



## **Malteser Computer Training**

*Workshop 6: Excel and Google Spreadsheet*

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## Contents

1. What is a Spreadsheet? Why use it?	2
2. Interface	4
3. Cell Basics	5
4. Formatting your table	11
4.1. To change the width and height of columns and rows:	11
4.2. Inserting additional columns and rows to the data tables	13
4.3. Deleting rows and columns	15
4.4. Moving rows and columns	16
4.5. Wrapping Tool, Vertical and horizontal Align	17
4.6. Formatting Tools	20
4.6.1. Merging Cells	21
4.6.2. Text Formatting Tools	22
4.6.3. Number Formatting Tools	25
5. Using Formulas	29
6. Sorting and Rearranging Data i	33
6.1. Sorting Data in Spreadsheets	33
6.2. Freezing rows and columns	34
6.3. Filtering Data in Spreadsheets	35
6.4. Applying Multiple Filters	37
7. Charts	38
8. Adding Functions	
9. Adding Images	
10. Share, Protect, and Move Your Data	
10.1 Sharing Spreadsheets with Your Devices and Apps	45
10.2 Downloading Your Data	

# 1. What is Excel and Google Spreadsheet?

## Why use it?

**Microsoft Excel** allows you to store, organize and analyse different types of information. **Google Spreadsheet** is a web-based spreadsheet application developed by Google that functions like Excel.

Whether you're starting a budget, planning a garden/vacation, or creating an invoice spreadsheets are a great way to **organize information and calculate data**. Working with spreadsheets means *knowing the spreadsheets ribbons, being able to enter and format data, calculate totals & summaries using formulas and functions, highlight data that meets certain conditions, create simple reports & charts and many other.*

Knowing how to use and work with spreadsheets is **often required from an employee**. *Spreadsheets simplifies processing complex numbers and data, drawing statistics and analysis and to make business predictions based on certain data.* Also, it can actually be used for a variety of **everyday tasks**.

Below are few examples how you can use spreadsheets to:

### 1. Organize and store information



	A	B	C	D	E	F	G
1	Art Club Contact Information						
2	Name	Phone number	Email address	Date of birth	Age as of September 1st, 2011	Which days will your child be able to attend?	How will your child get home from Art Club?
3							
4	Ally Lannister	9199540303	lioness@email.com	8/12/2000		Monday, 11 Wednesday	I will walk him home.
5	Taniya Holt	9195556043	kholt@email.com	4/5/2001	10	Monday	He will be part of a carpool.
	Leopold Loeven	919-475-9340	aloeven@email.com	4/2/2002	9	Monday	I will pick him up by car.

### 2. Calculate budgets:



	A	B	C	D	E
1	<b>Classroom Budget: Fall 2012</b>				
2					
3	<b>Item</b>	<b>Price</b>	<b>Type</b>	<b>To be reimbursed?</b>	<b>Description</b>
4	New boombox	\$69.99	Other	No	
5	Rolling plastic bins	\$42.78	Storage	Yes	Will use for storing flat items-- sketchbooks, canvas
6	Pastels	\$71.80	Art Supply	Yes	
7	Tissues	\$31.23	Classroom Supply	No	
8	Clothespins	\$15.10	Classroom Supply	No	To use for hanging art to dry/display
9	Clothesline	\$21.14	Classroom Supply	No	To use for hanging art to dry/display
10	Water Colors	\$67.00	Art Supply	Yes	
11	<b>Total</b>	<b>\$319.04</b>			
12					
13					
14					
15	Budget for Fall	\$300.00		New Stools	
16	Budget for Spring	\$350.00		Price per unit	\$14.99
17	Total for 2012-13			# of Students	18
18				Total	
19					
20					
21					
22					
23					

### 3. Calculate statistics:

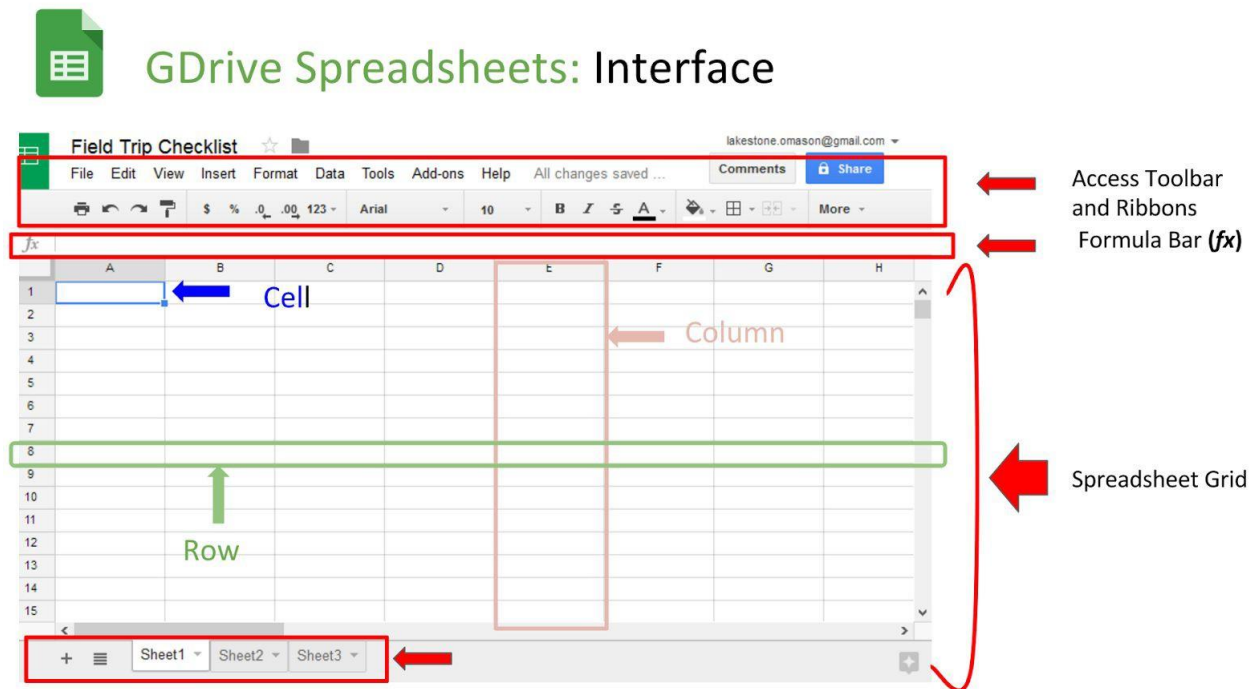
	A	B	C	D	E	F	G	H
1	<b>Exercise Log</b>							
2	<b>Date:</b>		<b>Day:</b>					
3		<b>EXERCISES</b>	<b>SET 1</b>	<b>SET 2</b>	<b>SET 3</b>			
4	<b>Upper Body</b>		<b>REPS</b>	<b>WEIGHT</b>	<b>REPS</b>	<b>WEIGHT</b>	<b>REPS</b>	<b>WEIGHT</b>
5	1.	Bench Press	14	65	12	75	10	80
6	2.	Bench Press ( Decline )	10	60	8	70	6	80
7	3.	Cable Cross	12	50	10	55	8	60
8	4.	Seated Row	20	50	15	60	10	80
9	5.	Upright Row	14	65	12	75	10	80
10	6.	Shoulder Press						
11	7.	Hammer Curls						
12	8.	Triceps Extension						
13	9.	Triceps Lift						
14								
15								
16								
17								

### 4. Creating invoices:

	A	B	C	D	E
1	<b>Valkarian Digital: IT Department Invoice Order Form</b>				
2					
3	<b>ITEM #</b>	<b>DESCRIPTION</b>	<b>QUANTITY</b>	<b>UNIT PRICE</b>	<b>TOTAL</b>
5	8413	Eforcity 100ft Cat5 Cat5e RJ45 Patch Ethe	30	5.00	150.00
6	2165	V082 VPN Router- 8-port switch	1	230.00	230.00
7	8759	HP ProLiant - ML350 G6 Special Server - 4	2	1,282.00	2,564.00
8	2189	Corsair XMS2 4 GB ; 2 x 2 GB Memory - D	8	57.00	456.00
9	5681	Lenovo H420 - 7752 - 4 GB RAM - 2.7 GHz	12	330.00	3,960.00
10	8970	Razer Naga Molten Special Edition - 17-bt	6	42.00	252.00
11					
12					
13					
14					
15					
16					
17					
18	<b>Total</b>				<b>7,612.00</b>
19					
20	Sales Tax: 7.5%				

## 2. Interface

There are **4 important areas** in Excel or Google spreadsheet:



**1. Quick Access Toolbar:** This is a place where all the important tools can be placed. Icons like Print, Undo, Redo etc. But you can access other features - *More* icon.

**2. Ribbon:** Ribbon is like an expanded menu where you can find all other excel options. It depicts all the features of Excel in easy to understand form. Since Excel has 1000s of features, they are grouped into several ribbons. The most important ribbons are – *File, Edit, View, Insert, Format, Data and Tools*.

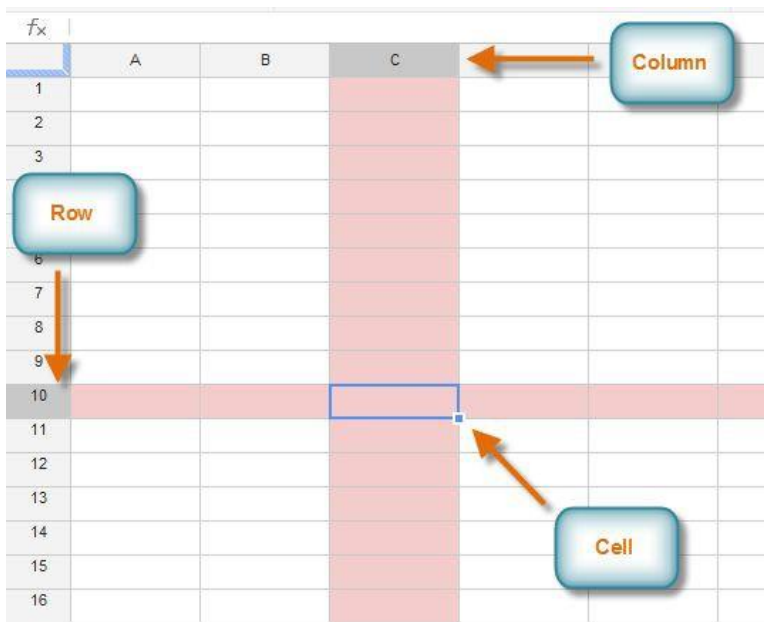
**3. Formula Bar:** This is where any calculations or formulas you write will appear. You will understand the relevance of it once you start building formulas.

**4. Spreadsheet Grid:** This is where all your numbers, data, charts & drawings will go. Each Excel file can contain several sheets. But the spreadsheet grid shows few rows & columns of active spreadsheet. To see more rows or columns you can use the scroll bars to the left or at bottom. If you want to access other sheets, just click on the sheet name (or use the shortcut CTRL+Page Up or CTRL+Page Down).

**(5.) Microsoft Excel also shows a Status bar:** This tells us what is going on with Excel at any time. You can tell if Excel is busy calculating a formula, creating a pivot report or recording a macro by just looking at the status bar. The status bar also shows quick summaries of selected cells (count, sum, average, minimum or maximum values). You can change this by right clicking on it and choosing which summaries to show.

Also, at the bottom of the grid you can find the **6. List of the sheets** included in your spreadsheet - it means you can work with more than one data sheet within single spreadsheet.

### 3. Cell Basics



Every spreadsheet is made up of thousands of rectangles, which are called **cells**. A cell is the **intersection** of a **row** and a **column**. Columns are identified by **letters (A, B, C)**, while rows are identified by **numbers (1, 2, 3)**.

Each cell has its own **name**, or **cell address**, based on its column and row. In this example, the selected cell intersects **column C** and **row 10**, so the cell address is **C10**. Note that a cell's column and row **headings** become **darker** when the cell is selected.

You can also select multiple cells at the same time. A group of cells is known as a **cell range**. Rather than a single cell address, you'll refer to a cell range using the cell address of the **first** and **last** cells in the cell range, separated by a **colon**.

For example, a cell range that included cells A2, A3, A4, A5, A6, A7 and A8 would be written as **A2:A8** (highlighted blue)

	A	B
1		
2	Date	Sales
3	5/6/2012	100
4	5/7/2012	121
5	5/8/2012	86
6	5/9/2012	\$25.00
7	5/10/2012	154
8	5/11/2012	110
9	5/12/2012	80

To select a cell - left-click on a cell in the spreadsheet grid *or* use arrow keys to navigate

the cell To select a cell range -

1. Click, hold, and drag the mouse until all of the cells you wish to select are **highlighted**.
2. Release the mouse to select the desired cell range.

Any information you enter into a spreadsheet will be stored in a cell. Each cell can contain several different kinds of content, including **text**, **formatting**, **formulas**, and **functions**.

Cell containing **text** means it contains letters, numbers and dates:

	A	B	C
1	Date	Sales	Percentage of Total
2	5/6/2012	100	0.4
3	5/7/2012	121	0.75
4	5/8/2012	86	0.21
5	5/9/2012	25	0.15
6	5/10/2012	154	0.88
7	5/11/2012	110	0.68
8	5/12/2012	80	0.45
9			

Cells containing **formatting attributes** means attributes that change the way letters, numbers, and dates are displayed, e.g. percentages can appear as **0.15 or 15%** and **currencies as \$**. You can even change a cell's **background color**.

	A	B	C
1	Date	Sales	Percentage of Total
2	May 6	\$100.00	40%
3	May 7	\$121.00	75%
4	May 8	\$86.00	21%
5	May 9	\$25.30	15%
6	May 10	\$154.00	88%
7	May 11	\$110.00	68%
8	May 12	\$80.00	45%

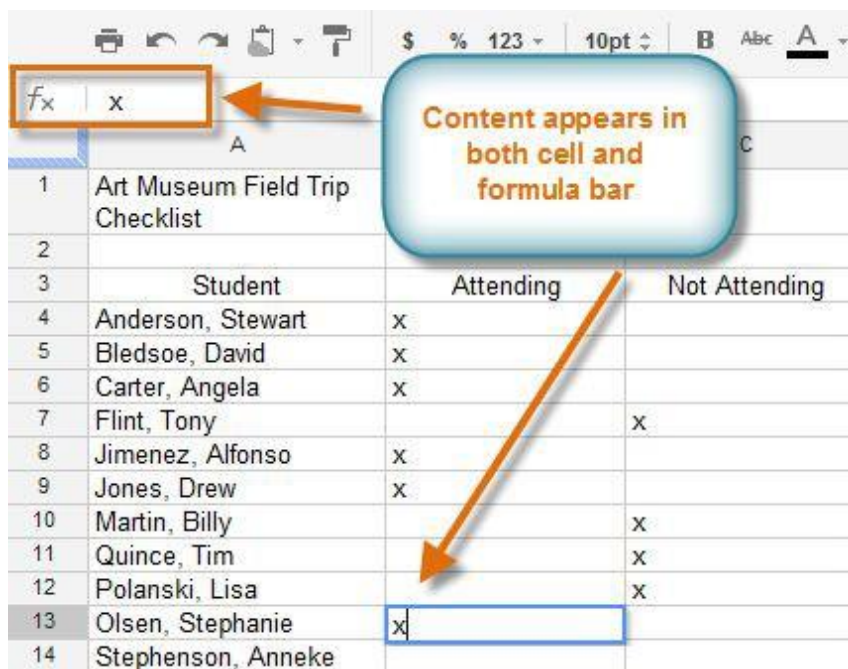
Cells can contain **formulas** and **functions** that calculate cell values. In our example, `SUM(B2:B8)` adds the value of each cell in cell range B2:B8 and displays the total in cell B9.

	A	B	C
1	Date	Sales	Percentage of Total
2	May 6	\$100.00	40%
3	May 7	\$121.00	75%
4	May 8	\$86.00	21%
5	May 9	\$25.30	15%
6	May 10	\$154.00	88%
7	May 11	\$110.00	68%
8	May 12	\$80.00	45%
9	Total Sales	\$676.30	
10			

To **insert content** into a cell:

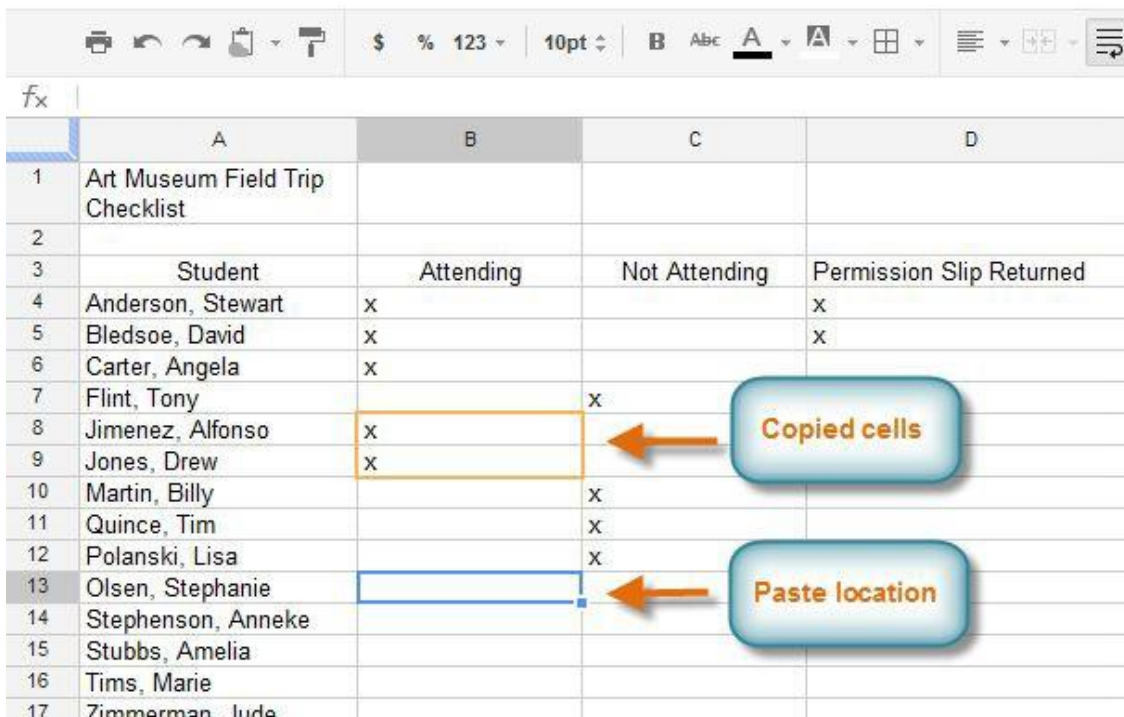
1. Select a desired cell
2. Type **content** into the selected cell, then press Enter. The content will appear in the **cell** and the **formula bar**. You can also input and edit cell content in the formula bar.
3. (Press the **Delete** or **Backspace** key on your keyboard if you need to delete content.)





