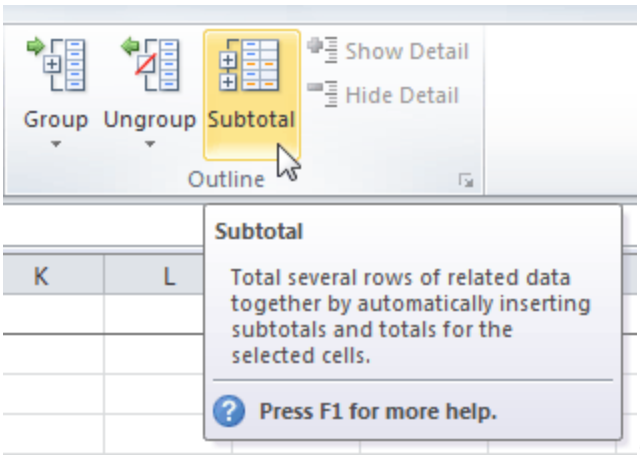
to show the count, but hide the details that are not crucial to the placing of the order (such as the student's homeroom number and payment date).

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

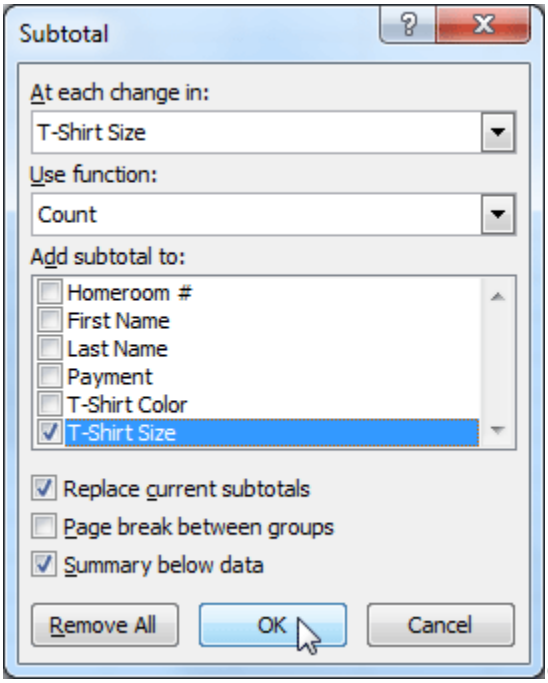
Sorted by t-shirt size

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.

		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.

		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.

		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 1 2 3 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.

		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.

		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.

		C	D	E	F
1 2 3	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

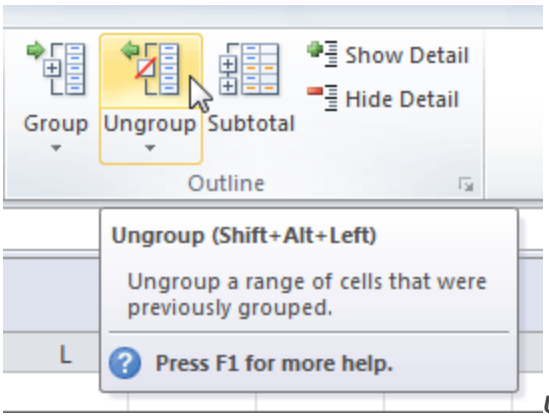
To Ungroup Data:

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

		C	D	E	F
1 2 3	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.



