



Microsoft Excel 2

Intermediate-Level Features of Excel 2013

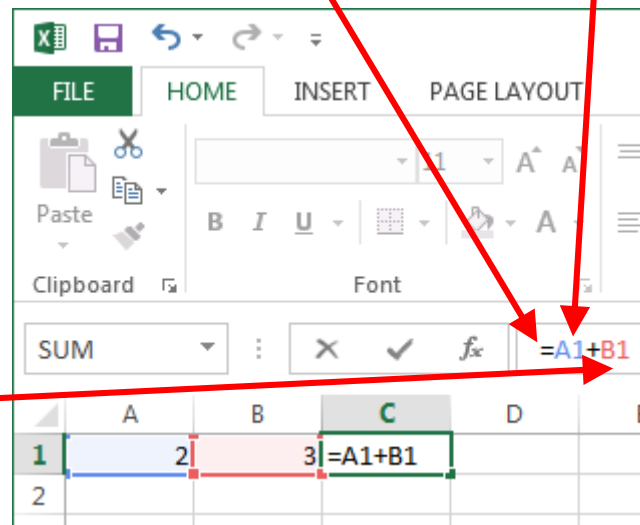
Review: Formulas

A **formula** is mathematical statement written by the user to be calculated. Formulas can be as simple or as complex as the user wants.

NOTE: In Excel, the syntax for ALL functions and formulas begins with an equals sign (=)

This informs Excel that what you type is a formula and not simply another word or number.

1. Click the cell where you want the formula result to appear (for example, **C1**).
2. All functions must start with the equal sign. Type the equal sign (=) into the formula bar.
3. Click or type the cell that contains the first value you want in the formula (for example, **A1**).
4. Type a mathematical operator
 - a. All functions use the following mathematical operators:
 - i. Addition (+)
 - ii. Subtraction (-)
 - iii. Multiplication (*)
 - iv. Division (/)
5. Click on or type the cell that contains the second value you want in the formula (for example, **B1**).
6. Click **Enter** to calculate your formula (=A1+B1).



7. Review: Auto Fill

The **Auto Fill** feature inputs information without retyping it in each box. You can type “January” and **Auto Fill** can fill in the rest of the months. The same works for numbers, days of the week and other text data series. **Auto Fill** can also repeat a formula across many rows or columns.

To use Auto Fill, simply select a cell containing a data series then left-click and drag on the **fill handle**



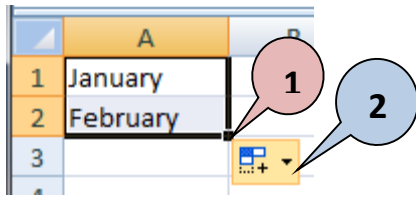
(small, black square in lower-right corner) to select the cells you wish to Auto Fill. After you

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release the mouse button, an **Auto Fill Options** button is displayed just below and to the right of the last cell you just **Auto Filled**. Click on this button to choose alternative options of how to fill the cells.



1 Fill handle (drag it)

2 Auto Fill Options button (click on it)

Review: AutoSum

AutoSum will do math on all the numbers in a column or row very quickly and easily. In the Excel 1 class, we used **AutoSum** only to add all the numbers together. **AutoSum** can also do other functions, such as finding the average of a row or column, or finding the highest or lowest number (max and min).

To use AutoSum:

1. Click in the cell you want your answer to appear in
2. Click the **Down Arrow** of the **AutoSum** button on the **Formula** tab
3. Choose which type of math you want to do
4. Highlight the numbers you want to use **AutoSum** on. A dotted box should show up around them. You can also manually change the cells in the formula bar. ****NOTE: if you already have totals in your column or row make sure that they are NOT selected**
5. Press Enter

Auto Fill also works for AutoSum! Just use the same method you used for formulas.

Practice using **AutoSum** to calculate the **total Profit (SUM)**, **average Profit (AVG)**, **maximum Profit (MAX)**, and **minimum Profit (MIN)**.

Make sure that when you select the cells to do your AutoSum to that you don't include the cells for the other AutoSum totals, only the data!