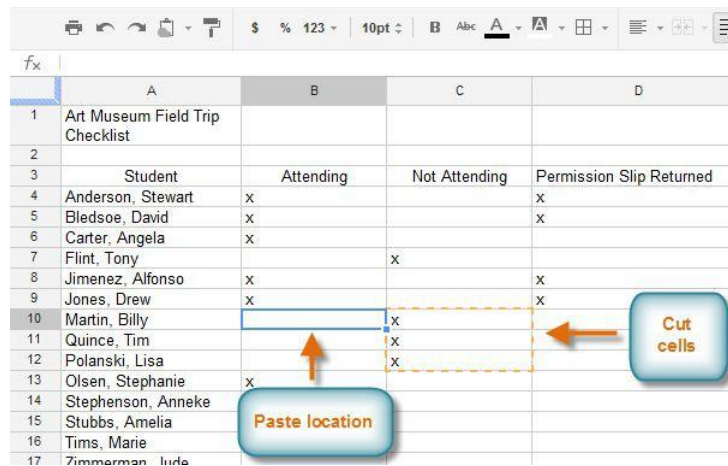
To avoid inserting the same data into the cell, you can copy, cut and paste data from one cell to another.

1. Select the cells you wish to copy.
2. Press **Ctrl+C** (Windows) or **Command+C** (Mac) on your keyboard to **copy** the cells.
3. Select the cell or cells where you wish to **paste** the cells. The copied cells will now have a box around them.
4. Press **Ctrl+V** (Windows) or **Command+V** (Mac) on your keyboard to **paste** the cells.



Unlike copying and pasting, which **duplicates** cell content, **cutting and pasting moves** content between cells.





1. Select the cells you wish to **cut**.
2. Press **Ctrl+X** (Windows) or **Command+X** (Mac) on your keyboard to cut the cells. The cell content will remain in its original location until the cells are pasted.
3. Select the cell or cells where you wish to **paste** the cells.
4. Press **Ctrl+V** (Windows) or **Command+V** (Mac) on your keyboard to **paste** the cells.

Rather than cutting and pasting, you can **drag and drop** cells to move their contents.

1. Select a **cell**, then hover the mouse over an **outside edge** of the blue box. The cursor will turn into a **hand icon**

2				
3	Student	Attending	Not Attending	Perm
4	Anderson, Stewart	x		x
5	Bledsoe, David	x		x
6	Carter, Angela	x		
7	Flint, Tony		x	
8	Jimenez, Alfonso	x		x
9	Jones, Drew	x		x
10	Martin, Billy	x		

2. Click, hold, and drag the cell to its desired location.

2				
3	Student	Attending	Not Attending	Perm
4	Anderson, Stewart	x		x
5	Bledsoe, David	x		x
6	Carter, Angela	x		
7	Flint, Tony		x	
8	Jimenez, Alfonso	x		x
9	Jones, Drew	x		x
10	Martin, Billy	x		

### 3. Release the mouse to **drop** the cell.

There may be times when you would like to copy the content of one cell to several other cells in your spreadsheet. You could **copy and paste** the content into each cell, but this method would be time consuming. Instead, you can use the **fill handle** to quickly copy and paste content from one cell to any other cells in the same row or column.

1. **Select the cell** you wish to use. A small square, known as the **fill handle**, will appear in the bottom-right corner of the cell.
2. **Hover the mouse over the fill handle**. The cursor will change to a **black cross**.
3. **Click, hold, and drag** the fill handle over the cells you wish to fill. A **dotted black line** will appear around the cells that will be filled.

Not Attending	Permission Slip Returned	Chaperon
	x	x
	x	
	x	
	x	x

### 4. Release the mouse to fill the selected cells

Not Attending	Permission Slip Returned	Chaperon
	x	x
	x	
	x	
	x	
	x	
	x	x
	x	
	x	
	x	
	x	
	x	
	x	

The fill handle can also be used to continue a **series**. Any time the content of a row or column follows a sequential order, like **numbers (1, 2, 3)** or **days (Monday, Tuesday, Wednesday)**, the fill handle will guess what should come next in the series. In our example on the left, the fill handle is used to extend a series of **dates** in a column.

	A	B
1	May 6, 2012	
2	May 7, 2012	
3	May 8, 2012	
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
21		

	A	B
1	May 6, 2012	
2	May 7, 2012	
3	May 8, 2012	
4	May 9, 2012	
5	May 10, 2012	
6	May 11, 2012	
7	May 12, 2012	
8	May 13, 2012	
9	May 14, 2012	
10	May 15, 2012	
11	May 16, 2012	
12	May 17, 2012	
13	May 18, 2012	
14	May 19, 2012	
15	May 20, 2012	
16	May 21, 2012	
17	May 22, 2012	
18	May 23, 2012	
19	May 24, 2012	
20	May 25, 2012	
21		

## Excel Exercise Sheat: Exercise 0 – Add content

1. Open the Excel Exercise sheat and open the Sheat „Add content“
2. Write and organise the following datas:  
**Name Ranges:** My Favourite Food, Country, Vegetarian  
**Datas:** Italy, U.S.A., Currywurst, Tomato Mozzarella, Beef Burger & Chips, Münchner Schnitzel, India, Great Britain, Germany, yes , no, Fisch and Chips
3. Create a new data table in the same spreadsheet
  - Enter a new Name Range “englisch-speaking countries
  - Copy the data from the column with Name Range “Country” from the previous table and paste it into a column of the new data table with the same name range
  - Enter the missing data; Use **Yes** or **No** to specify if the country’s mother tongue is English or not.

## 4.Formatting your table

By default, the cells and rows of every new spreadsheet are always the same size and data that you have entered may overflow the columns, cell and/or rows dimensions.

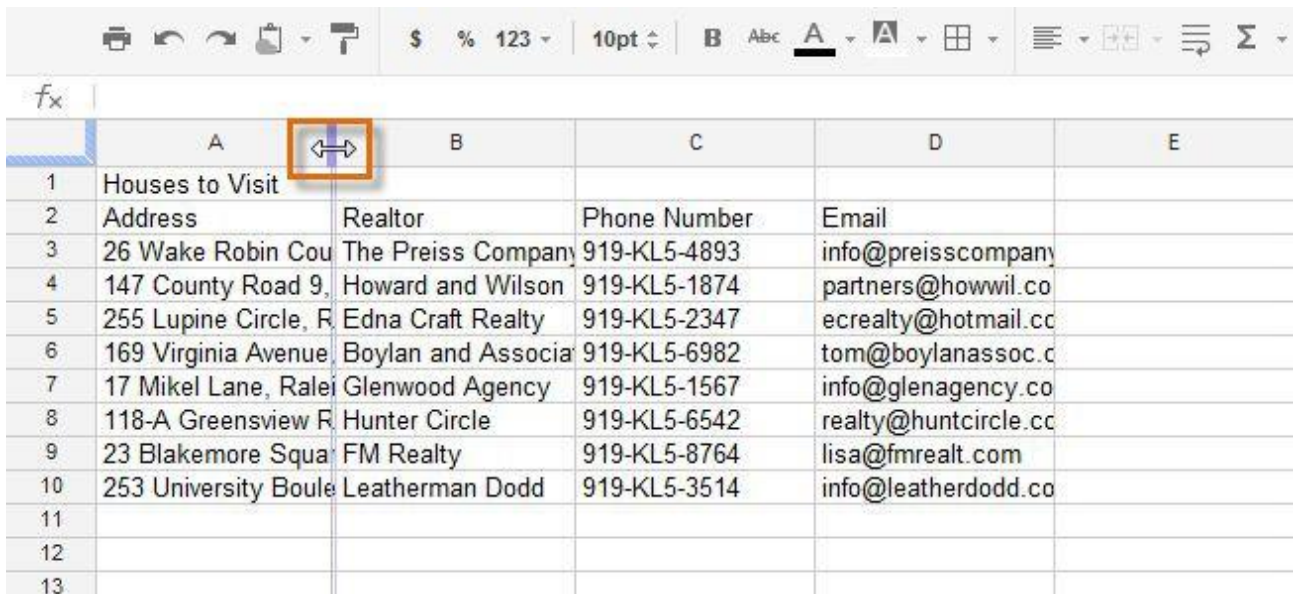
Once you begin entering information into your spreadsheet, it's easy to **customize** rows and columns to better fit your data into cells and rows and to make your spreadsheet better and easy to read.

You can:

- change the **height** and **width** of rows and columns
- **insert, move, delete,** and **freeze** rows and columns
- **wrap** and **merge** cells

### 4.1. To change the width and height of columns and rows:

1. To change the width of columns - **increase or decrease columns width**, hover the mouse over the border line between two columns until your cursor turns into a **double-arrow icon**.
2. Then **click, hold and drag** with your mouse **to the left or to the right** to **increase or decrease the width** of the adjacent columns:



The screenshot shows a spreadsheet with a toolbar at the top and a grid below. The toolbar includes icons for undo, redo, copy, paste, and other functions. The grid has columns labeled A through E and rows numbered 1 through 13. A double-headed arrow cursor is positioned on the border between column A and column B, indicating that the width of these columns is being adjusted. The data in the spreadsheet is as follows:

	A	B	C	D	E
1	Houses to Visit				
2	Address	Realtor	Phone Number	Email	
3	26 Wake Robin Cou	The Preiss Company	919-KL5-4893	info@preisscompany	
4	147 County Road 9,	Howard and Wilson	919-KL5-1874	partners@howwil.co	
5	255 Lupine Circle, R	Edna Craft Realty	919-KL5-2347	ecrealty@hotmail.co	
6	169 Virginia Avenue,	Boylan and Associa	919-KL5-6982	tom@boylanassoc.c	
7	17 Mikel Lane, Ralei	Glenwood Agency	919-KL5-1567	info@glenagency.co	
8	118-A Greensview R	Hunter Circle	919-KL5-6542	realty@huntcircle.cc	
9	23 Blakemore Squa	FM Realty	919-KL5-8764	lisa@fmreal.com	
10	253 University Boule	Leatherman Dodd	919-KL5-3514	info@leatherdodd.co	
11					
12					
13					



3. Release the mouse when you are satisfied with the new column width. All of the cell content is now visible.

**Double-clicking on the double-arrow** will adjust the columns width **automatically** to fit to the contents.

Same principle applies when adjusting the **height of the rows** as of adjusting the width of the columns described above:

	A	B	C	D
1	Houses to Visit			
2	Address	Realtor	Phone Number	Email
3	26 Wake Robin Court, Durham NC, 27705	The Preiss Company	919-KL5-4893	info@preiss.com
4	147 County Road 9, Wake Forest NC, 27605	Howard and Wilson	919-KL5-1874	partners@howardandwilson.com
5	255 Lupine Circle, Raleigh NC, 27606	Edna Craft Realty	919-KL5-2347	ecreality@hotmail.com
6	169 Virginia Avenue, Raleigh NC, 27502	Boylan and Associates	919-KL5-6982	tom@boylanassociates.com
7	17 Mikel Lane, Raleigh NC, 27603	Glenwood Agency	919-KL5-1567	info@glenwoodagency.com
8	118-A Greensview Road, Morrisville NC, 27735	Hunter Circle	919-KL5-6542	realty@huntercircle.com
9	23 Blakemore Square, Cary NC, 27610	FM Realty	919-KL5-8764	lisa@fmrealty.com
10	253 University Boulevard, Chapel Hill NC, 25403	Leatherman Dodd	919-KL5-3514	info@leathermadd.com
11				
12				
13				

Rather than resizing rows and columns individually, you can modify the height and width of every row and column in a spreadsheet at the same time using the **Select All** button. This method allows you to set a **uniform size** for the spreadsheet's rows and columns. In our example, we will set a **uniform row height**.

1. **Select all** columns and rows by clicking on the button in the top left corner

	A	B	C	D
1	Houses to Visit			
2	Address	Realtor	Phone Number	Email
3				
4	26 Wake Robin Court, Durham NC, 27705	The Preiss Company	919-KL5-4893	info@preiss.com
5	147 County Road 9, Wake Forest NC, 27605	Howard and Wilson	919-KL5-1874	partners@howardandwilson.com
6	255 Lupine Circle, Raleigh NC, 27606	Edna Craft Realty	919-KL5-2347	ecreality@hotmail.com
7	169 Virginia Avenue, Raleigh NC, 27502	Boylan and Associates	919-KL5-6982	tom@boylanassociates.com
8	17 Mikel Lane, Raleigh NC, 27603	Glenwood Agency	919-KL5-1567	info@glenwoodagency.com
9	118-A Greensview Road, Morrisville NC, 27735	Hunter Circle	919-KL5-6542	realty@huntercircle.com
10	23 Blakemore Square, Cary NC, 27610	FM Realty	919-KL5-8764	lisa@fmrealty.com
11	253 University Boulevard, Chapel Hill NC, 25403	Leatherman Dodd	919-KL5-3514	info@leathermadd.com
12				
13				

2. Hover mouse over the rows or columns border which you want to adjust - drag the double-arrow left or right (for columns) or up and down (for rows) or double-click on the double-arrow to adjust them automatically:

	A	B	C	D
1	Houses to Visit			
2	Address	Realtor	Phone Number	Email address
3				
4	26 Wake Robin Court, Durham NC, 27705	The Preiss Company	919-KL5-4893	info@preisscomp
5	147 County Road 9, Wake Forest NC, 27605	Howard and Wilson	919-KL5-1874	partners@howwil.
6	255 Lupine Circle, Raleigh NC, 27606	Edna Craft Realty	919-KL5-2347	ecrealty@hotmail
7	169 Virginia Avenue, Raleigh NC, 27502	Boylan and Associate	919-KL5-6982	tom@boylanasso
8	17 Mikel Lane, Raleigh NC, 27603	Glenwood Agency	919-KL5-1567	ecrealty@hotmail
9	118-A Greensview Road, Morrisville NC, 27735	Hunter Circle	919-KL5-6542	tom@boylanasso
10	23 Blakemore Square, Cary NC, 27610	FM Realty	919-KL5-8764	info@glenagency
11	253 University Boulevard, Chapel Hill NC, 25403	Leatherman Dodd	919-KL5-3514	lisa@fmreal.com
12				
13				

## 4.2. Inserting additional columns and rows to the data tables

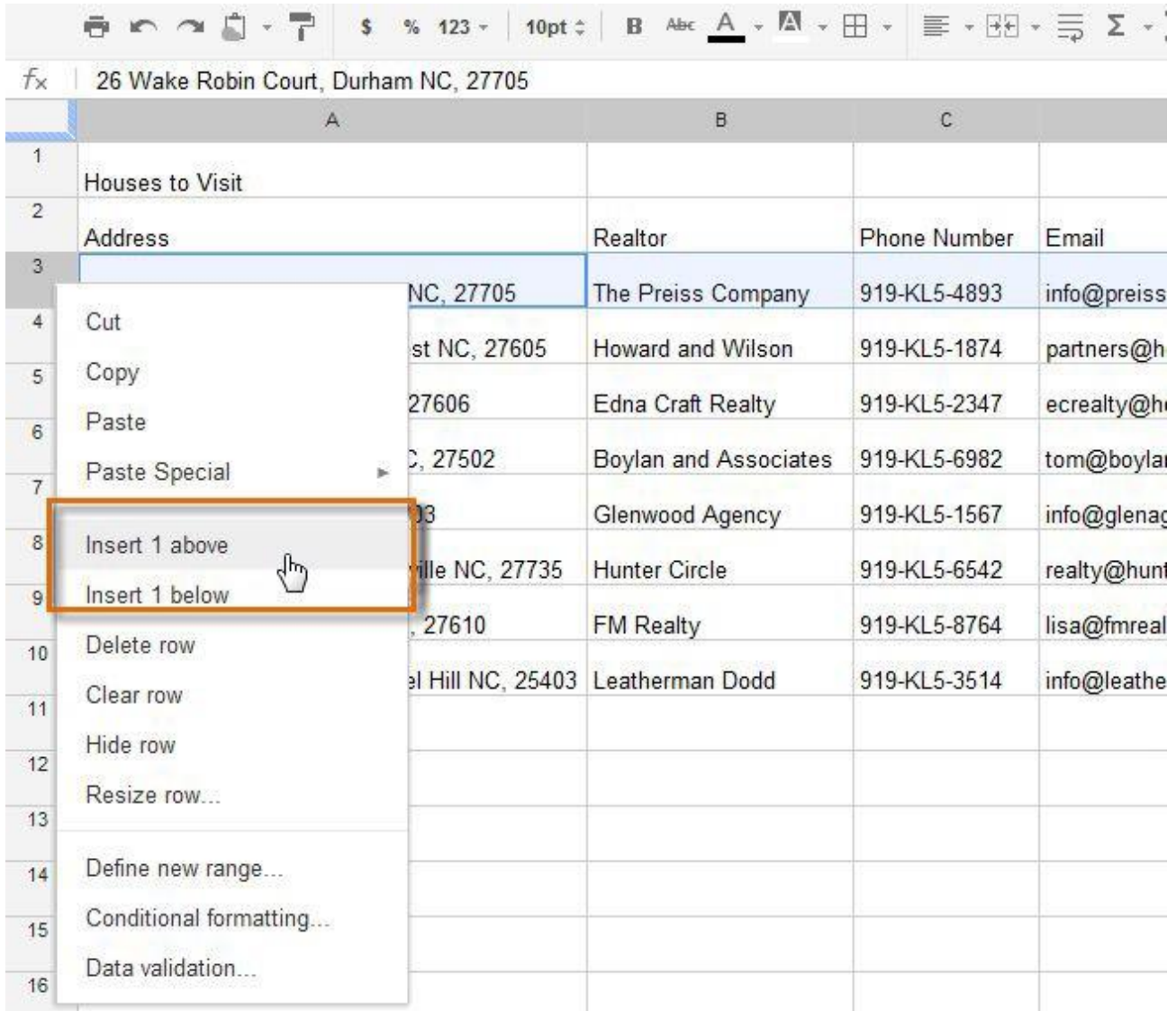
After you've been working with a spreadsheet for a while, you may find that you want to **add new** columns or rows, **delete** certain rows or columns, or even **move** them to a different location in the spreadsheet.