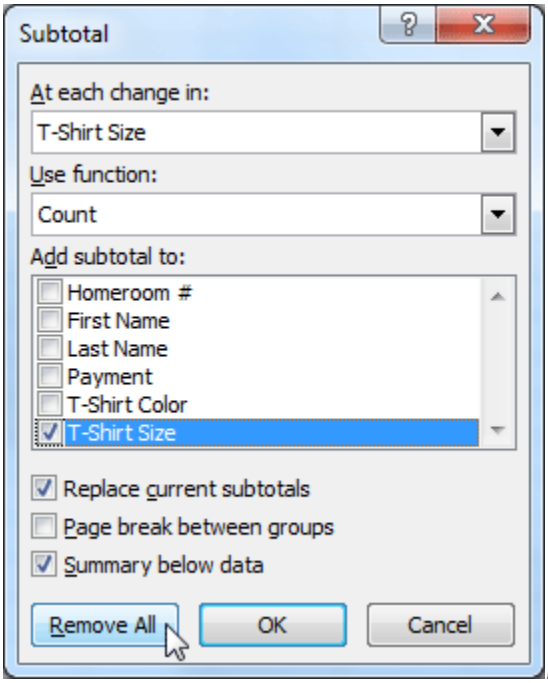
Ungrouping the selected cells

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

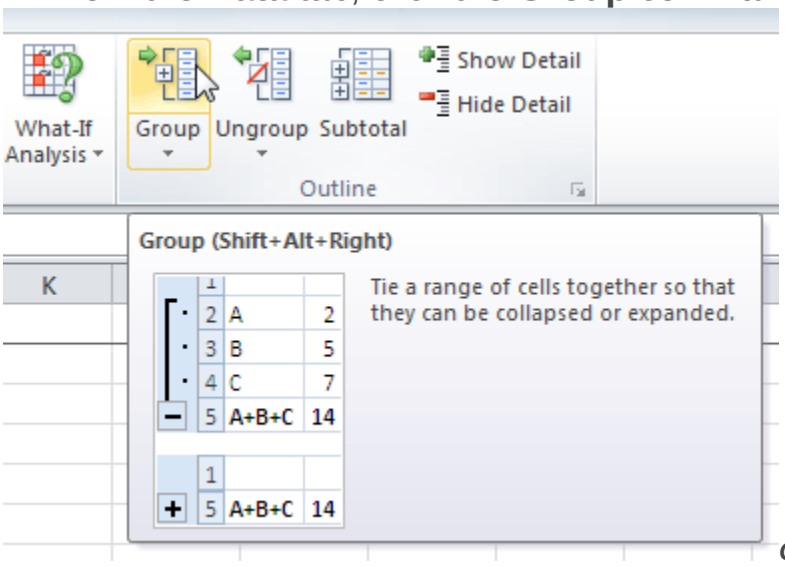
to the distribution of the t-shirts; however, instead of deleting it, we will group it, then temporarily hide it from view.

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

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



Grouping the selected cells

3. Excel will group the selected columns or rows.

	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

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

	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.

Challenge!

1. Open an existing Excel workbook. If you want, you can use this lesson12 file

2. Outline your worksheet using the Subtotal command. If you are using the example, outline by t-shirt size.
3. Display the first level of groups in your outline.
4. Display the highest level to view your entire worksheet again.
5. Create your own group of rows or columns, then hide the group from view.
6. Ungroup any range of data.
7. Remove subtotaling from your worksheet.

Challenge!Lesson10

1. Open an existing Excel 2010 workbook. If you want, you can use Lesson10 file.
2. Create a function that contains more than one argument.
3. Use AutoSum to insert a function. If you are using the example, insert the MAX function in cell E15 to find the highest priced supply.
4. Insert a function from the Functions Library. If you are using the example, find the PRODUCT function (multiply) to calculate the Unit Quantity times the Unit Price in cells F19 through F23.
5. Use the Insert Function command to search and explore functions.

Challenge! Lesson11

1. Open an existing Excel workbook. If you want, you can use Lesson11 file.
2. Sort a column in ascending or descending order. If you are using the example, sort by Homeroom #.
3. Add a second level, and sort it according to cell color, font color, or cell icon. If you are using the example, add a second and third level to sort by the red and grey fonts used in T-Shirt Color.
4. Add another level, and sort it using a Custom List. If you are using the example, sort by T-Shirt Size in the order of Small, Medium, Large, and X-Large.
5. Change the sorting priority. If you are using the example, re-order the list to sort by T-Shirt Color (red), then by T-Shirt Color (grey), then by T-Shirt Size, then by Homeroom #.

Challenge! Lesson12

1. Open an existing Excel workbook. If you want, you can use this lesson12 file
2. Outline your worksheet using the Subtotal command. If you are using the example, outline by t-shirt size.
3. Display the first level of groups in your outline.
4. Display the highest level to view your entire worksheet again.
5. Create your own group of rows or columns, then hide the group from view.
6. Ungroup any range of data.
7. Remove subtotaling from your worksheet.