



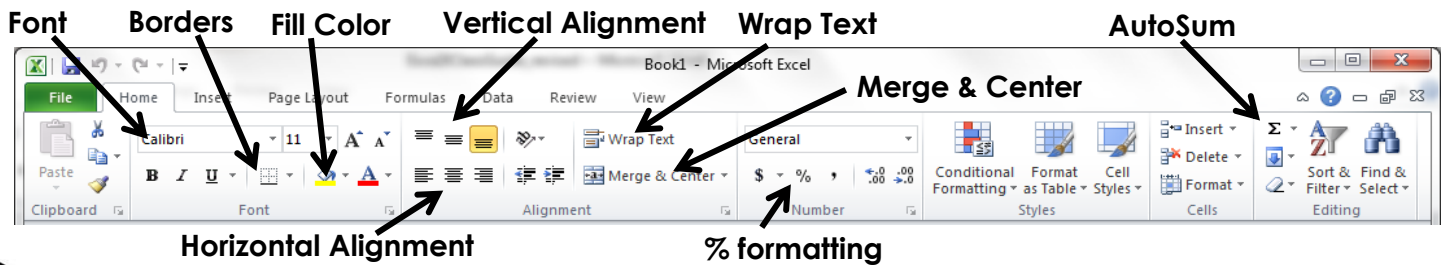
# Excel 2: Formulas, Charts, & More Class Guide

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## Part 1: Excel 1 Recap

### 1.1 Formatting Refresher

Below is a picture of the Home tab of the Ribbon which contains most, but not all, of the features we'll go over in class today.



➤ Class Exercise: On the Grand Opening Contacts spreadsheet in Excel2Class Spreadsheets.xlsx...


1. Spruce up the spreadsheet with colors and borders
2. **Merge & Center** the "Grand Opening Contact List" across the top of the table
3. Widen columns A, B, C, and H

## Part 2: Sorting & Filtering

### 2.1 Sorting

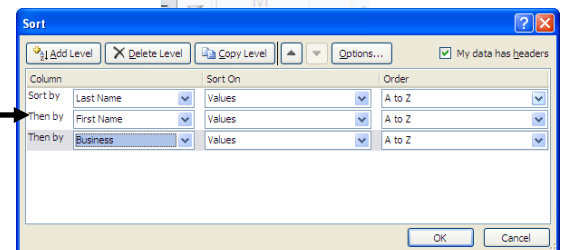
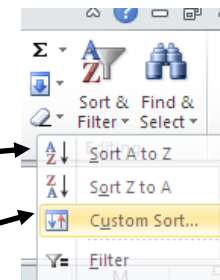
You can easily sort your data alphabetically, chronologically, or numerically...and even by color. Sorting can be *Ascending (A-Z)* or *Descending (Z-A)*. **If you have a Header Row (a top row that labels the data of your table), it is a good idea to format this row to stand out from your actual data.**

➤ Class Exercise: On Grand Opening Contacts...

1. Place the cell pointer on one of the last names in column A.
2. Click on **Sort & Filter** and then 

➤ Class Exercise: On Grand Opening Contacts...

1. Place the cell pointer on any cell within A4 to K26
2. Click on **Sort & Filter**→**Custom Sort**
3. Choose to sort by **Last Name** and then **First Name** and then **Business** on the window that pops up.
4. Click **OK**.



➤ Class Exercise: On Grand Opening Contacts...

1. Change the background color of 5 Last Name cells (that are not all next to each other alphabetically) and then click on just one cell in your table
2. Click on **Sort & Filter**→**Custom Sort**

3. Add another level and make sure it is at the top. Sort it by **Last Name** and sort on **Color**. Choose the **Order** and click **OK**

**NOTE:** You can also sort horizontally if needed by clicking on **Options** in the Sort box and then choosing the **Sort left to right** orientation.



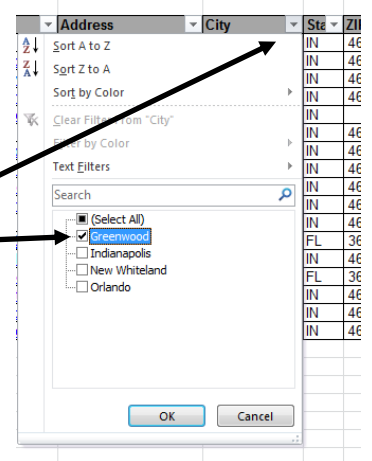
## 2.2 Filtering

Filtering is a quick and easy way to hide data so that you can see only the relevant data you need. It is a cinch to turn off and on.