To **add new columns** to your table navigate your mouse to one of the columns headings - A, B, C etc and right-click:

	A	B	C	D
1	Houses to Visit			
2	Address			
3				
4	305 East Hargett Street, Garner NC, 2756		919-KL5-3218	contact@s
5	26 Wake Robin Court, Durham NC, 27705		919-KL5-4893	info@preis:
6	147 County Road 9, Wake Forest NC, 27		919-KL5-1874	partners@f
7	255 Lupine Circle, Raleigh NC, 27606		919-KL5-2347	ecrealty@f
8	169 Virginia Avenue, Raleigh NC, 27502		919-KL5-6982	tom@boyla
9	17 Mikel Lane, Raleigh NC, 27603		919-KL5-1567	info@glena
10	118-A Greensview Road, Morrisville NC, 2		919-KL5-6542	realty@hur
11	23 Blakemore Square, Cary NC, 27610		919-KL5-8764	lisa@fmrea
12	253 University Boulevard, Chapel Hill NC,		919-KL5-3514	info@leath
13				
14				
15				

Choose whether you want the column be added to the left or to the right - an empty column will appear according to your selection.

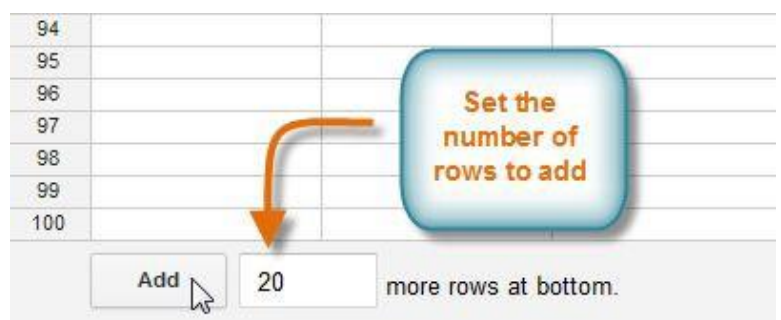
Same principle applies to **adding rows**. **Select a row** where you want to add a new row. Right- click on the row heading and choose whether you want to add a row above or below:



A new empty row will appear according to your selection.

**\*\*\* Spreadsheet Tip:**

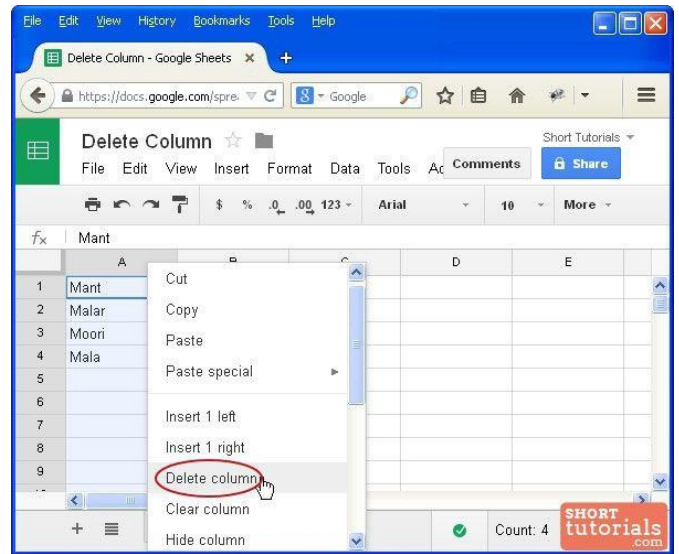
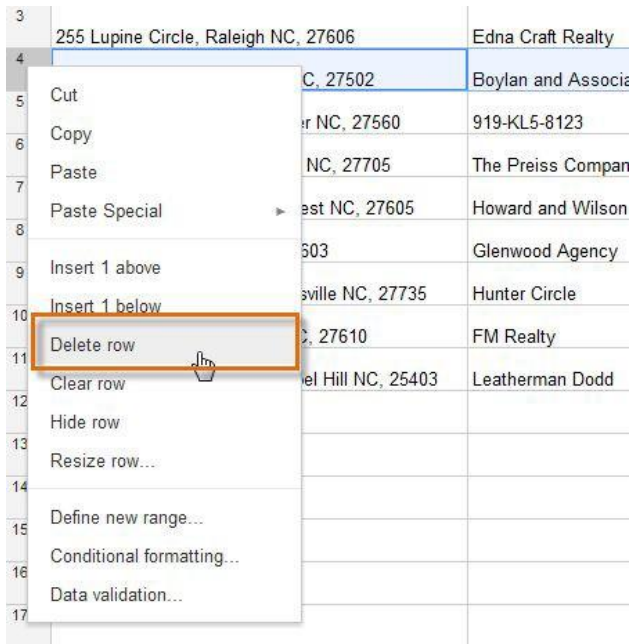
If you need to add more than one row at a time, you can scroll to the bottom of the spreadsheet and click the **Add** button. By default, this will add 20 new rows to your spreadsheet, but you can also set the number of rows to add in the text box.





### 4.3. Deleting rows and columns

It's easy to **delete** any row or column you no longer need in your spreadsheet. Navigate the **row heading** or **column heading**, **right-click** and choose the option **delete row/delete column**.




There's a difference between **deleting** a row or column and simply **clearing its contents**. If you want to remove the content of a row or column without causing the others to shift, right-click a heading, then select **Clear row** or **Clear column**.



fx   255 Lupine Circle, Raleigh NC, 27606	
	A B
1	Houses to Visit
2	Address Realtor
3	27606 Edna Craft Realty
4	er NC, 27560 Southern Wake Realty
5	NC, 27705 The Preiss Company
6	est NC, 27605 Howard and Wilson
7	603 Glenwood Agency
8	sville NC, 27735 Hunter Circle
9	C, 27610 FM Realty
10	el Hill NC, 25403 Leatherman Dodd
11	
12	
13	
14	
15	
16	

#### 4.4. Moving rows and columns

Sometimes you may want to **move** a column or row to make it more accessible in your spreadsheet.

1. Select the column you wish to move, then hover the mouse over the column heading. The cursor will become a **hand icon**  .
2. Click, hold, and drag the column to its **desired position**. An outline of the column will appear.
3. Release the mouse when you are satisfied with the new location.

	A	B	C	D
1	Houses to Visit			
2	Address	Asking Price	Realtor	Phone Number
3	305 East Hargett Street, Garner NC, 27560	\$120,000	Southern Wake Realty	919-KL5-8123
4	26 Wake Robin Court, Durham NC, 27705	\$212,000	The Preiss Company	919-KL5-4893
5	147 County Road 9, Wake Forest NC, 27605	\$98,000	Howard and Wilson	919-KL5-1874
6	255 Lupine Circle, Raleigh NC, 27606	\$315,000	Edna Craft Realty	919-KL5-2347
7	169 Virginia Avenue, Raleigh NC, 27502	\$520,000	Boylan and Associates	919-KL5-6982
8	17 Mikel Lane, Raleigh NC, 27603	\$452,000	Glenwood Agency	919-KL5-1567
9	118-A Greensview Road, Morrisville NC, 27735	\$155,000	Hunter Circle	919-KL5-6542
10	23 Blakemore Square, Cary NC, 27610	\$240,000	FM Realty	919-KL5-8764
11	253 University Boulevard, Chapel Hill NC, 25403	\$340,000	Leatherman Dodd	919-KL5-3514
12				

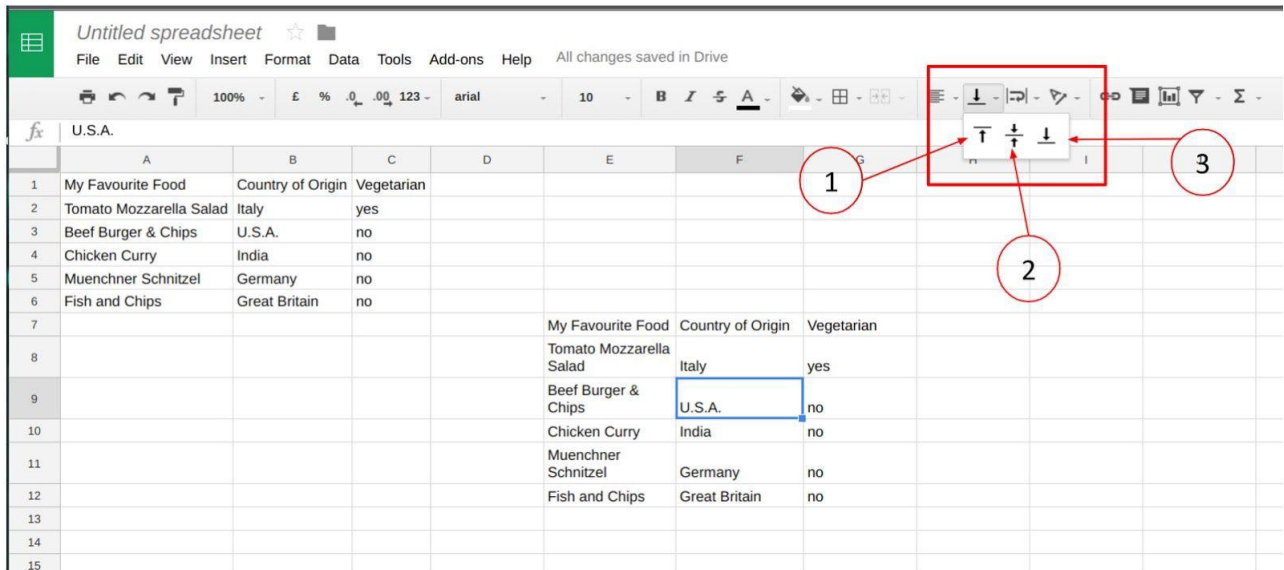
#### 4.5. Wrapping Tool, Vertical and horizontal Align

As you enter data into your spreadsheet, longer words and sentences may overflow the cell borders. To avoid that and to make your spreadsheet readable, **resize** your **columns** or use **wrapping tools** to fit in data within a cell. Select the cell and choose one of these options:

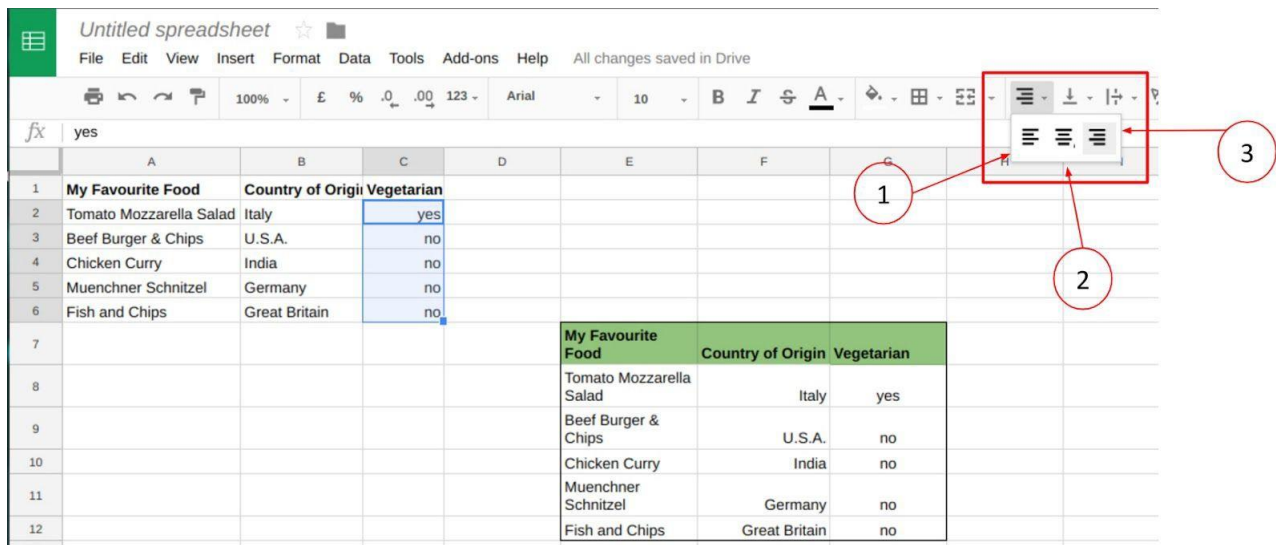
- 1) *Don't wrap, overflowing cell borders*
- 2) *Wrap within the cell, not overflowing the cell borders*
- 3) *Wrap within a cell, overflow - hidden*

	A	B	C
1	My Favourite Food	Country of Origin	Vegetarian
2	Tomato Mozzarella Salad	Italy	yes
3	Beef Burger & Chips	U.S.A.	no
4	Chicken Curry	India	no
5	Muenchner Schnitzel	Germany	no
6	Fish and Chips	Great Britain	no

Also Use vertical align tools to position your data in the cell. Select the cell and choose one of these options: 1) from the top; 2) in the centre or 3) from the bottom of the cell



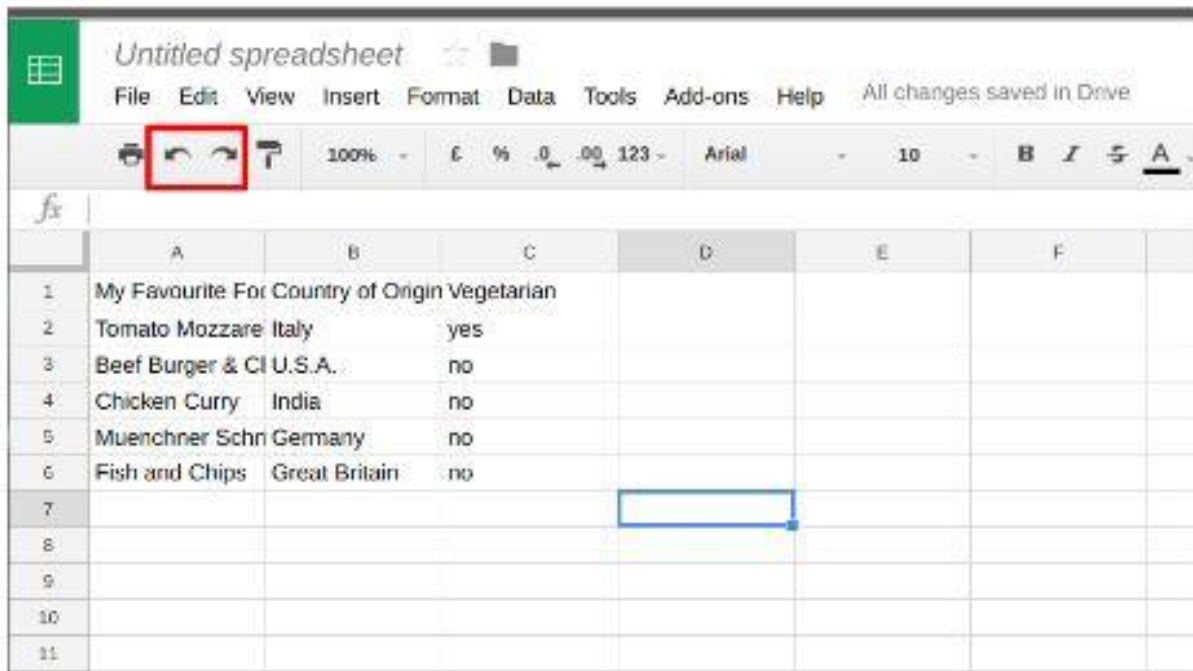
Use horizontal align tools to position your data in the cell. Select a cell and choose one of these options: 1) from the left; 2) in the centre or 3) from the right



\*\*\* Spreadsheet Tip:

To **undo the changes**, click on the **reverse arrow** ← in your spreadsheet toolbar.