Quantity	Profit
17	85
9	45
11	33
6	18
10	50
12	36
13	65
16	80
15	45
19	57
	514
	51.4
	85

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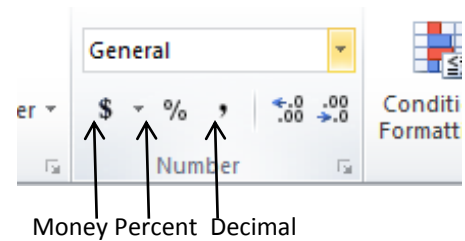


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Formatting Cells

When you enter data into a cell in Excel, it is handled differently depending on what type of formatting you have assigned. For example, if you choose Currency formatting, Excel will automatically convert 3 into \$3.00; if you choose Date formatting, Excel would convert “3/1” to “March 1, 2013”; and if you choose Percent formatting, Excel would change “0.3” to “30%”.

1. Select the specific cell, row, or column you want to format.
2. Find the **Number** section in the **Home** tab
3. Click the down arrow to choose the category you want for your data and then pick a specific type (how you want it to appear). There are also buttons for Currency, Percentage, and Decimal point to make those faster.




Sorting Data in Lists

Sorting is a common task that allows you to change or customize the order of your spreadsheet data to better organize your information. Data can be sorted by text (in ascending A to Z, or descending Z to A order), numbers (smallest to largest or largest to smallest), or by dates (newest first or oldest first). Using the custom sort dialog, you can also sort by many other criteria: formats, colors, fonts, etc.

Type in the table below:

	A	B	C	D
1	Volunteers at PPL			
2	<u>Name</u>	<u>Day Free</u>	<u>Hours Served</u>	<u>Money Donated</u>
3	Mia	Tue	50	\$ 25.00
4	Abdi	Mon	110	\$ 30.00
5	Adam	Fri	25	\$ 15.00
6	Steve	Thu	30	\$ 5.00
7	Abu	Wed	90	\$ 45.00
8	Kendra	Mon	65	\$ 55.00
9	Ahmed	Thu	125	\$ 15.00

Note: Type in *Volunteers at PPL* in Cell A1, and then merge and center by highlighting from cell A1 to D1 and clicking on . This button is located on the home tab in the alignment group.

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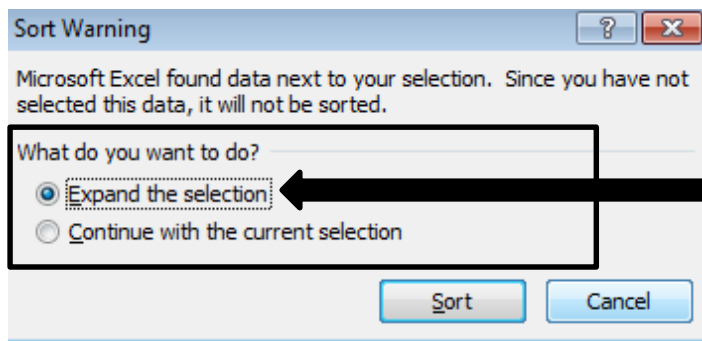
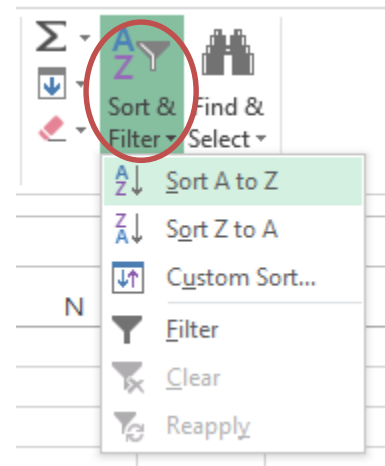


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Perform a simple sort:

1. Select the column or row you want to sort. You may need to highlight with the mouse as to not select Totals.
2. The **Sort & Filter** button is located on the home tab in the editing group. This area allows you to make complicated and custom sorts, but for most purposes, people can just use the **Sort A to Z** or the **Sort Z to A** menu items to quickly sort:

- Alphabetically
- Number Order
- Date and Time



Always expand the selection so that your data stays together across all the different categories!

Perform a custom sort:

A custom sort may be necessary to do sorts that don't fit in to the alphabetical or numerical sort, such as days of the week.

