Microsoft Excel Training

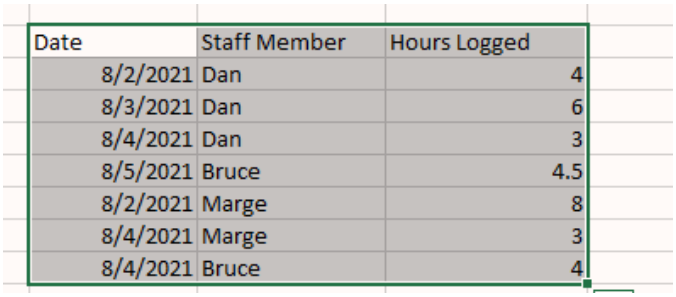
Filter Function

The Filter function is a way that Microsoft Excel allows you to easily sort data in a table that you've made. Here's a sample table:

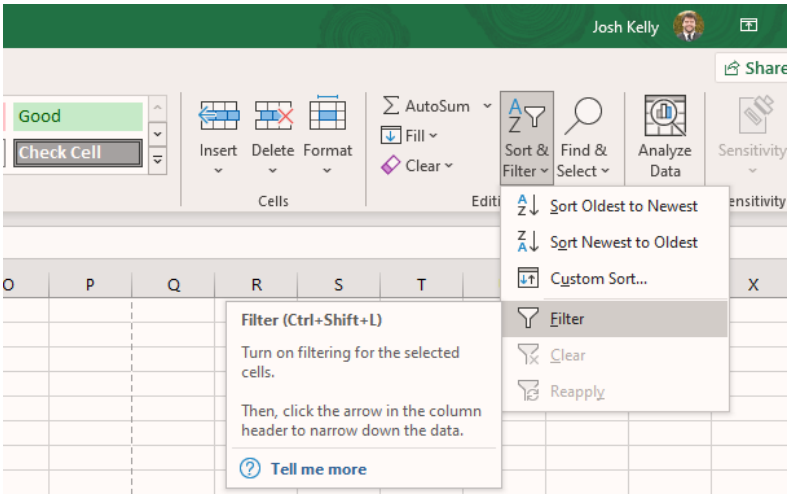
Date	Staff Member	Hours Logged
8/2/2021	Dan	4
8/3/2021	Dan	6
8/4/2021	Dan	3
8/5/2021	Bruce	4.5
8/2/2021	Marge	8
8/4/2021	Marge	3
8/4/2021	Bruce	4

As you can see, the table above isn't really sorted in any particular way – the dates are out of order, the staff members are not in alphabetical order, and the hours are not logged in any particular order. The Filter function comes into play when you want to sort these categories numerically or alphabetically with ease.

1. To turn on the Filter for your table, you first want to highlight the entire table:



2. Then, you'll go up to the top of the screen, select the "Sort & Filter" dropdown menu, and click the "Filter" option that pops up below it:



3. Once you click the “Filter” button, your table should look like this – note the new arrows at the top of each column in the table:

Date	Staff Member	Hours Logged
8/2/2021	Dan	4
8/3/2021	Dan	6
8/4/2021	Dan	3
8/5/2021	Bruce	4.5
8/2/2021	Marge	8
8/4/2021	Marge	3
8/4/2021	Bruce	4

4. Now that the filter is in place, you can click on the arrows that have appeared and select either “Sort A to Z” or “Sort Z to A” if you’re dealing with words, or “Sort smallest to largest” or “Sort largest to smallest” if you’re dealing with numbers. This will allow you to easily decide which columns you want to have sorted in which way at any given point in time. So, for example, here’s what it would look like if you were to select the arrow to the right of “Hours Logged” and select “Sort smallest to largest”:

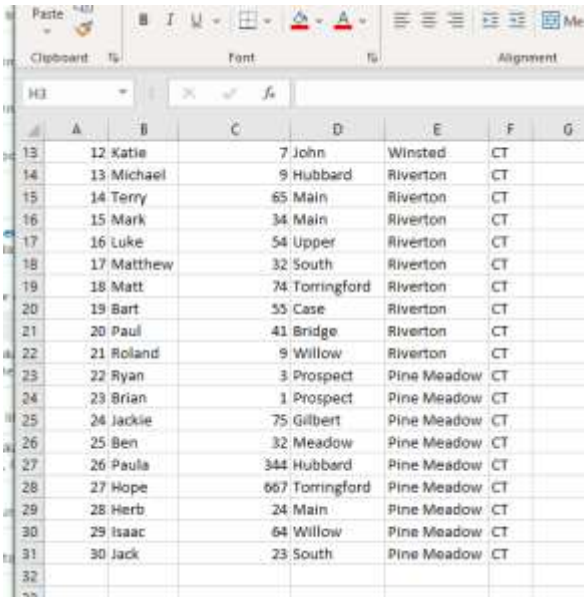
Date	Staff Member	Hours Logged
8/4/2021	Dan	3
8/4/2021	Marge	3
8/4/2021	Bruce	4
8/2/2021	Dan	4
8/5/2021	Bruce	4.5
8/3/2021	Dan	6
8/2/2021	Marge	8

5. In conclusion, the “Filter” function is generally better to use than the “Sort” function because it requires you to highlight the whole table less often (just once as opposed to with every new sort), and in turn it accounts for fewer errors. Often times with the “Sort” function, columns or rows are missed, and then the whole table is jumbled and not correctly aligned with itself. The only reason you may have to redo a Filter function is if you need to add more columns to your table.

Freeze Panels

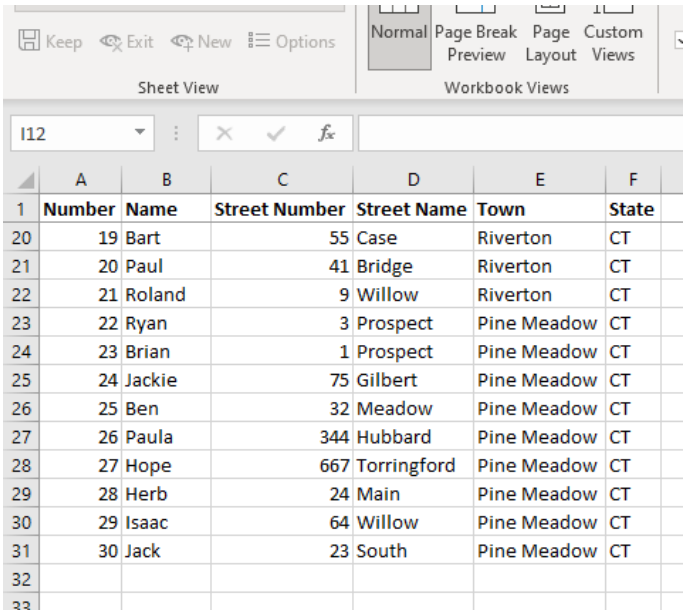
Freeze panels are sometimes needed when you’re working with a very large set of data. For example, when dealing with a long list of roads, you may forget which column houses which data points, in which case you would want to use freeze panels.

Here’s an example of a large table of data, scrolled down, without using freeze panels:



	A	B	C	D	E	F	G
13	12	Katie	7	John	Winsted	CT	
14	13	Michael	9	Hubbard	Riverton	CT	
15	14	Terry	65	Main	Riverton	CT	
16	15	Mark	34	Main	Riverton	CT	
17	16	Luke	54	Upper	Riverton	CT	
18	17	Matthew	32	South	Riverton	CT	
19	18	Matt	74	Torringford	Riverton	CT	
20	19	Bart	55	Case	Riverton	CT	
21	20	Paul	41	Bridge	Riverton	CT	
22	21	Roland	9	Willow	Riverton	CT	
23	22	Ryan	3	Prospect	Pine Meadow	CT	
24	23	Brian	1	Prospect	Pine Meadow	CT	
25	24	Jackie	75	Gilbert	Pine Meadow	CT	
26	25	Ben	32	Meadow	Pine Meadow	CT	
27	26	Paula	344	Hubbard	Pine Meadow	CT	
28	27	Hope	667	Torringford	Pine Meadow	CT	
29	28	Herb	24	Main	Pine Meadow	CT	
30	29	Isaac	64	Willow	Pine Meadow	CT	
31	30	Jack	23	South	Pine Meadow	CT	
32							