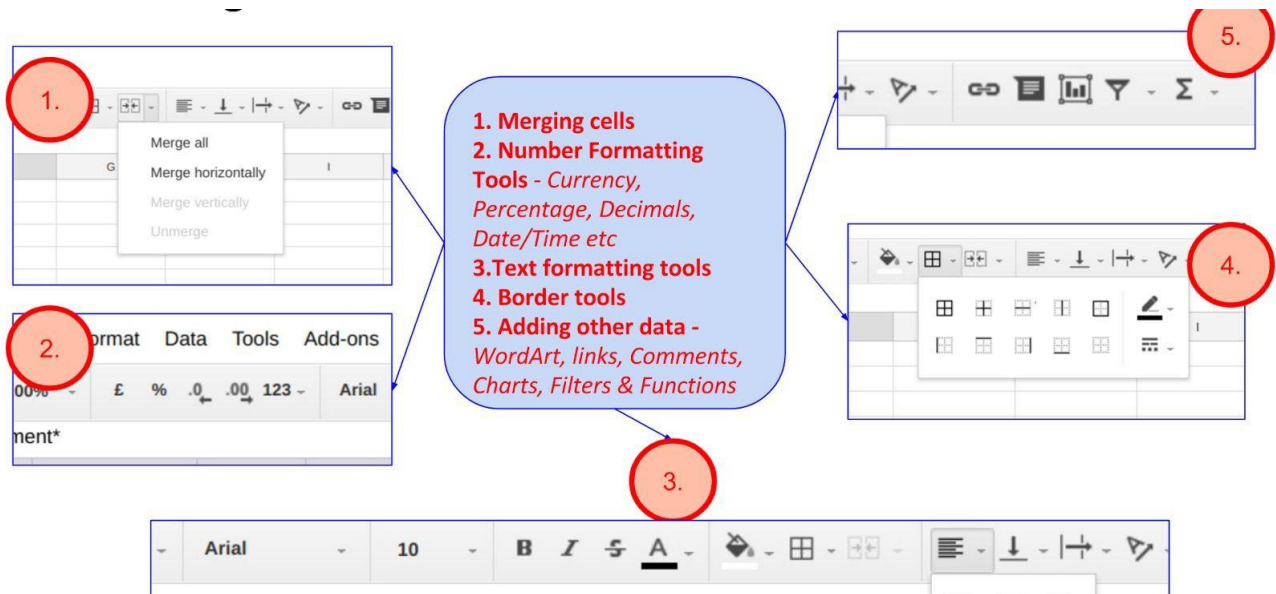
You can also choose the **forward arrow** → to re-apply the changes you've made to your spreadsheet again.



### 4.6. Formatting Tools

After you've added a lot of content to a spreadsheet, it can sometimes be difficult to view and read all of your information easily. **Formatting** allows you to customize the **look and feel** of your spreadsheet, making it easier to view and understand.

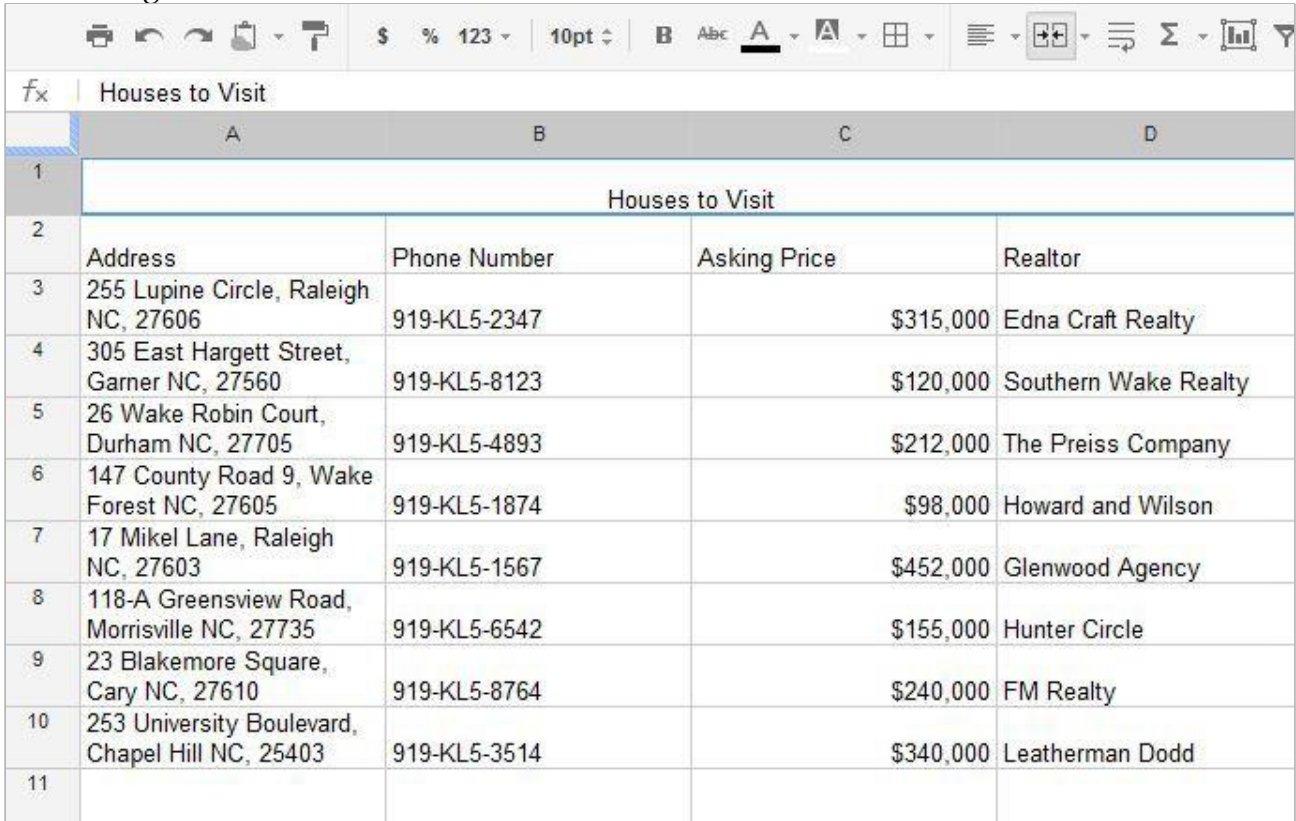
In your toolbar you can find these formatting tools:





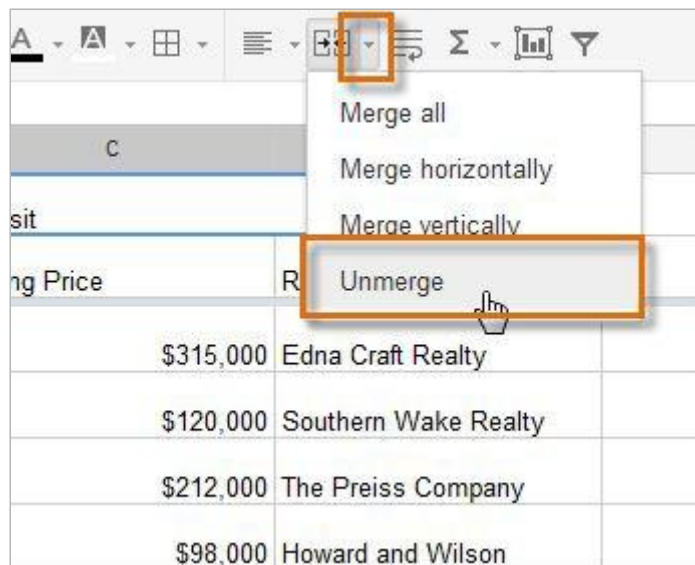
### 4.6.1. Merging Cells

1. **Merging cells** option allows you to unite two or more cells or cell ranges: in this case, the multiple cells become a single cell and contents will fit to the new format range:



Houses to Visit			
Address	Phone Number	Asking Price	Realtor
255 Lupine Circle, Raleigh NC, 27606	919-KL5-2347	\$315,000	Edna Craft Realty
305 East Hargett Street, Garner NC, 27560	919-KL5-8123	\$120,000	Southern Wake Realty
26 Wake Robin Court, Durham NC, 27705	919-KL5-4893	\$212,000	The Preiss Company
147 County Road 9, Wake Forest NC, 27605	919-KL5-1874	\$98,000	Howard and Wilson
17 Mikel Lane, Raleigh NC, 27603	919-KL5-1567	\$452,000	Glenwood Agency
118-A Greensview Road, Morrisville NC, 27735	919-KL5-6542	\$155,000	Hunter Circle
23 Blakemore Square, Cary NC, 27610	919-KL5-8764	\$240,000	FM Realty
253 University Boulevard, Chapel Hill NC, 25403	919-KL5-3514	\$340,000	Leatherman Dodd

You can unmerge cells anytime and restore the previous format:



## 4.6.2. Text Formatting Tools

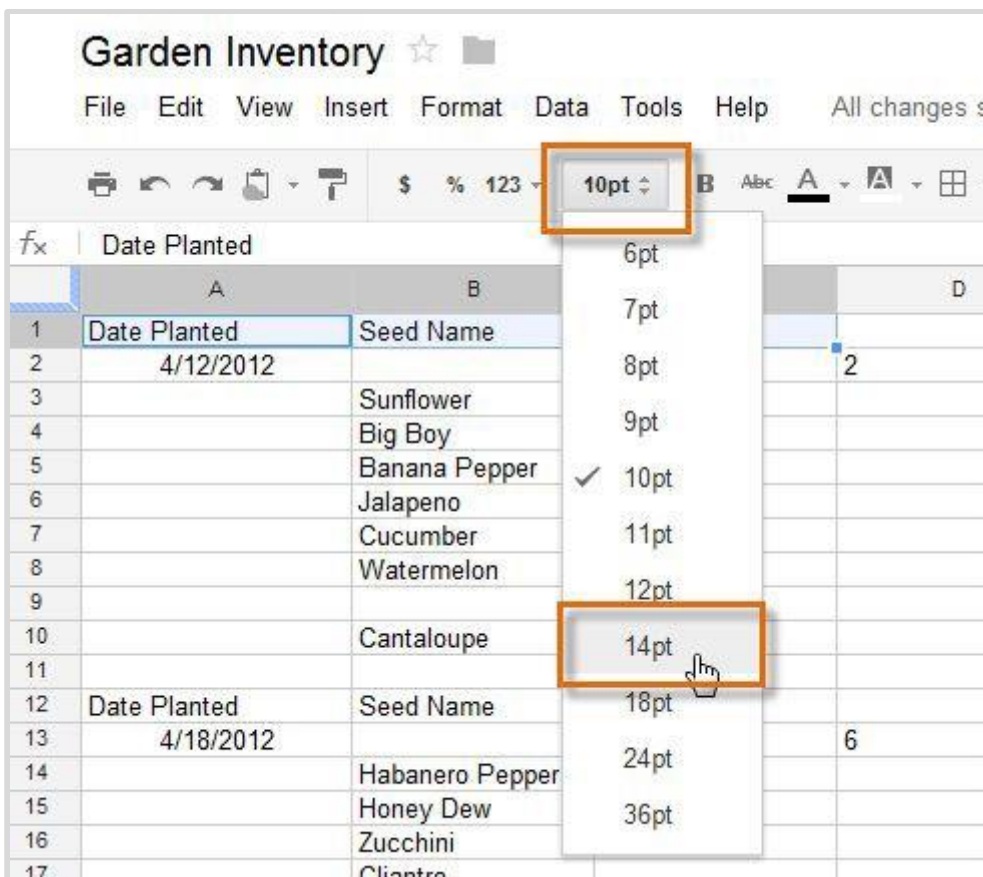
(You can also watch the [GCFLearn for free - Cells and Rows Formatting](#) video on the [YouTube](#) demonstrating how you can format data in your spreadsheet to make it look appealing, well sorted and with significant data highlighted)

All content in the cells is initially displayed in the same way - they have the same **format**. But you can modify the **size, style, and color of text** in your cells. You can also **set text alignments** and **add borders and background colors** to your cells.

At the top of an opened spreadsheet you can find the **Text Formatting Toolbar**:



1. Modifying the **font size** can help call attention to important cells and make them easier to read. It can be practical to increase the size of **header cells** to help distinguish them from the rest of the spreadsheet.

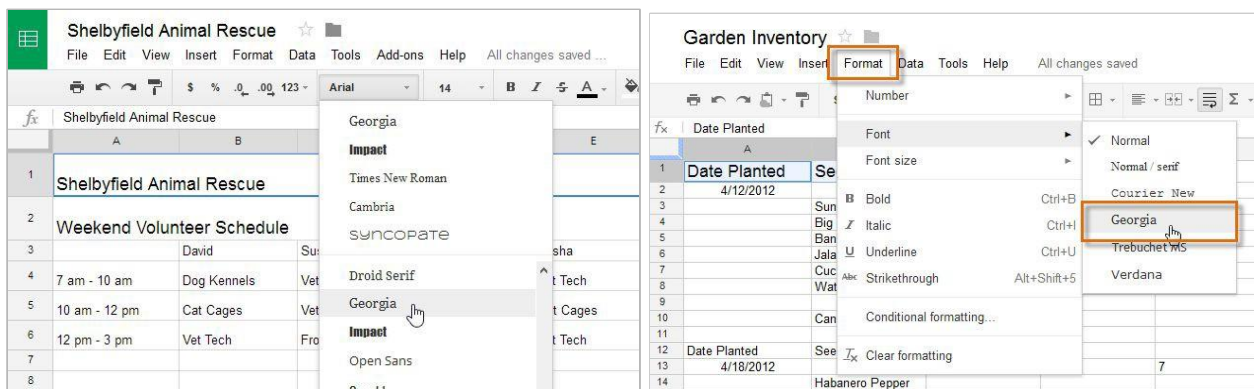


2. Choosing a different **font** can help to further separate certain parts of your spreadsheet, like the header cells, from the rest of your information. **Fonts** represent **different typographical styles of the letters and numbers**.

There are two ways to change fonts in Google Sheets:

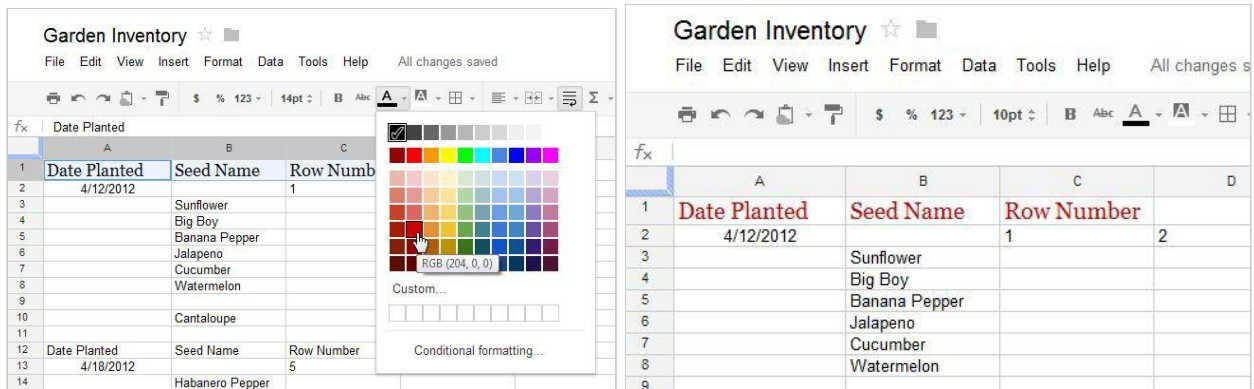
- 1) From the **Text Formatting Toolbar**

## 2) Finding Font List in the Format Ribbon



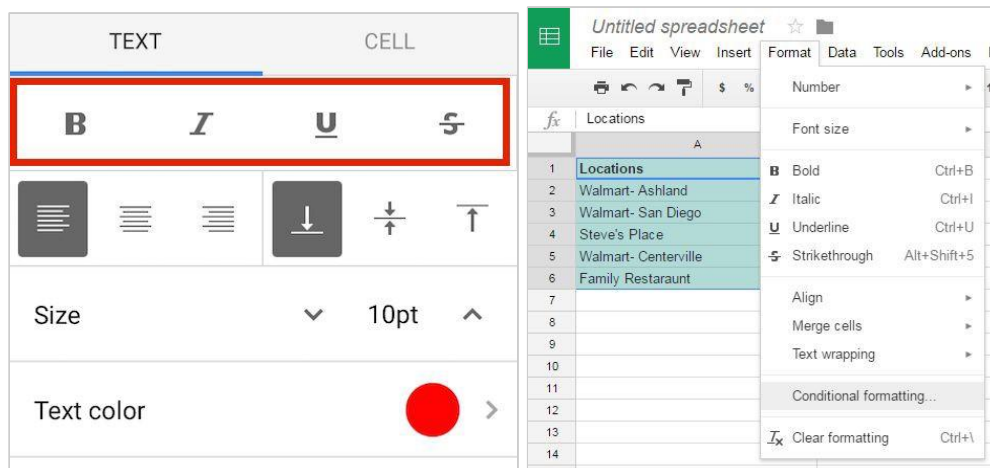
## 3. You can also change the text color like this:

- 1) Highlight the cells or text in the cells that you want to have a different text color
- 2) Choose the new color



## 4. Make your text appear **bold**/*italic*/underlined or ~~strike through~~:

- 1) Highlight the text you wish to appear bold
- 2) Choose the **bold**/*italic*/underlined or ~~strike through~~ option from the **Formatting Toolbar** or **Format Ribbon**:






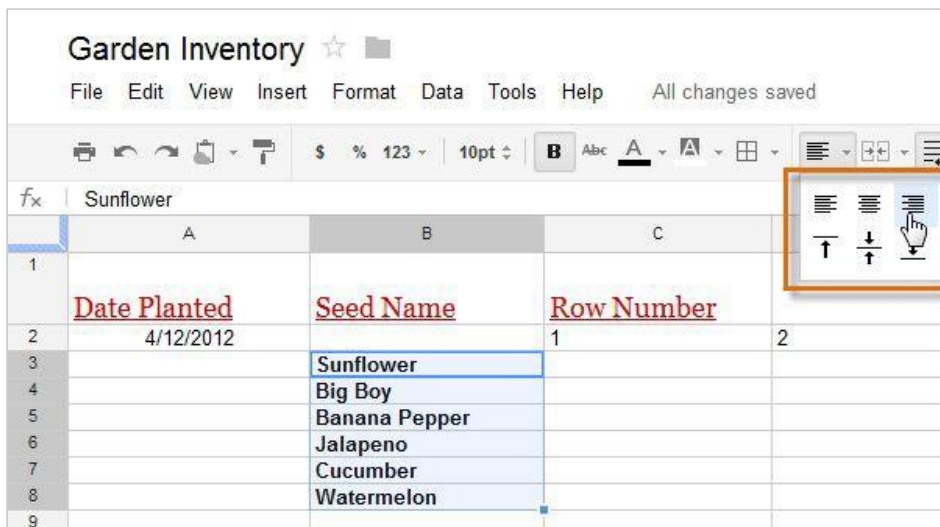
\* Press **Ctrl+I** (Windows) or **Command+I** (Mac) on your keyboard to add **italics**. Press **Ctrl+U**

(Windows) or **Command+U** (Mac) to add **underlining**.