1. Select the entire table including the headers.
2. On the ribbon click on **Sort & Filter** and then click on **Custom Sort...**
3. In the following Sort box that appears, change the field in **Sort by** to **Day Free**.
4. In the **Order** field, select **Custom List...**
5. In the Custom List box that appears, Select the custom list that says: **Sun, Mon, Tue, Wed, Thu..**
6. Click OK, and then ok once more in the Sort box. Your table should be sorted by the days of the week!

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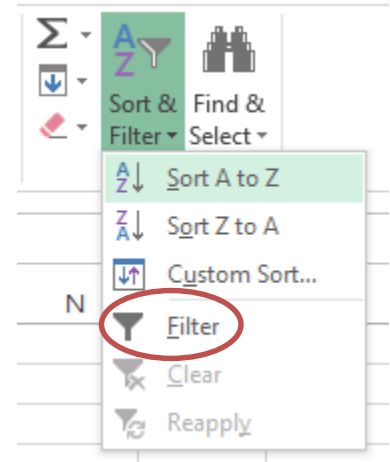
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Filtering Data

Filtering allows you to show only cells that have certain information in them. Once enabled, you can quickly filter your data based on criteria you specify. Excel will only display the rows meeting the criteria, hiding the other rows.

To Filter:

1. Make the data type is the same within the column (i.e. all text, all numbers, all dates, etc.) and the column has a column heading
2. Click inside any data cell that is among the ones to be filtered
3. On the ribbon, click on the Data tab
4. In **Sort & Filter** area, click **Filter**
5. Notice that a small down arrow appears on your column heading.
**Note: Filtering DOES NOT work without a column heading
6. Click on the arrow by the heading to display the filter data options. Check the categories you want to appear, and uncheck the categories you do not want to appear.
7. To deactivate the filter, just click on (Select All). To make the arrow go away, click on the **Filter** button in the **Sort & Filter** area on the ribbon.



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Subtotals

Subtotals are another built-in tool that can be quickly applied to subtotal data in a sorted list. When used, the Subtotal tool will insert a blank row at each change of data and add a summary function (such as SUM, AVERAGE, COUNT, MINIMUM or MAXIMUM), as well as a Grand Total calculation at the bottom of the data set.

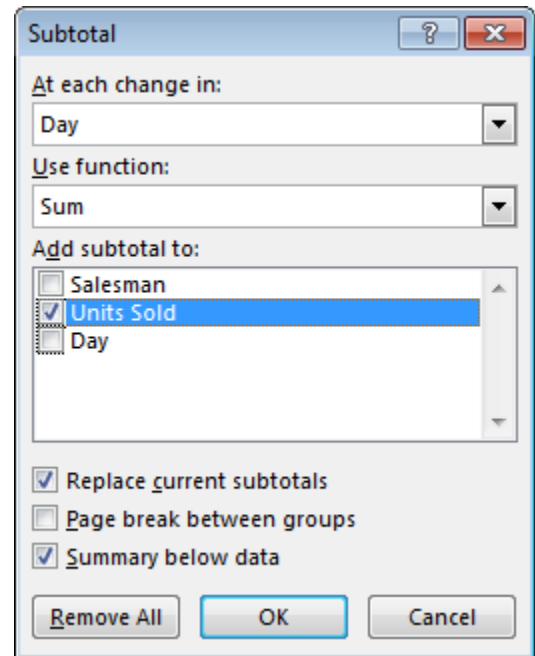
****Before enabling subtotals, your data must be sorted by the field you wish to subtotal ****

Type in the Following Example:

Salesperson	Units Sold	Day
Jim	5	Mon
Mary	13	Mon
Jim	7	Tue
Mary	6	Tue
Jim	9	Wed
Mary	8	Wed

To Add Subtotals

1. Sort your data
2. Highlight your data **including the column headings**
3. On the **Data** tab click the **Subtotal** button in the Outline area
4. In the “**At each change in:**” drop-down list, choose the sorted column that triggers a subtotal calculation when the data changes value (person, day, product, etc.)
5. In the “**Add subtotal to:**” drop-down list, choose the column whose data will be used in the subtotal calculation (usually money)
6. In the “**Use function:**” drop-down list, choose what math function you want to use on the subtotaled column



To Remove Subtotals

1. Select a cell in the Database
2. On the Data tab click the **Subtotals** button
3. Click the **Remove All** button

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What it should look like after subtotals are added:

Salesperson	Units Sold	Day
Jim	5	Mon
Mary	13	Mon
	18	Mon Total
Jim	7	Tue
Mary	6	Tue
	13	Tue Total
Jim	9	Wed
Mary	8	Wed
	17	Wed Total
	48	Grand Total

Conditional Formatting: Allows you to create rules for when and how cells are formatted based on the contents of the cell. For example, you can set conditional formatting so that a cell turns blue or green, based on its value.