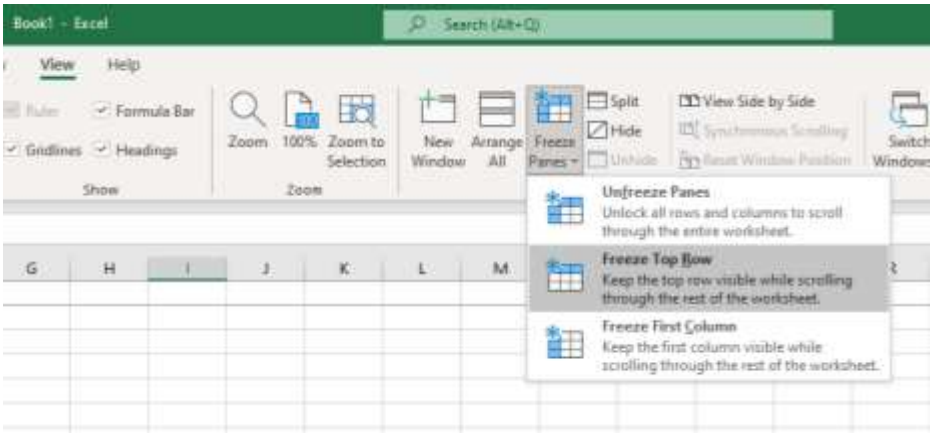
It might seem self-explanatory with some data, but for other data, wouldn't it be nice to be able to see the column labels even when you've scrolled down? Like this:



	A	B	C	D	E	F
1	**Number**	**Name**	**Street Number**	**Street Name**	**Town**	**State**
20	19	Bart	55	Case	Riverton	CT
21	20	Paul	41	Bridge	Riverton	CT
22	21	Roland	9	Willow	Riverton	CT
23	22	Ryan	3	Prospect	Pine Meadow	CT
24	23	Brian	1	Prospect	Pine Meadow	CT
25	24	Jackie	75	Gilbert	Pine Meadow	CT
26	25	Ben	32	Meadow	Pine Meadow	CT
27	26	Paula	344	Hubbard	Pine Meadow	CT
28	27	Hope	667	Torringford	Pine Meadow	CT
29	28	Herb	24	Main	Pine Meadow	CT
30	29	Isaac	64	Willow	Pine Meadow	CT
31	30	Jack	23	South	Pine Meadow	CT
32						

In order to make this happen, just follow these steps:

1. In the top row of menu options in Excel, click on the "View" tab.
2. In the next row down, a button entitled "Freeze Panes" will appear – click on it.
3. Select "Freeze the Top Row"
4. You're all set!

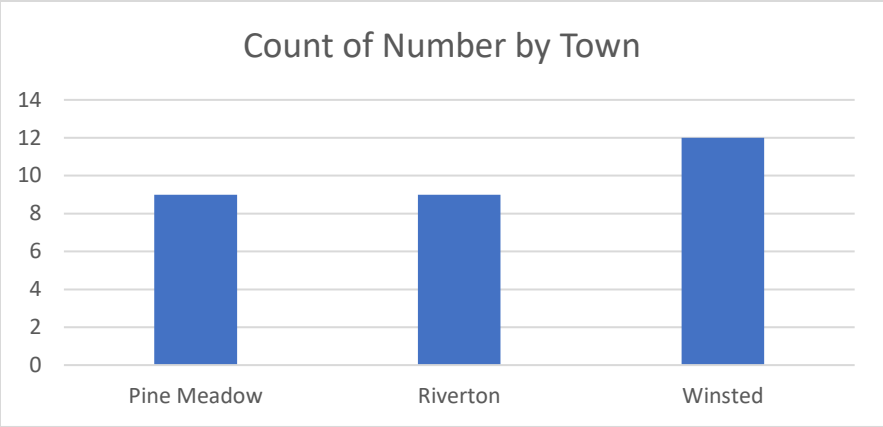


Creation of basic chart/graph

This section covers how to turn data into a quick graph. Here's the data I'll use (totally made up, of course):