5. Use Horizontal and Vertical Alignment Tools to display text in your cells:

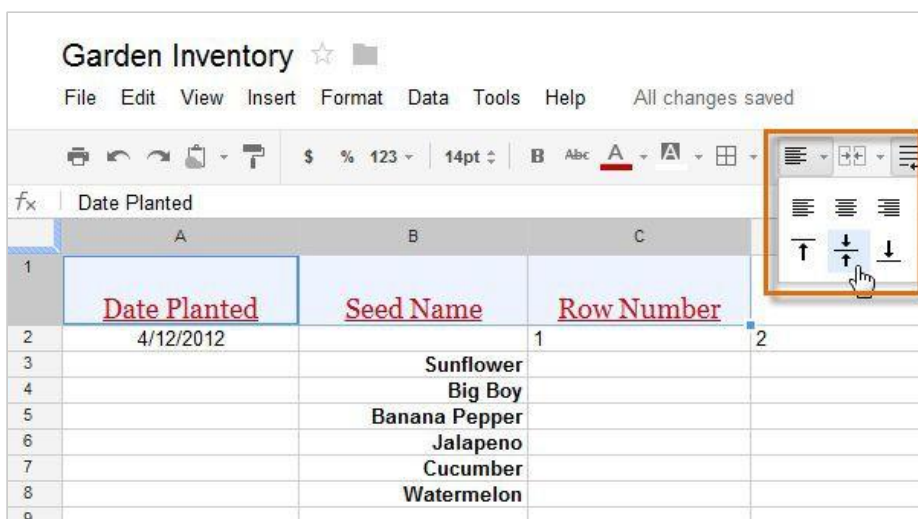
(Horizontal Align):

-  Horizontally from the Left (**Left Align**)
-  Horizontally in the Centre (**Centre Align**)
-  Horizontally from the Right (**Right Align**)



Or: (Vertical Align)

-  Vertically from the Top (**Top Align**)
-  Vertically in the Centre (**Centre Align**)
-  Vertically from the Bottom (**Bottom Align**)

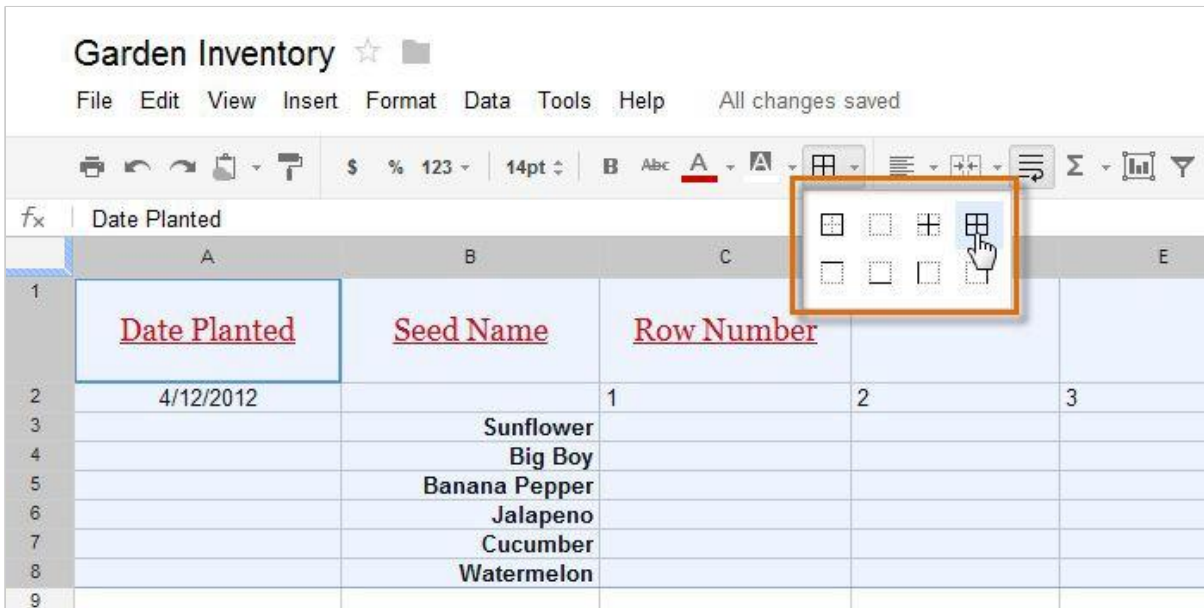




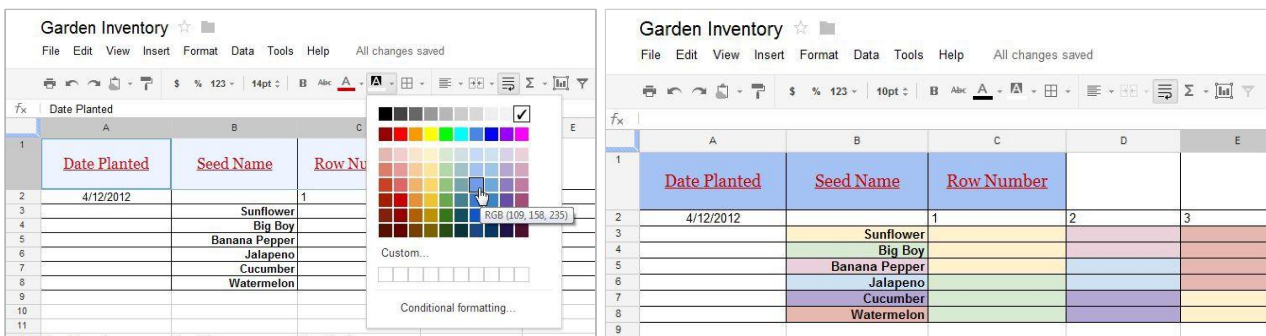
\* Feel free to apply **both** vertical and horizontal alignment settings to any cell.

6. Add **Borders** to your cells to separate different blocks of data:

- 1) Do not select cells or cell ranges to add borders to the whole spreadsheet
- 2) **Select cells or cell ranges to add borders specifically:**



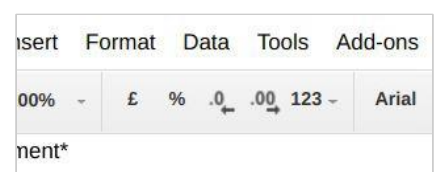
7. To make your data look well sorted and to highlight specific data in your spreadsheet you can also change the background color of any cell, row or cell range, which is known as the **text background color**.



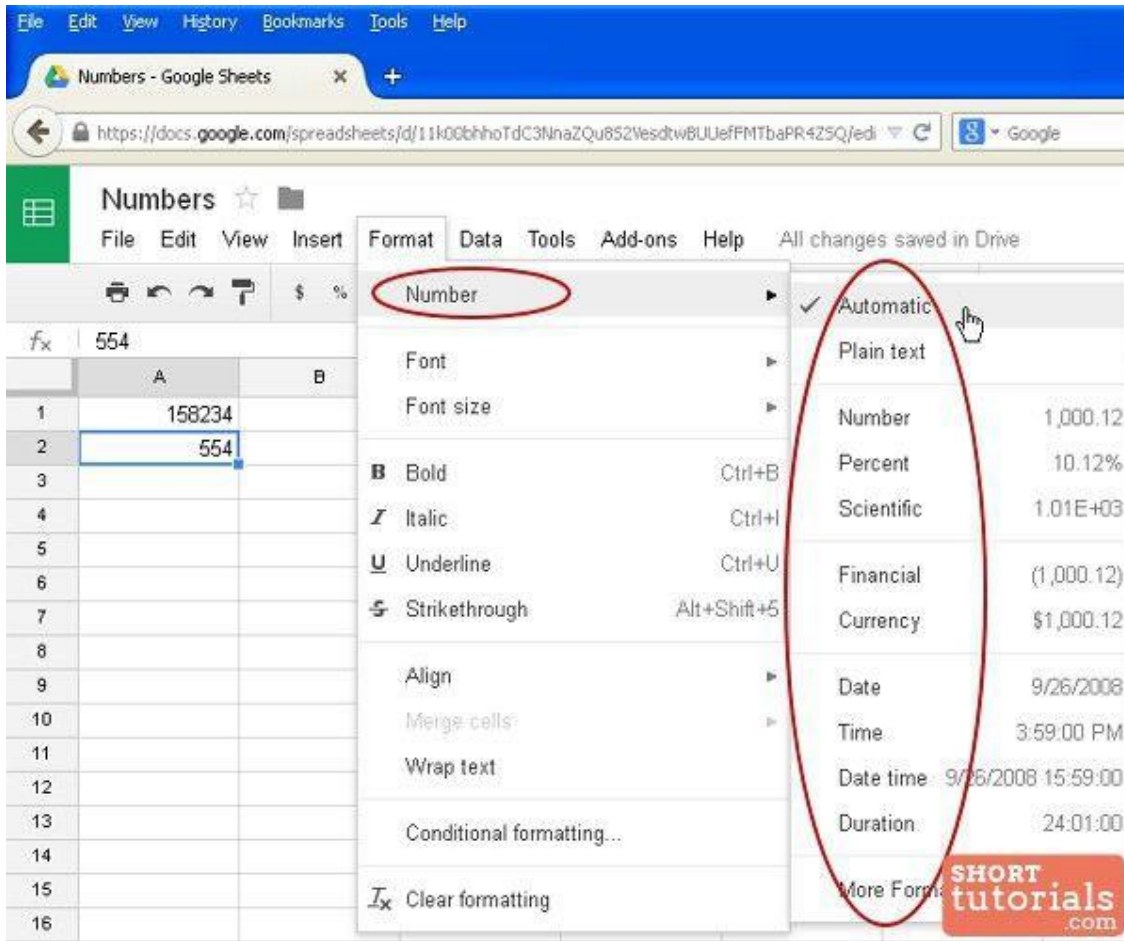
### 4.6.3. Number Formatting Tools

Instead of displaying all numeric content in the cells of your spreadsheet in exactly the same way, you can use formatting to change the appearance of **dates**, **times**, **decimals**, **percentages (%)**, **currency (\$)**, and much more.

To format numbers, dates, currencies and other numeric data, use tools from this menu in your GSpreadsheet **Number Formatting Toolbar**:



or **Format Ribbon:**



**Automatic (Normal)** number format is the **default setting** for every cell in a spreadsheet. Whenever you enter information into a cell, Google Spreadsheets will choose a formatting style **based on the content**.

By default, text will be left-aligned and numbers will be right-aligned.

one	
two	
three	
four	
five	
	1
	2
	3
	4
	5

In the **Number menu** you can represent your numbers as **Decimals** - with one or more zeroes after the comma, if you have numbers that are not whole numbers in your data spreadsheet:

- **Select 2 Decimals** to round a decimal to **the nearest hundredth**(18.16).
- **Select Rounded** to round a decimal to the nearest **whole number** (18).
- These two options are used to simplify decimals in your spreadsheet.
- Click **Custom Decimals...** to choose **specific rounding for decimals**. - Go to *“More Formats” Menu at the bottom of the Format Ribbon to set up custom decimals.*

**Financial** format of numbers can be applied for accounting purposes when working with a large amount of financial information.

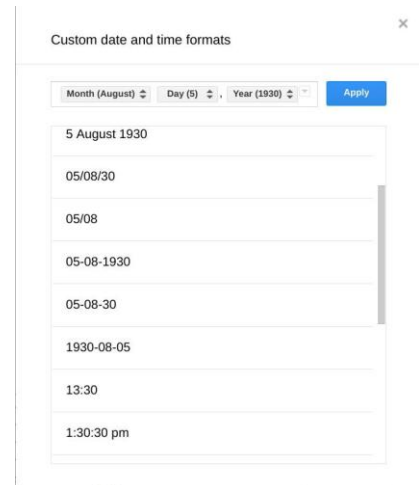
**Scientific** format of numbers allows to insert **scientific notation**. This is especially helpful when working with very large numbers. In our example, the large numbers followed by

many zeros are changed to the shorter, scientific format: 1.40E+22, 1.90E+23, and so on. By default, Google Spreadsheets will apply scientific formatting if a number is too large to display in a cell.

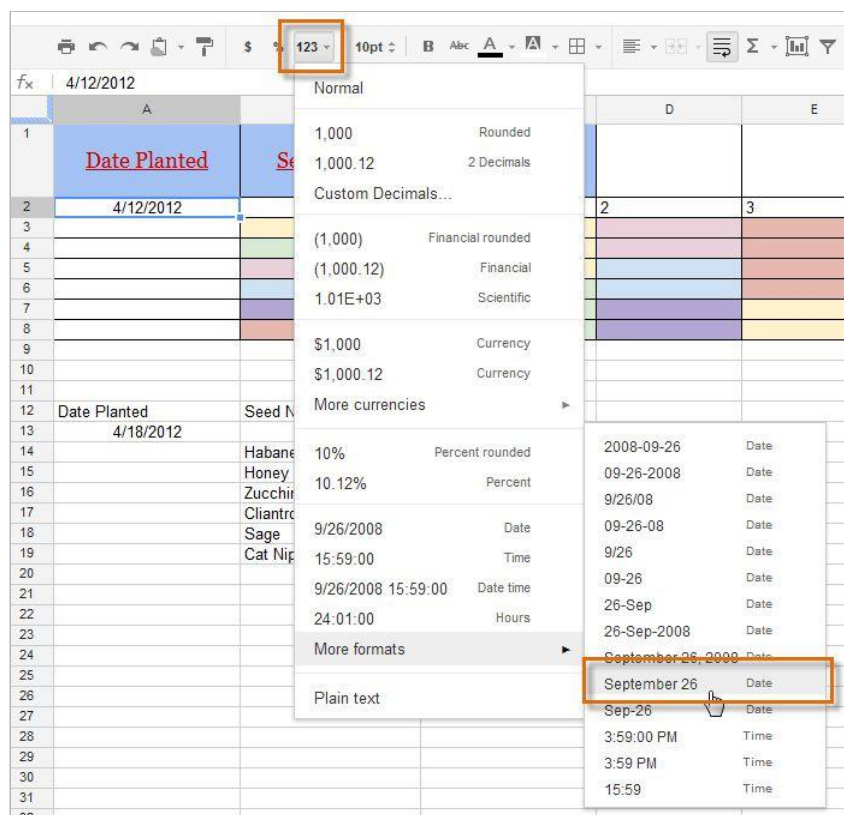
You can also select **Currency** to add proper punctuation and **currency symbols**, like the **dollar sign (\$)**, to numerical values, as well as the percent format to add the **Percent sign (%)** to numerical values.

Percentages can be formatted in two different ways: as **Percent rounded (15%)** and as **exact percent (15.00%)**.