**Class Exercise:** On Grand Opening Contacts...  
Place the cell pointer on any cell within A4 to K26

1. Click on **Sort & Filter** → **Filter**
2. On the spreadsheet, click on the down arrow to the right of City and select only Greenwood to limit your list.
3. Click **OK**

To turn off filtering, simply click on **Sort & Filter** → **Filter**



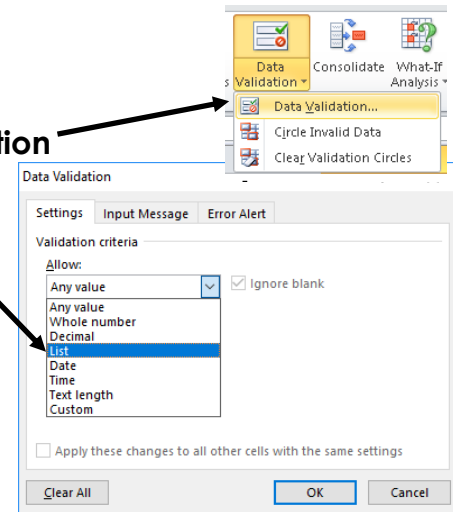
## Part 3: Data Validation

### 3.1 Dropdown Lists

Dropdown lists can be a great help if you want to make sure only certain data is entered into a field. There are a couple ways to create a dropdown list: type in the values yourself or use a preexisting table.

**Class Exercise:** On Grand Opening Contacts...

1. Highlight cells **H4 to H26**
2. Click on the **Data** tab and then **Data Validation** → **Data Validation**
3. Under Allow, click the dropdown arrow and choose **List**
4. Click the **Collapse Dialog** button and go to the **Cities** sheet
5. Highlight **A1 to A4** and click the **Collapse Dialog** button
6. Click **OK**
7. On the **Grand Opening Contacts** sheet, locate the cells in Column H that have "New Whiteland" and change those cities to Whiteland using the dropdown list
8. Try typing "Indy" in a cell that has Indianapolis and see what happens



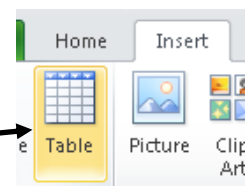
## Part 4: "Official" Tables

### 4.1 Format as Table

To make life easier you can "official" mark your table as a Table in Excel. This will help down the road if you add in new rows, delete columns, etc. Also, you won't have to worry as much about changing cell references in Functions in the future.

**Class Exercise:** On Grand Opening Contacts...

1. Place the cell pointer on any cell within A4 to K26
2. Click the **Insert** tab of the Ribbon and then **Table**
3. Click **OK** on the little Create Table window that pops up (or change the cell references if they are incorrect first)



- Change the default name of your table by going to the **Table Tools** tab and looking at the **Table Name** on the far left. Erase the current name and type in "Contacts"
- Press **Enter**

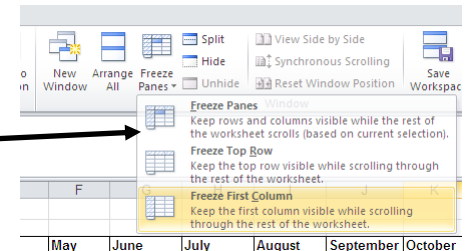
## Part 5: Altering Your View

### 5.1 Freezing Panes

You can freeze panes—sections of the spreadsheet—so you can easily view them even when you scroll up and down/left and right. Freezing Panes does not affect how your spreadsheet prints.