To turn on:

1. Select all of your data
2. Click the **Conditional Formatting** button on the Home Tab
3. Click **Highlight Cells Rules**
4. Choose a rule and formatting option to make those cells stand out. Example: For data values greater than 12, use light red fill with dark red text.

Under conditional formatting, you can also add icon sets and/or color scales to show patterns in your data

To turn off:

1. Click the **Conditional Formatting** button on the Home Tab
2. Select **Clear Rules**
3. Choose **Clear Rules from Entire Sheet**

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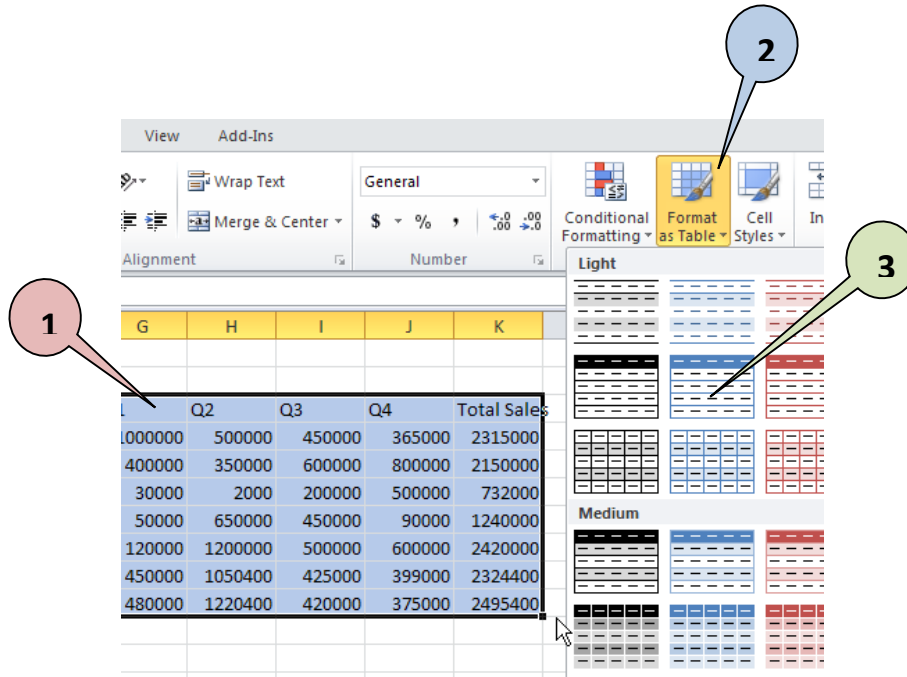


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Format as a table: Formatting your spreadsheet as a table can make it look better and in some cases can also make it easier to manage.

1. Highlight all of the data cells and column headers you want to include in your table 1
2. Under the **Home** tab, click on **Format as Table** 2
3. Choose a table that looks nice. 3
4. Click “OK” to choose the data for your table when the box pops up

When you highlight a table, a new **Design** tab appears in the ribbon where you can change the look of your table.



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LET'S PRACTICE WHAT WE LEARNED

1. Type the following unsorted data into a spreadsheet:

Salesman	Units Sold	Day
Jim	5	Mon
Jim	7	Tue
Jim	9	Wed
Mary	13	Mon
Mary	6	Tue
Mary	8	Wed