There are numerous options for formatting **time and date** in your spreadsheet. *Go to "More Formats" Menu at the bottom of the Format Ribbon to set up the appropriate date format.* You can also easily customize your date representation:

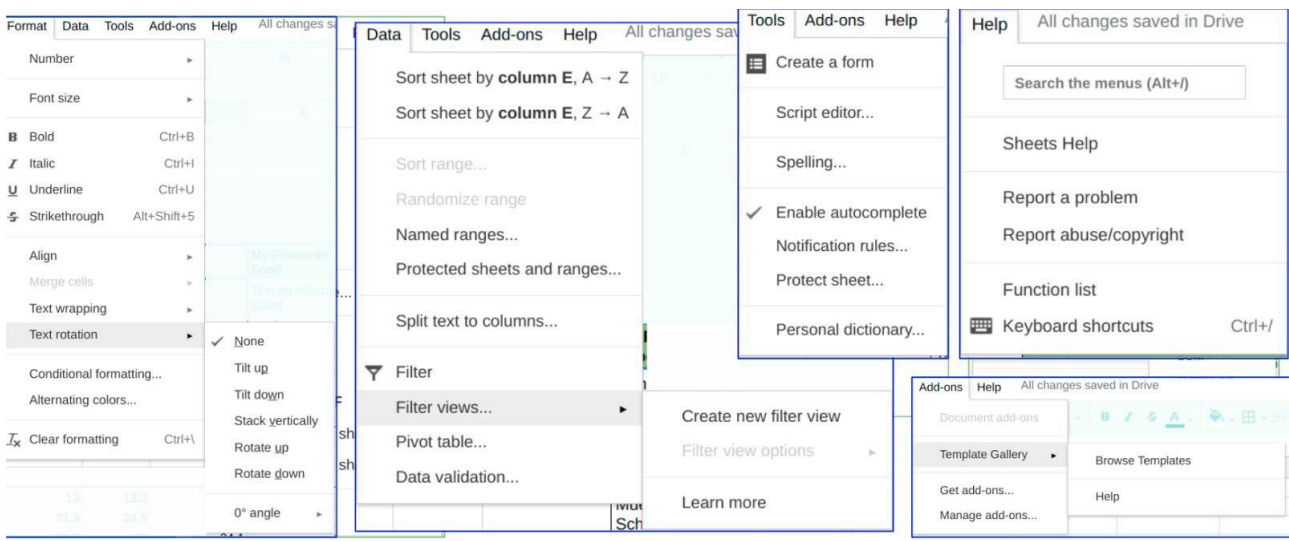
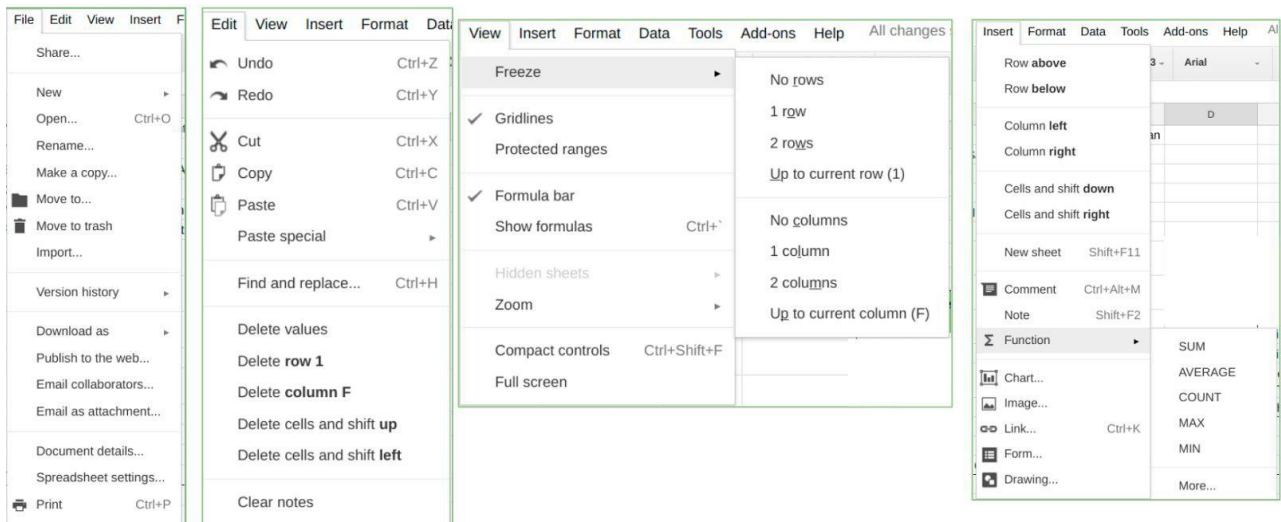


In the spreadsheet toolbar there is a **shortcut available to number formatting options**. Click on **"123"** button to find the expanded menu of number formats that you can apply to accurately represent the data in your spreadsheet:



To remove all formatting from your cell content apply **Plain text** and the numbers will be again represented in the default Google spreadsheet format.

All of the options available in Google spreadsheet, either for Formatting, Saving, Sorting or Formulas and Functions application you can find in each context menu of the spreadsheet **Ribbons**:





**Excel Exercise sheet : Exercise 1 to 6 „Formatting“**

**5.Sorting and Rearranging Data**

Google Spreadsheets allows you to analyze and work with a significant amount of data. As you add more content to your spreadsheet, knowing how to locate specific information in it becomes important. Spreadsheets allows you **reorganize** your data by **sorting** and **applying**

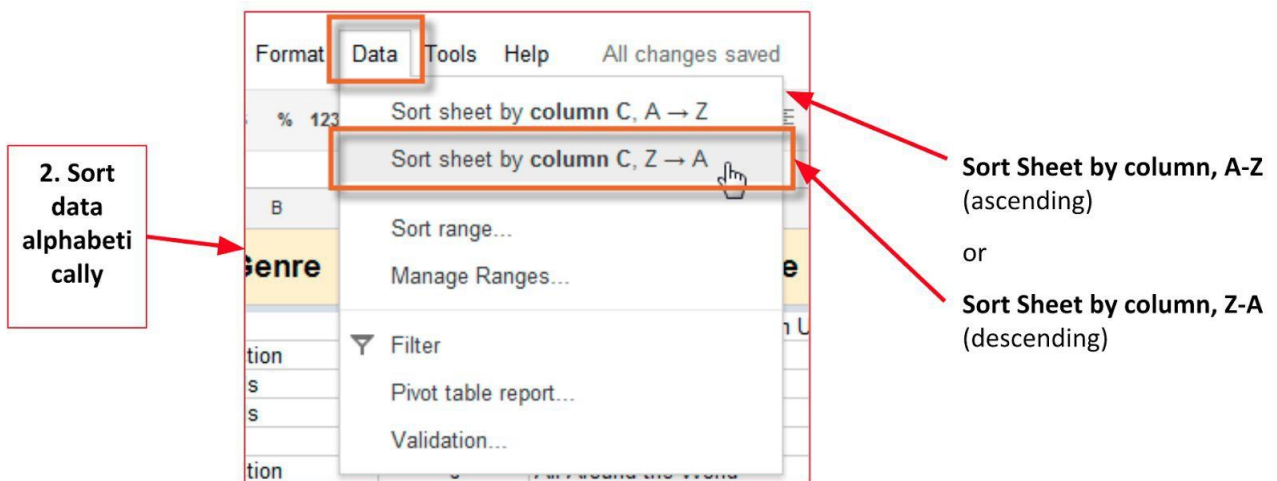


**filters** to it. You can sort your data by arranging it alphabetically or numerically, or you can apply a filter to narrow down the data and hide some of it from view.

<p><b>SORTING:</b> </p>	<p><b>FILTERING:</b> </p>
<p>When working with Google Spreadsheets, sometimes you may wish to reorganize the data so you can easily find the information you're looking for.</p> <ul style="list-style-type: none"> <li>- Sort sheet</li> <li>- Sort range             <ul style="list-style-type: none"> <li>• Alphebetically</li> </ul> </li> </ul>	<p>Filters are useful for displaying only the data that interests you. By applying filter, you'd narrow down the information in the spreadsheet to the one you need to see.</p> <ul style="list-style-type: none"> <li>- <b>Checklist of the values in columns</b></li> <li>- <b>Multiple filters</b> - applying filters to as many columns as you need</li> </ul>

### 5.1. Sorting Data in Spreadsheets

SORTING SHEET allows you to change or customize the order of your data and helps to organize all of the data in your spreadsheet by one or more column. Related information across each row is kept together when the sort is applied. This applies both to textual and numerical data.



1. Select a cell containing numerical data

2. Choose option “Sort Sheet by column, A-Z (ascending)” - to sort numerical data from the smallest to the biggest number

or

3. Choose option “Sort Sheet by column, Z-A (descending)” - to sort the numerical data from the

biggest to the smallest number

	B	C	
1	Genre	Loan Count	
2	Fiction	4	A Ho
3	Non-fiction	6	All A
4	Animals	7	Ants
5	Fiction	1	Buzz
6	Animals	7	Chan
7	Nature	4	Coral
8	Fiction	2	Dark

3. Sort data numerically

If you only need to **sort a selected range** and not the whole spreadsheet you can sort the data in a selected range of cells. When working with a sheet that contains several tables, you may wish to sort the data of a single table. Sorting a range will not affect the data on the rest of the sheet, and it will keep related information across the row together.

1. Select a cell range containing data you'd like to sort
2. Click **Data** and choose **Sort range option** from the menu

The image shows the Excel 'Data' menu with 'Sort range...' highlighted. The 'Sort' dialog box is open, showing 'Sort range from C21 to E27', 'Data has header row' checked, 'sort by' set to 'Column D', and 'A - Z' selected. Callouts point to 'Column D' and 'A - Z'.

\*\*\*You can sort multiple columns at the same time - Look for the Option "Add another sort column"

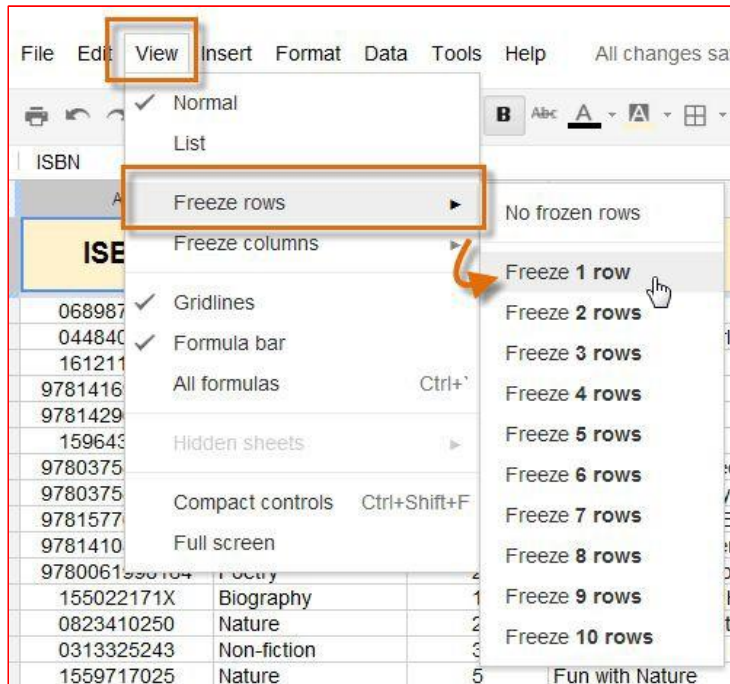
3. Confirm with "Sort"

## 5.2. Freezing rows and columns

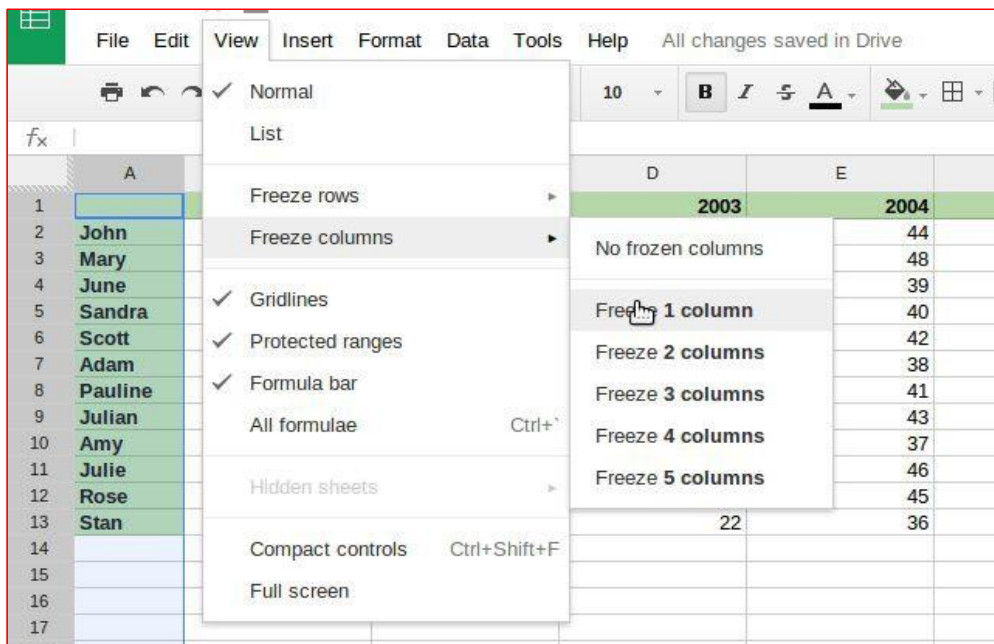
Freezing rows and columns makes viewing data comfortably - the important headings or lists

in columns remain at the same place when scrolling across the spreadsheet.

### 1. To freeze a row:



### 2. To freeze a column:

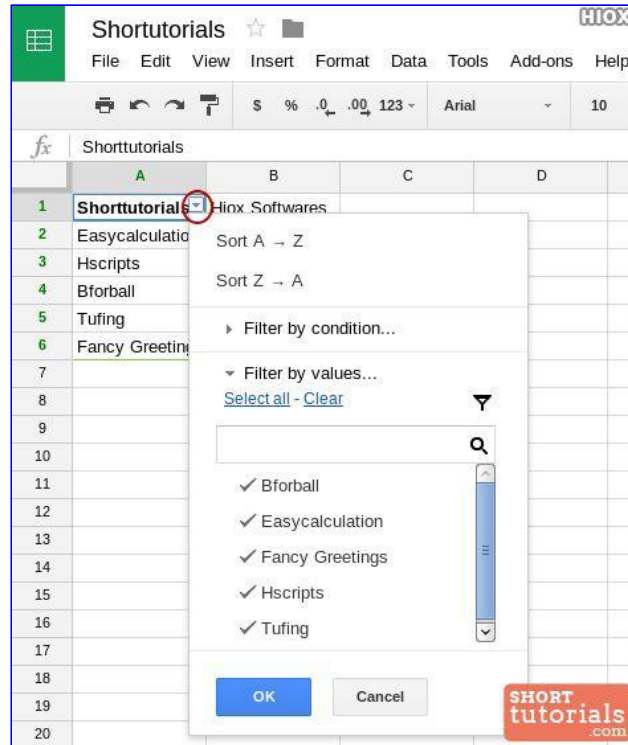


## 5.3. Filtering Data in Spreadsheets

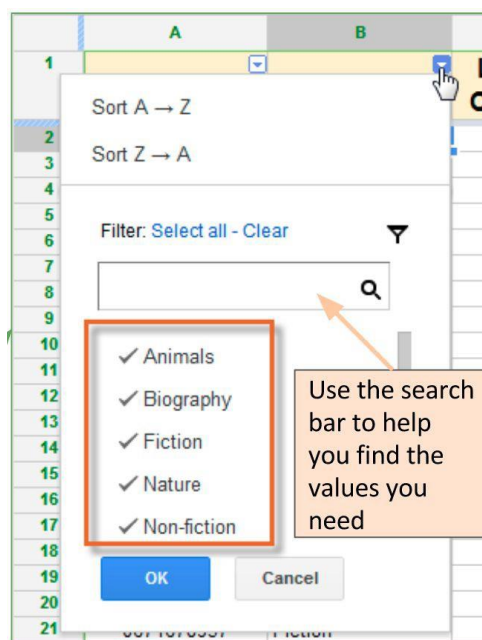
**Filters** can be applied in many different ways to improve the performance of your worksheet. They are useful for displaying only the data that interests you. For example, you could apply a filter to a

party guest list to view only the people who responded to the invitation, or sort the genres of a song list to display only rock and roll songs or classical music.

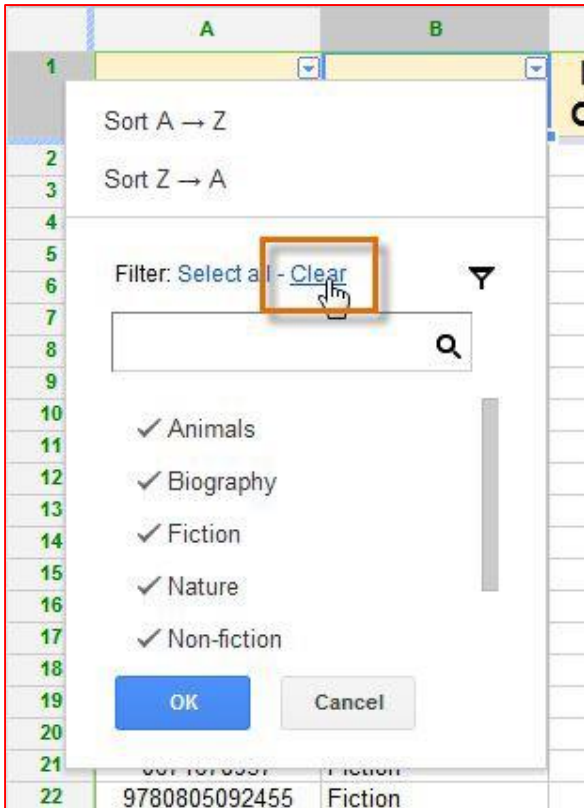
1. Select a cell containing any data and then click on the **Filter** button in your toolbar
2. Click on the **drop-down menu** next to the **column** with data you want to filter:




3. Select the **values** from the **checklist** - a field containing checked words, i.e. above "Bforball, Easycalculation etc", as filtering options for your filter - **you can choose more than one**:



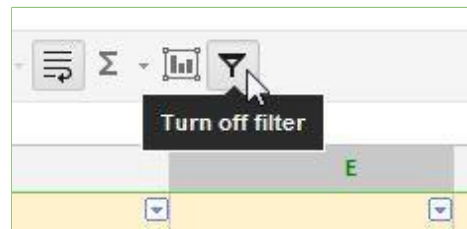




You can **clear the values** first from the checklist to make sure you select only the values you need.