 **Class Exercise: On Grand Opening Contacts...**

- Click on cell **A4**
- Click on the **View** tab of the Ribbon
- Click on **Freeze Panes** → **Freeze Panes**
- Now scroll down and see if Rows 1-3 stay in place  
Click on **Freeze Panes** → **Unfreeze Panes** to turn this feature off



## Part 6: Formulas & Functions

### 6.1 Formula Basics

Formulas are equations that perform calculations on values in your spreadsheet and always start with an equal sign (=). Here are the symbols/operators for simple calculations:

**+ Addition - Subtraction \* Multiplication / Division**

**Ordering** = Excel calculates from left-to-right with multiplication and division always completed first [use ( ) to change this order]

**Copying Formulas** = You can copy & paste or use AutoFill to easily copy formulas from cell to cell.

### 6.2 Function Basics

Functions are prewritten formulas—you just need to supply the value(s) and not the operator(s). The same rules for formulas apply to functions. Some other info:

- ❖ You can calculate *ranges of cells* using the colon (:)
- ❖ You can use a comma (,) to separate cells you want to include that are not in a range
- ❖ If you don't highlight what cells you want to include in a function, Excel automatically looks above the cell you're in to locate numbers. If nothing is there, it will look to the left then the right.

 **Class Exercise: AutoSum**  $\Sigma$  is the function we used in Excel 1. *On the Widget Sales Data spreadsheet...*

- Select **Row 15** and click **Wrap Text** in the Ribbon
- Click on cell **B13**
- Click on the **AutoSum** shortcut at the top right
- Click the checkmark at the top or press **Enter**
- Tally the rest of the months as well as column N using AutoSum (and AutoFill)
- Use AutoSum in cells **N4** to **N12** to tally each widget type

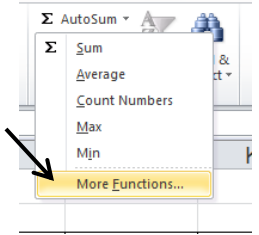
**NOTE:** If ##### appears in a cell, widen the column so the number will fit.

**HINT:** You can automatically widen all columns in your spreadsheet. Here's how:

- Click on the empty *gray rectangle* to the left of column A
- Click on **Format**→**Autofit Column Width**

### 6.3 MAX, AVERAGE, & Percentage

We will explore other functions (there are hundreds of them!) as well as create a percentage formula. You can get to all functions in Excel by clicking on **AutoSum**→**More Functions** or by clicking on the **Formulas** tab of the Ribbon (be sure to not be on a cell that has a function in it when you do this).



#### ➤ *Class Exercise: On Widget Sales Data...*

1. Put the cell pointer on **B16**
2. Click on the **arrow next to AutoSum** near the top
3. Find the **MAX** listing and click on it
4. Next, a formula will show up in your spreadsheet with cells Excel thinks you want to use
5. Change the cell references to **B4 through M4** by typing that in or highlighting those cells
6. Click the checkmark or press **Enter**
7. Calculate the MAX monthly sales figure for the other colors plus the Total using Autofill

#### ➤ *Class Exercise: On Widget Sales Data...*

1. Put the cell pointer on **C16**
2. Click on the **arrow next to AutoSum** near the top
3. Find the **AVERAGE** listing and click on it
4. Next, a formula will show up in your spreadsheet with cells Excel thinks you want to average. They are not the correct ones, so highlight cells **B4 through M4**.
5. Press **Enter** or click the checkmark
6. Calculate the AVERAGE number for the other colors plus the Total using Autofill

#### ➤ *Class Exercise: On Widget Sales Data, we will figure each color's Average Monthly Sales percentage of the Average Monthly Total.*

1. Put the cell pointer on **D16**
2. Type **=c16/c25** and press **Enter**
3. Format the result to a percentage by clicking on the **%** in the Number area of the Home tab ribbon
4. Try to copy this formula into cell **D17**. You will notice that this will not work since Excel will change the **Relative Reference** from cell C25 down to C26 which is blank. To get copying and pasting to work, we'll redo our percentage formula so that the reference to C25 is partially **ABSOLUTE** instead of all **RELATIVE**.
5. Go back to cell **D16** and type **=c16/c\$25**
6. Copy and paste the formula into cells **D17 through D24**

There may be occasions when you need an **Absolute Cell Reference** (or a combination of Relative and Absolute) so that one or more of the cells in your formula or function never change...or only change by column or row. "\$" symbols indicate an absolute reference.

Example	When copied...
=a4/\$b\$3	A4 can change; B3 will never change
=a4/\$b3	A4 can change; Column B will never change but Row 3 can
=a4/b\$3	A4 can change; Column B can change but Row 3 will not

## 6.4 COUNT

COUNT is one function from a group called *Count Functions*. Its goal is to add up the cells in a selected range that contain numbers (not text...just numbers).