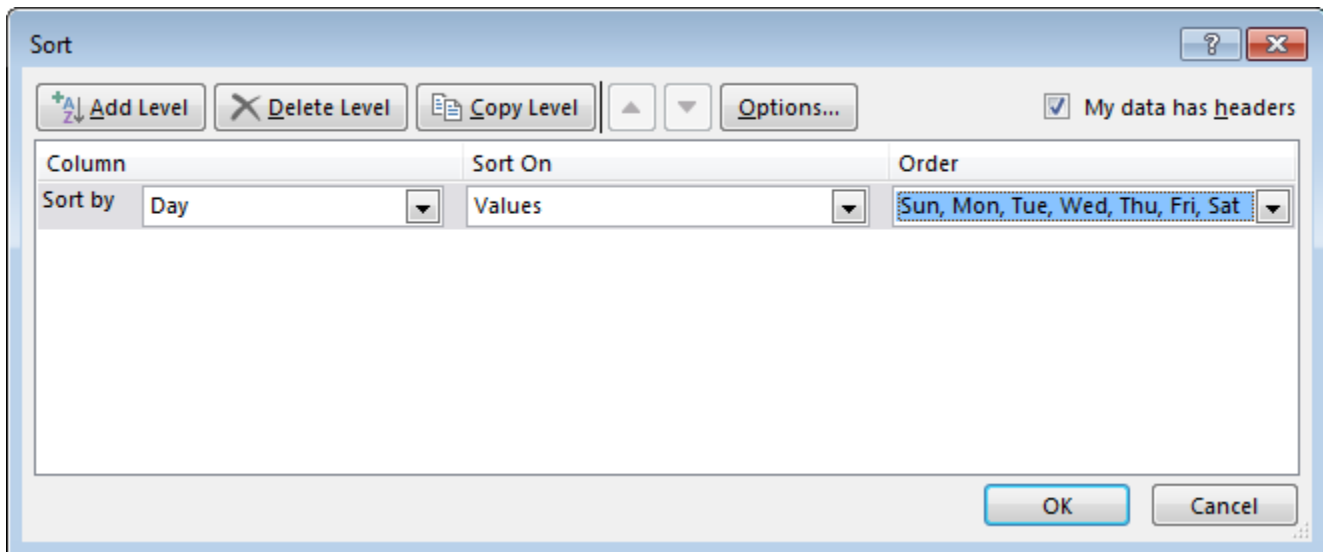
2. Select ALL of the data in these cells, including the column headers (titles)

3. On the ribbon click on the **Data** tab

4. Click on the **Sort** button to pop up the **Sort Dialog Box** (see image below)

5. Make these selections in the Sort Dialog Box:

- Sort by: **Day**
- Sort on: **Values**
- Order: **Custom List...** then **Sun, Mon, Tue, Wed, Thu, Fri, Sat** (this orders data by the day of the week)



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The sorted data should look like this where the Mondays are grouped together, etc.:

Salesman	Units Sold	Day
Jim	5	Mon
Mary	13	Mon
Jim	7	Tue
Mary	6	Tue
Jim	9	Wed
Mary	8	Wed

- Now temporarily filter out (hide) the data entries for **Tue**.
- Click inside any data cell in the above data group
- On the ribbon, click on the Data tab
- In **Sort & Filter** area, click **Filter**
- Click on the **Down Arrow** next to the **Day** column heading, uncheck the box for **Tue** then click on the **OK** button
- Notice that the two rows containing **Tue** are now hidden. Press **Ctrl-Z** to undo the filtering and display the **Tue** entries
- Subtotal the **Units Sold** by day (Mon, Tue, Wed)
- Now change the Units Sold subtotal to an **average** instead of a sum for each day
- Turn off subtotals (Hint: Click on a data cell -> click on Subtotal -> Remove All)
- Highlight the data under the **Units Sold** column and click on **Conditional Formatting** -> Select **Highlight Cells Rules** -> **Greater Than...** -> 7 -> with Light Red Fill with Dark Red Text
Select **Highlight Cells Rules** -> **Less Than...** -> 7 -> with Light Green Fill with Dark Green Text
Select **Highlight Cells Rules** -> **Equal To...** -> 7 -> with Light Yellow Fill with Dark Yellow Text
- Turn off **Conditional Formatting** (Hint: Select only the data cells -> **Conditional Formatting** -> **Clear Rules** -> **Clear Rules from Selected Cells**)
- Format your data cells and header columns as a light orange table. (Hint: Select the cells -> **Format as Table** -> **Table Style Light 14**)

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