Click **OK** to save your options. The sheet will be filtered according to your data selection. A filter symbol  will appear in the right corner of the column header cell. *You are free to use as many filters as you need to narrow your data to the desired result.*

If you **turn off** the filter you will to **get back to the original display of your data in your spreadsheet**:



## 5.4. Applying Multiple Filters

When you create a filter in your spreadsheet, each column header on your sheet will have a drop-down arrow for creating new filters. Filters are cumulative, meaning you are free to use as many as you need to narrow your data to the desired result. In the image below, the library's books on loan list has been filtered by genre and loan count. As a result of the two filters, Google Spreadsheets displays animal and nature books that have been loaned more than four times.

ISBN	Genre	Loan Count	Title
1612111661	Animals	7	Ants
9781429633208	Animals	7	Chameleons
0756637805	Nature	7	Volcano
1559717025	Nature	5	Fun with Nature
1553376927	Nature	5	Into the Volcano
0761401202	Animals	5	Praying Mantis

Apply filters to as many columns as you wish to obtain the desired results

## Exercise

- Open the Excel Exercise sheet
- Open an empty page
- Imagine you are the owner of a bookshop. You want to see how many books have sold online and directly from the shop for the past 12 months. Create a spreadsheet containing all relevant data:

List of books by genre: Fiction, Fantasy, Crime Fiction, Non-fiction, Drama Collections, Poetry Collections etc

Sold directly / Sold online / National Shipments / International Shipments. Add other fields you think can be relevant...

- Add how many books of each genre you have sold.
- Sort your data sheet/cell ranges alphabetically - find out which book genre was sold most and which genre didn't sell that well - then find out the best marketplace for your books (where did your books sell most?) and the preferred type of purchase. - Apply filters!

## 6. Using Formulas

When working with numerical information, Google Spreadsheets can be used to perform simple and complex calculations. This is achieved by **creating simple formulas** that will add, subtract, multiply, and divide values. It is important also to be aware of the basics of using **cell references** in formulas.

Most of the time, you will be using a **cell's address** in the formula. This is called using a **cell reference** - see the next slide. The advantage of using cell references is that you can change a value in a referenced cell and the formula will automatically recalculate. Using cell references in your formulas will make sure the values in your formulas are accurate.

All formulas must begin with an **equals sign (=)**.

This is because the cell contains, or is equal to, the formula and the value it calculates.

Google Spreadsheets uses standard operators for formulas, such as a **plus sign** for addition (+), **minus sign** for subtraction (-), **asterisk** for multiplication (\*), **forward slash** for division (/), and **caret** (^) for exponents (2<sup>3</sup>).

When a formula contains a cell address, it is using a **cell reference**. Creating a formula with cell references is useful because you can update the numerical values in cells without having to rewrite the formula.

Addition	+
Subtraction	-
Multiplication	*
Division	/
Exponents	^

## Steps to add formula:

- 6.1. Select the **cell** that will display the calculated value
2. Type the **equals sign (=)**
3. **Add cells with mathematical operators** to create a formula, e.g. =A14+B14, =14\*5 etc.
4. **Press Enter** - Excel program will automatically calculate the result

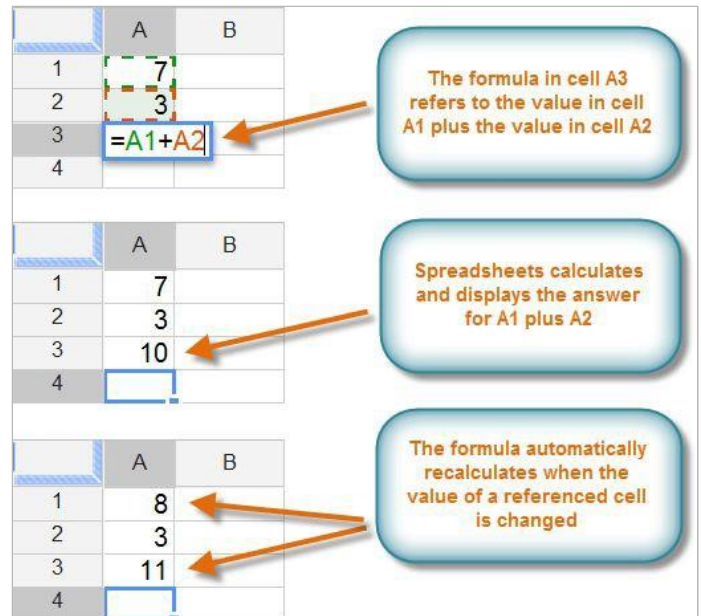
Try some simple calculations in your PaT Basic Excel Exercise spreadsheet. Make sure to include different operators.

\* Google Spreadsheets *will not always tell you* if your formula contains an Error, so it's up to you to check all of your formulas.

A **simple formula** is a mathematical expression **with one operator**, such as 7+9. Spreadsheets allow also to do **multiple calculations by using complex formulas** which have more than one mathematical operator, such as 5+2\*8.

It is important though to be aware of the **order of operations** in order to do multiple calculations, as these operations have different levels.

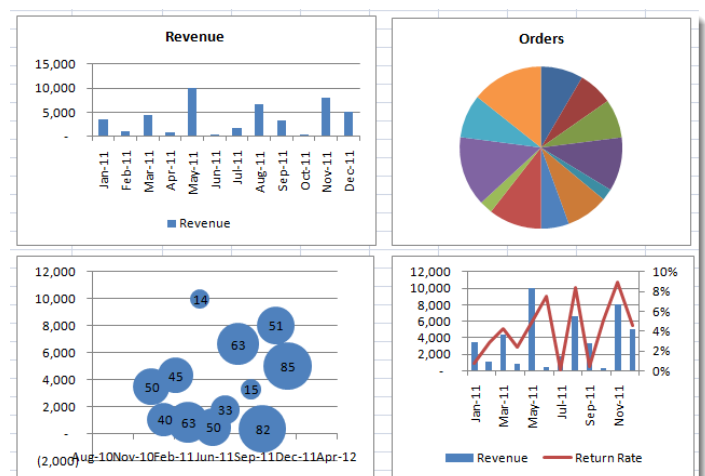
Watch the [GCFLearnFree "Complex formulas"](#) video on the [YouTube](#)



## 7.Charts

In order to present your data more interactively, excel contains ways to visual representation of data - **Charts of different kinds:** bar charts, column charts, pie charts, line charts, map charts, scatter charts, area charts and many other.

You can also **insert images and your own drawings** to your tables and table cells: product or companies brands, customer logos or other pictures you consider appropriate.



Using charts can help to *structure and analyze data and number, to evaluate alternatives, understand trends or find-out if everything is normal* **more effectively**.

Presenting charts instead of simple tables or simple reciting of number helps to **perceive information more easily** by the audience.

## 8.1 Creating Charts

To add chart to your spreadsheet, follow these steps:

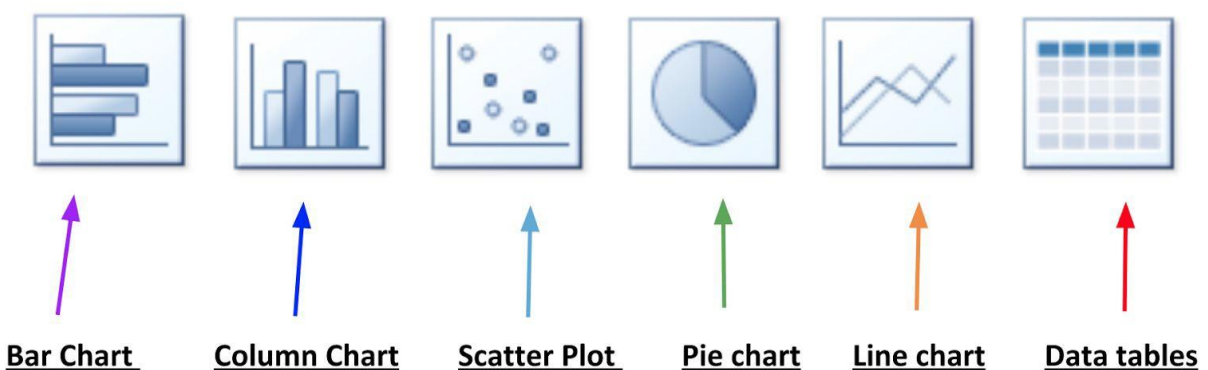
- 7.1. Find-out what you want to say?
- 7.2. (Re)arrange the data
- 7.3. Prepare the chart
- 7.4. Format the chart

### STEP 1. Find-out what you want to say?

6 common reasons that we often have to make a chart:

1. **to Compare** - You want to compare values with another: Performance of Product A vs. Product B in 5 regions, Interview performance of various candidates
2. **to show the Distribution** - Distribution of Call waiting times in a call center, Distribution of bugs found in 10 week software testing phase
3. **to explain Parts of the Whole** - Individual product sales as a percentage of whole revenue; Browser types of customers visiting our website
4. **to tell the Trend over time** - Customer footfalls on the last 365 days; Share price of MSFT in the last 100 trading sessions
5. **to find out the Deviations** - You want to see which values deviate from the norm: Failures (or bugs) in the context of Quality Control; Sales in Various Store
6. **to understand the Relationship** - You want to establish (or show) relationship between 2 (or more) variables: Relationship between Search Phrases and Product Purchases in your website; Relationship between in-store sales and holidays

Choose the appropriate **chart type** for visual presentation of your data. There are many types of charts available in spreadsheets that you can use. The charts below are the most popular:



### STEP 2. (Re)arrange the data:

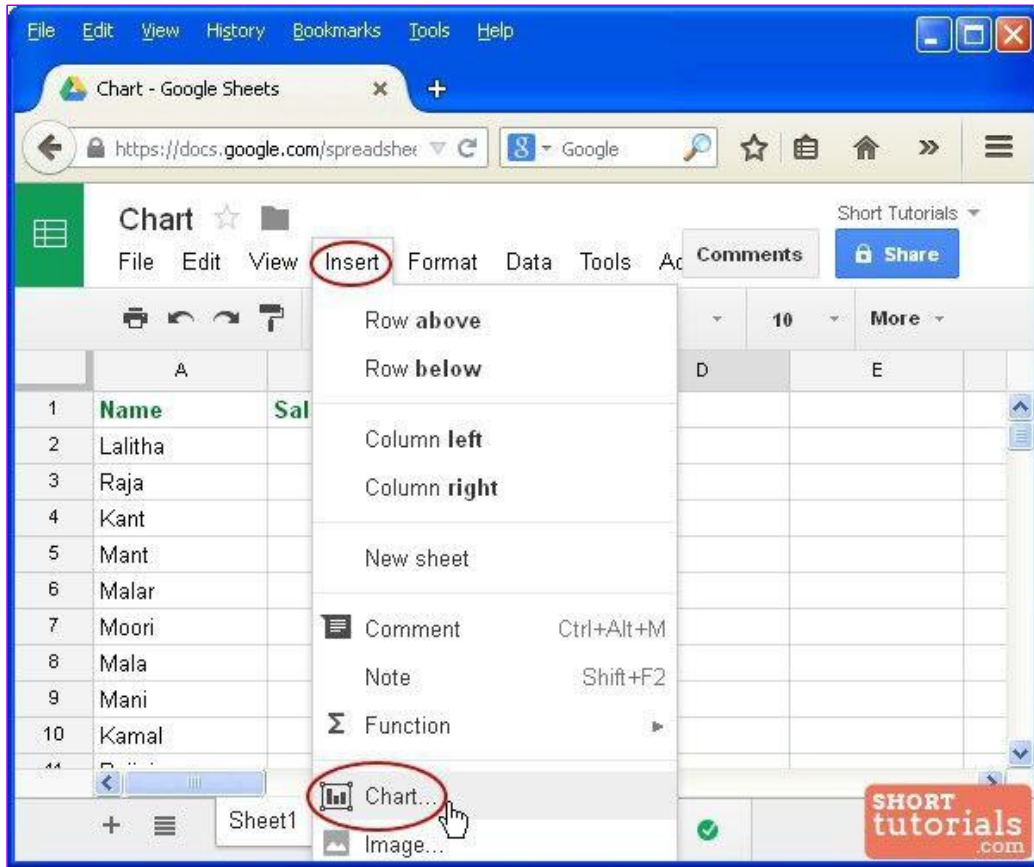
Even when we know the message and corresponding chart, sometimes, our data may not support us. We then have to rearrange the data. Using formulas, table and data cleaning tools. Once you have data in the correct format, you can proceed to step 3.

### STEP 3. Prepare the chart:



Most of the regular charts are available in the spreadsheets chart list as default charts. You can insert them with few clicks:

But for some special chart types, you may have to prepare the chart *by formatting tools - Step 4.*

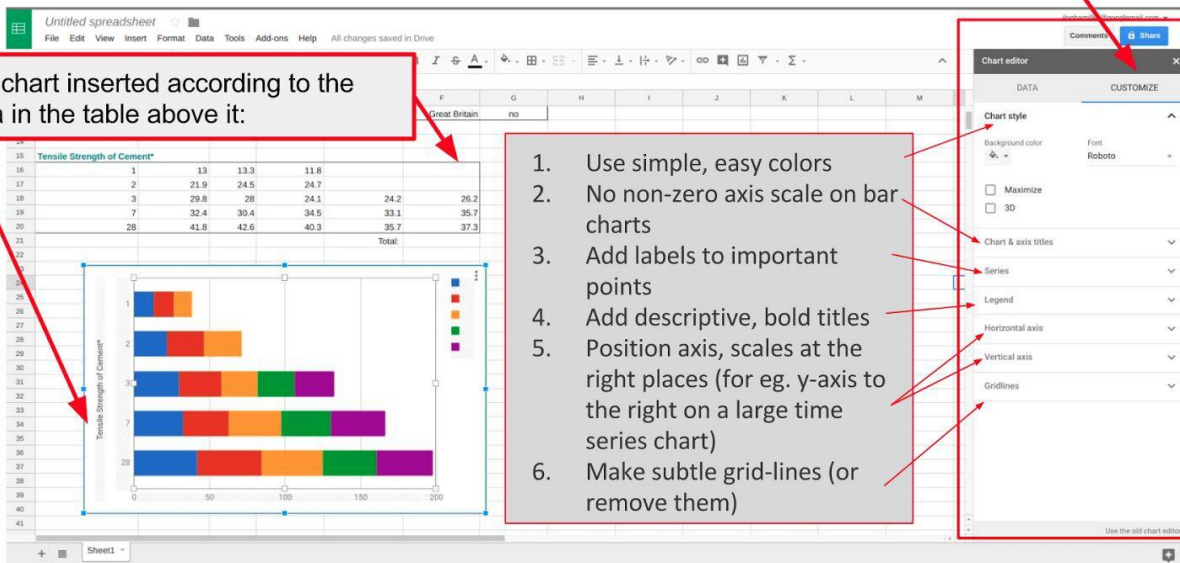


## STEP 4. Formatting Chart

### Creating charts: Step 4 - *Format the chart*

Charts customizing menu

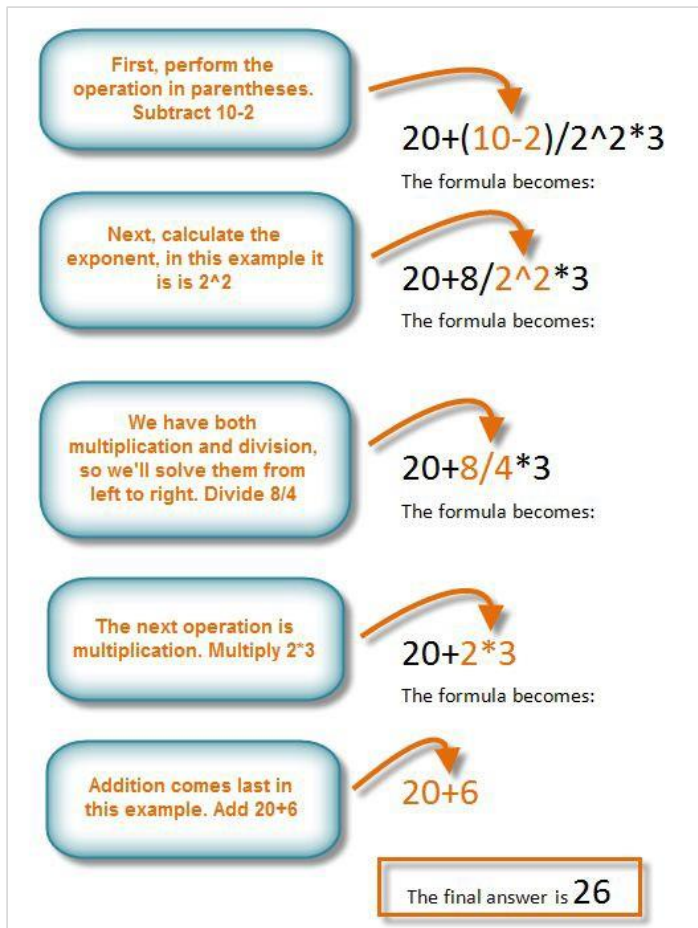
Bar chart inserted according to the data in the table above it:



# Excel Exercise sheet: Exercise 15 to 17, „charting“

For experts

## 8.Funktionen



Google Spreadsheets calculates formulas based on the following **order of operations**:

1. Operations enclosed in parentheses
2. Exponentiation calculations ( $3^2$ , for example)
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**. You can also use **cell references as values** when applying complex formulas for your calculations:

	A	B	C
3	ITEM #	DESCRIPTION	PRICE
5	C44-1	7ft VGA Monitor Cable	\$7.88
6	H71-3	Headphones w/vol. control	\$4.50
7	M40-8	Monitor Cloth	\$1.99
8		TAX	=(C5+C6+C7)*0.055
9		TOTAL	

\*The complex formula in cell C8 calculates the sales tax by adding the prices together and multiplying by the 5.5% tax rate (which is written as 0.055).