➤ Class Exercise: *On the Widget Orders spreadsheet...*

1. Click on cell **B16**
2. Either type **=count(b4:b10)** or click on the arrow next to AutoSum and choose **Count Numbers** (and then highlight **B4:B10**)
3. Use AutoFill on cells **C16 to E16**.

## 6.5 COUNTIF

COUNTIF is a statistical function you can use to count the number of cells that meet a criterion. It is typed as **=COUNTIF(range, criteria)**.

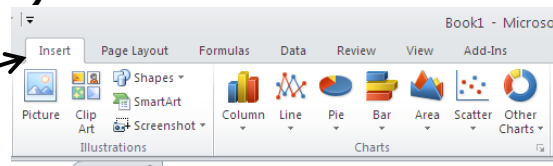
➤ Class Exercise: *On Cities and Grand Opening Contacts...*

1. Go to the *Cities* sheet first and copy cells **A1 to A4**
2. Go to *Grand Opening Contacts* and paste the cells starting at **M4**; widen column M
3. In cell **N4** type **=countif(h4:h27,m4)** and click the checkmark in the Formula Bar (you might notice that the h4:h27 reference is changed to Table[City] since we made this an official Table earlier in class)
4. Use Autofill to copy the function from cell N4 to **N5-N7**
5. Change some of the cities in column H and see who the numbers in column N change

## Part 7: Charts...As Easy As Pie (and Line and Bar...)

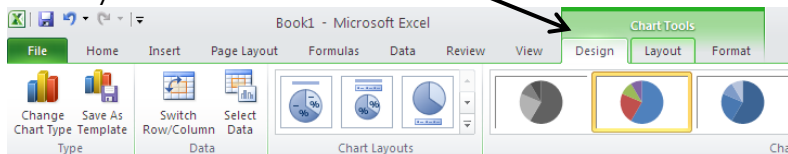
### 7.1 Charts

It is super easy to make charts of a table in Excel using the **Insert** tab menu. The exercise below will demonstrate this feature.



➤ Class Exercise: *Back on the Widget Sales Data sheet...*

1. Highlight the data range **A15 to B24** for our chart.
2. Click on the **Insert** tab and then **Column**. Choose the first **3-D Column** from the dropdown list.
3. Notice that three new **Chart Tools** tabs appear above the Ribbon. These will help you customize your chart.



4. Click on the **Layout** tab. Use the Chart Title, Legend, and Data Labels menu to change your chart if you would like.
5. Next, click on the **Move Chart** option on the **Design** tab which will give you the option to place your chart in a new worksheet. Let's do that!

## Part 8: Help!

### 8.1 MS Office Help



Excel has a help feature that can aid you in refreshing your memory on certain tasks or by even learning new tasks. Help can be reached by clicking the Question mark in the upper right hand corner. You will most likely be directed to Office.com's online help, but there is an offline version if needed.

### 8.2 Additional Help

Below are some websites that might be of help to you:

[www.greenwoodlibrary.us/computer-class](http://www.greenwoodlibrary.us/computer-class) - Lists all of the library's computer classes and includes the Excel guides and class spreadsheets.

[www.gcflearnfree.org](http://www.gcflearnfree.org) - A great collection of tutorials on a wide array of subjects including Microsoft Excel 2000-2016.

[www.free-training-tutorial.com](http://www.free-training-tutorial.com) - Free tutorial videos on Excel tasks (just be wary of clicking on the ads)

<http://spreadsheets.about.com/>

[www.customguide.com/cheat-sheets/](http://www.customguide.com/cheat-sheets/) - Free cheat sheets for most Office programs

[www.google.com/work/apps/business/products/sheets/](http://www.google.com/work/apps/business/products/sheets/) - You can use Google Sheets for free (after creating a Google account) to practice many of the Excel features we've used today.

You can also find help by searching for the function you want to use or the problem you're having using your favorite search engine.

## Thank you for coming!

Please fill out a program survey before leaving.

<http://www.greenwoodlibrary.us/programming-survey>

or go to [www.greenwoodlibrary.us](http://www.greenwoodlibrary.us) → Services & Programs → Adult Programming Survey  
*\*not Computer Survey\**

Program Attended: Excel 2