**For experts**

**! It's important to enter complex formulas with the correct order of operations.**

Otherwise, Google Spreadsheets will not calculate the results accurately. In our example, using the parentheses is important, otherwise multiplication is calculated first and the result is incorrect:

	A	B	C
3	<b>ITEM #</b>	<b>DESCRIPTION</b>	<b>PRICE</b>
5	C44-1	7ft VGA Monitor Cable	\$7.88
6	H71-3	Headphones w/vol. control	\$4.50
7	M40-8	Monitor Cloth	\$1.99
8		TAX	=C5+C6+C7*0.055
9		TOTAL	

TAX	\$12.49
TOTAL	

Another way to do the calculations in the cells by selecting the cell range and applying the **function** to the selected range

You can calculate:

- Sum
- Average rates
- Max and Min values of sth
- and many other



Use **Function** button in your Toolbar

**To add a function:**

1. Select the **cell** that will display the calculated value
2. Type the **equals sign (=)**
3. **Add cell range with cells separated by colon** (e.g. B15:C15) to add a function
4. **Press Enter** - Excel program will automatically calculate the result

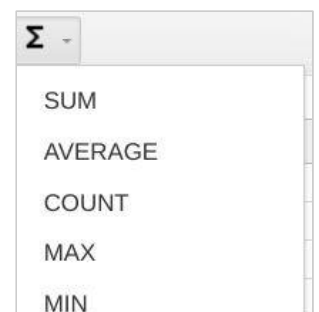
Like formulas, functions can be copied to adjacent cells. Select the **cell** that contains the function, and the **fill handle** displays. Click, hold, and drag the fill handle over the cells you wish to fill.

Lift	15	35	10	35	15	35
Extension	15	35	20	35	17	35
Average	13.9					

Average	13.9	50.5	12.5	54	11	58.5
---------	------	------	------	----	----	------

\*\*\*Google Spreadsheets offers *hundreds of useful Functions* in the Functions list that do complex statistical, financial and analytical

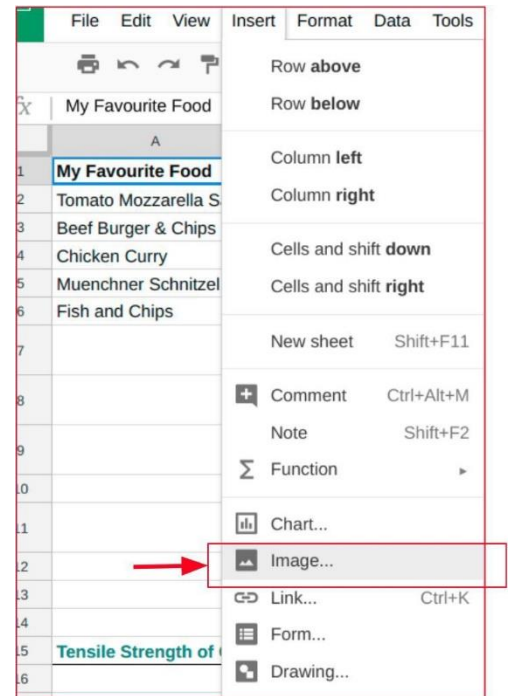
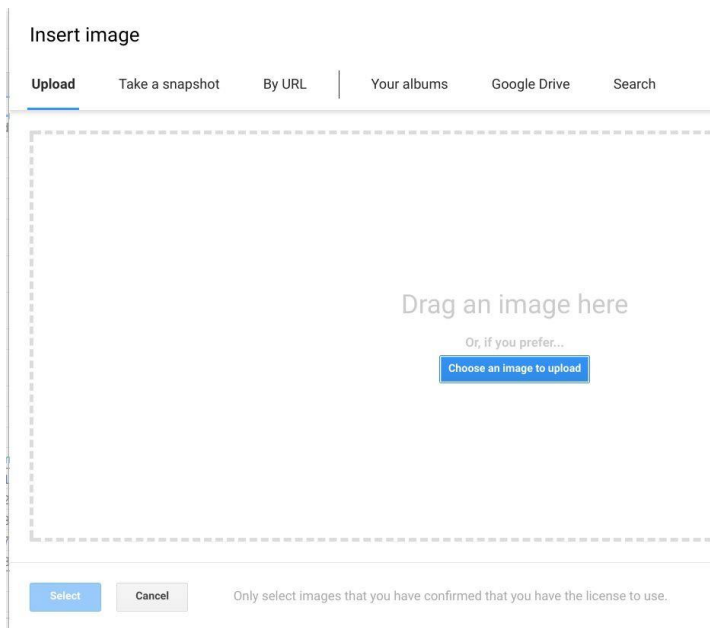


## Excel Exercise sheet: Exercise 18 to 22,,Functions“

### 9.Inserting Images

Inserting images into Google Sheet is similar to inserting images into any other .doc document.

- 1) Go to the **Insert** Ribbon menu and Select **Image** option
- 2) **Upload** an image from your device, **add an URL link (Image Address)** of the images *if you want to insert an image that is not saved on your device but free available on the web* - this method saves you time downloading images first and space for images on your device! Or **Add an Image from your Google Drive Storage**



*\*There are more Upload options available, but let's concentrate on these three most popular methods*

- 3) Click **Select** to confirm

Watch the **Flipped Classroom Tutorials** [“Google Sheets - Tutorial 06 - Advanced Image Insert and Formatting”](#) video on YouTube to learn 3 Options of how to fit an image into a cell.



## 10. Share, Protect, and Move Your Data

What makes Sheets so powerful is how synchronized you'll feel with any updates in Google Drive that you make or when collaborating with your coworkers. **Jointly editing a spreadsheet** is one of the critical functions of Sheets, and Google has made it a seamless experience.

Here's how it works:

1. Click either **FILE > SHARE** or use the blue **"Share"** button in the top right
2. Click **"advanced"**, then enter emails of who can view or edit your spreadsheet
3. Select any other privacy options and hit done

	A	B	C	D	E	F	G	H	
1	Ingredient List	Scrambled Eggs	French Toast	Cereal	Muffin	Doughnut	Lowest Price per Ingredient	Highest Price per Ingredient	Aver
2	Eggs	4	2		1	1	0.33	0.5	
3	Bread		2				0.1	0.2	
4	Milk			2			0.5	0.75	
5	Cereal (or Flour)			2	3	3	0.2	0.5	
6	Butter	1	4		2	2	0.25	0.5	
7	Salt	1					0.05	0.15	
8	Sugar		2		3	4	0.1	0.2	
9	Total "Parts" Needed	6	10	4	9	10			
10	Number of Ingredients	3	4	2	4	4			
11	Avg Price / Serving								
		\$2.14	\$2.93	\$1.95	\$2.67	\$2.82			
12	Tutorial Link	<a href="https://www.youtube.com/watch?v=itdza8kY0zY">https://www.youtube.com/watch?v=itdza8kY0zY</a>	<a href="https://www.youtube.com/watch?v=itdza8kY0zY">https://www.youtube.com/watch?v=itdza8kY0zY</a>	<a href="https://www.youtube.com/watch?v=itdza8kY0zY">https://www.youtube.com/watch?v=itdza8kY0zY</a>	<a href="https://www.youtube.com/watch?v=itdza8kY0zY">https://www.youtube.com/watch?v=itdza8kY0zY</a>	<a href="https://www.youtube.com/watch?v=itdza8kY0zY">https://www.youtube.com/watch?v=itdza8kY0zY</a>			
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When you open the "advanced" sharing panel, you'll see a number of options:

For experts

The screenshot shows the 'Sharing settings' dialog for a Google Sheet titled 'Making Breakfast'. The dialog is overlaid on a spreadsheet with columns for ingredients and their prices. Annotations in red text point to various parts of the dialog:

- 'Link copied to clipboard by default' points to the 'Link to share' field.
- 'Who has access to the spreadsheet' points to the 'Who has access' section, which shows the current setting is 'Private - Only you can access'.
- 'Change the spreadsheet permissions from private to public or "only your organization"' points to the 'Change...' button.
- 'Change what they can do to your spreadsheet' points to the 'Can edit' dropdown in the 'Invite people' section.
- 'Make it so no-one can modify these sharing settings' points to the 'Owner settings' section, which includes checkboxes for 'Prevent editors from changing access and adding new people' and 'Disable options to download, print, and copy for commenters and viewers'.
- 'If you're sharing your spreadsheet publicly and don't want people copying it' points to the 'Done' button.

The default functionality when you click the "Share" Button is to copy a link to the spreadsheet to your clipboard.

When you share this link with someone via a messenger or email, if they click the link it will bring them to the spreadsheet. However, unless you've invited them via email (in the email field) and selected "Can Edit", they will still need to request permission to make changes.

If you'd like to give anyone within your organization or company editor-level access, click the "change..." button in the "Who has Access" section and select "On - (Your Organization Name)\*\*". (Note: this option will only appear if you're using [Google Apps for Work.](#))

The screenshot shows the 'Link sharing' dialog with several options. An annotation in red text points to the 'On - MichaelGrubbs' option:

- 'Anyone in your company who can access the folder where it's stored can access' points to the 'On - MichaelGrubbs' option.

**For experts**

\*\*\*Someone is "In your organization" when they have an email address and Google account for your company and anyone signed in to one of those accounts can access the spreadsheet.

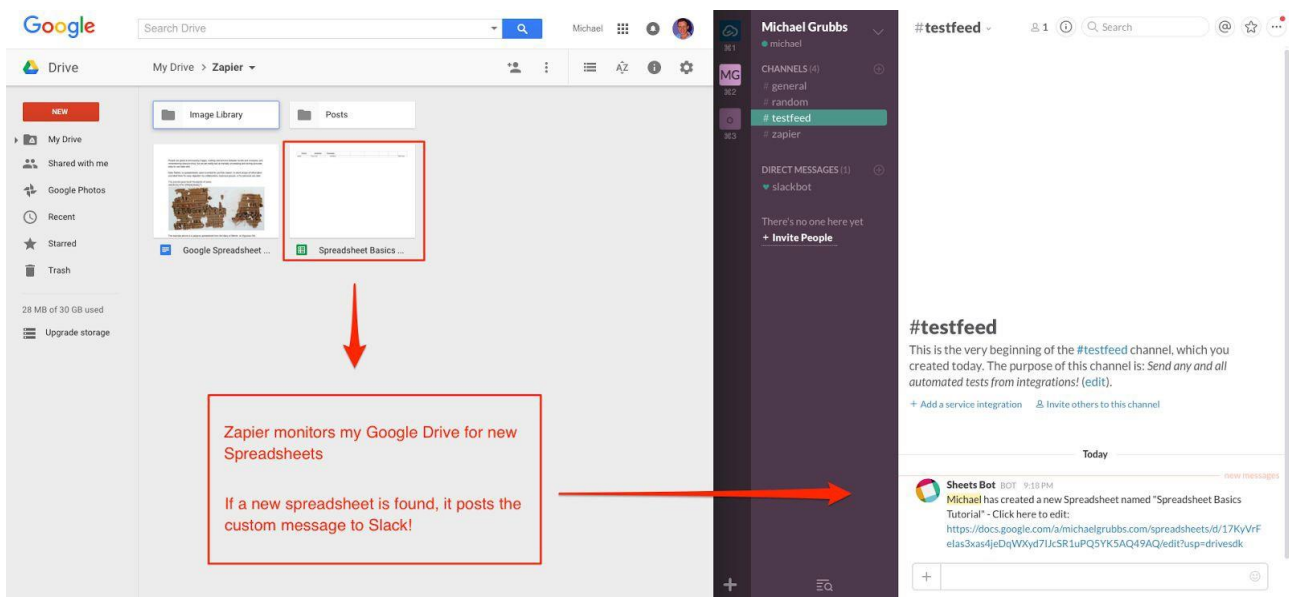
## 9.1. Sharing Spreadsheets with Your Devices and Apps

Even though Google Sheets and Drive are built for sharing between users, you'll notice that many times your spreadsheets are created as internal documents, and sharing is secondary to actually getting work done.

You can **streamline your spreadsheet workflows** and **real-time data-sharing** by taking **advantage of these helpful add-ons**:

1. [The Google Docs mobile apps](#). You can use the Google Sheets mobile app to view and edit your spreadsheets, share links on the go, and add users. It's a solid companion to—but not a replacement for—the web app.
2. [Google Drive sync to your desktop](#). Google Drive allows you to easily upload files from your local desktop environment to your online Drive. This makes them accessible to your collaborators and also allows you to quickly import them into spreadsheets and other documents.
3. [A Third-Party tool like Zapier](#). You can use Zapier to automatically add data to your spreadsheets, send files to your Google Drive account, alert you of change to your Sheets... you name it

For example, monitoring Google spreadsheet via Zapier in Slack:



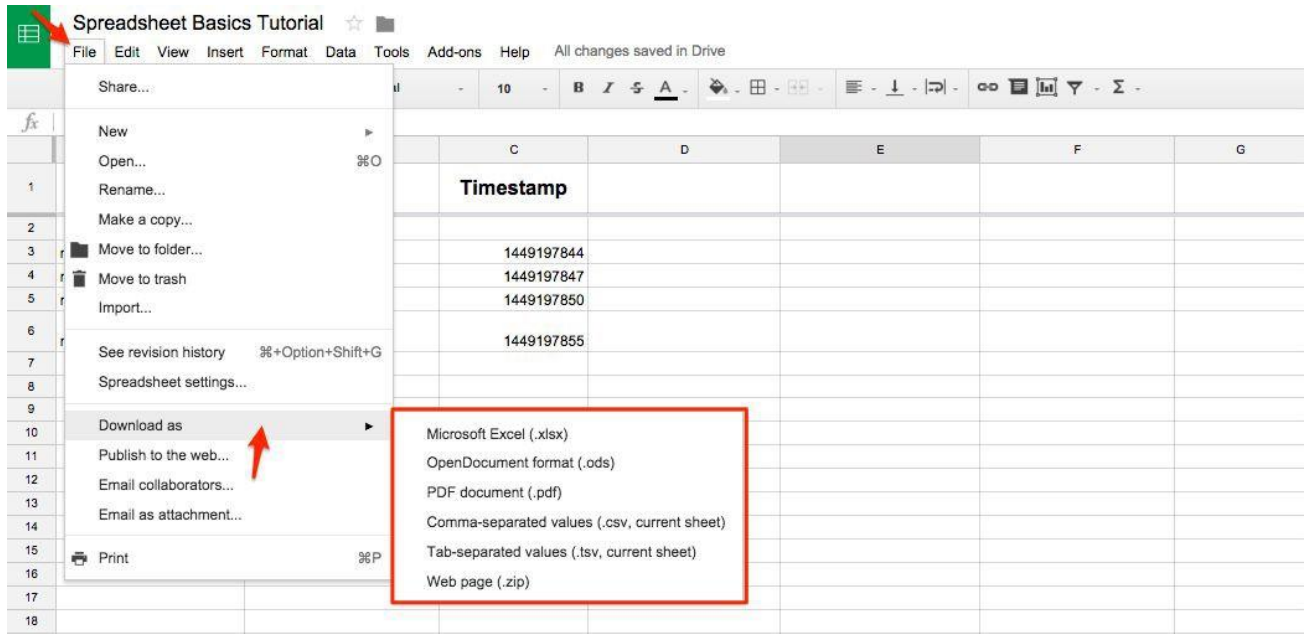
\*\*\*Simple sharing explained earlier can also work as an alternative to streaming your spreadsheet

**For experts**

via your mobile device when on the go. You can also copy the link to the spreadsheet in your Google Drive and post the file name and a link to the spreadsheet, for example, in Gmail or Slack Channel or other.

## 9.2. Downloading Your Data

If you need to send your files to external collaborators, upload a file into another system, or just like having backups for posterity, then turn towards one of **Google Sheets' many data export options**.



The **most common exports** will be either **.xls (Excel document)** or **.csv (comma-separated values)**. If you're not sure which format to use, a .csv is usually the best bet.

Google will **convert** the spreadsheet to the format you need and **preserve the formats** you have applied in it.