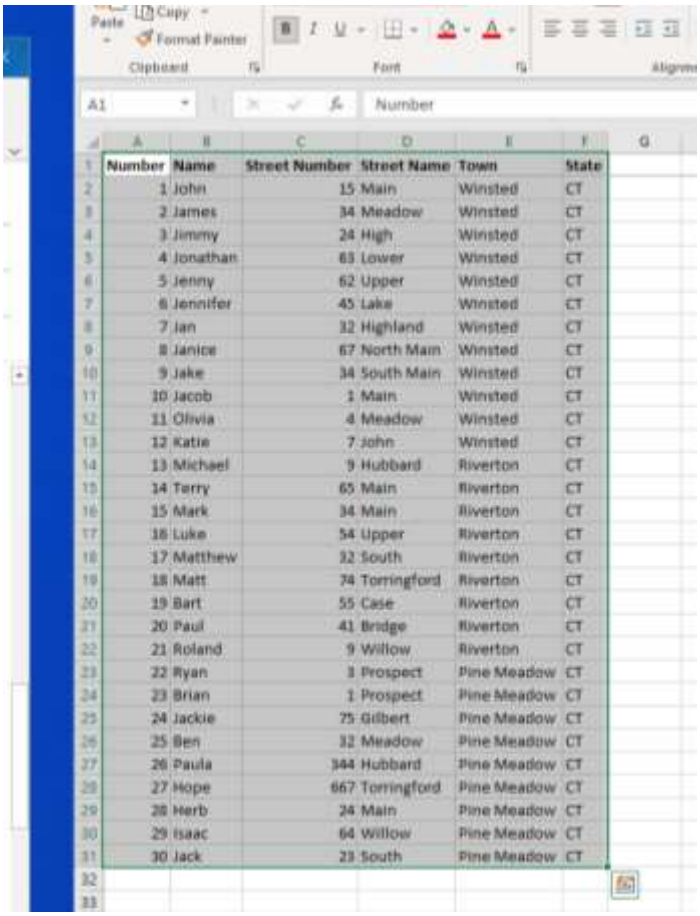
Number	Name	Street Number	Street Name	Town	State
1	John	15	Main	Winsted	CT
2	James	34	Meadow	Winsted	CT
3	Jimmy	24	High	Winsted	CT
4	Jonathan	63	Lower	Winsted	CT
5	Jenny	62	Upper	Winsted	CT
6	Jennifer	45	Lake	Winsted	CT
7	Jan	32	Highland	Winsted	CT
8	Janice	67	North Main	Winsted	CT
9	Jake	34	South Main	Winsted	CT
10	Jacob	1	Main	Winsted	CT
11	Olivia	4	Meadow	Winsted	CT
12	Katie	7	John	Winsted	CT
13	Michael	9	Hubbard	Riverton	CT
14	Terry	65	Main	Riverton	CT
15	Mark	34	Main	Riverton	CT
16	Luke	54	Upper	Riverton	CT
17	Matthew	32	South	Riverton	CT
18	Matt	74	Torringford	Riverton	CT
19	Bart	55	Case	Riverton	CT
20	Paul	41	Bridge	Riverton	CT
21	Roland	9	Willow	Riverton	CT
22	Ryan	3	Prospect	Pine Meadow	CT
23	Brian	1	Prospect	Pine Meadow	CT
24	Jackie	75	Gilbert	Pine Meadow	CT
25	Ben	32	Meadow	Pine Meadow	CT
26	Paula	344	Hubbard	Pine Meadow	CT
27	Hope	667	Torringford	Pine Meadow	CT
28	Herb	24	Main	Pine Meadow	CT
29	Isaac	64	Willow	Pine Meadow	CT
30	Jack	23	South	Pine Meadow	CT

And here is the graph that I'll create:



In order to make a graph like this, follow these instructions:

1. Highlight all the data in the sheet that you want to have graphed:



Number	Name	Street Number	Street Name	Town	State
1	John	15	Main	Winsted	CT
2	James	34	Meadow	Winsted	CT
3	Jimmy	24	High	Winsted	CT
4	Jonathan	63	Lower	Winsted	CT
5	Jenny	62	Upper	Winsted	CT
6	Jennifer	45	Lake	Winsted	CT
7	Ian	32	Highland	Winsted	CT
8	Janice	67	North Main	Winsted	CT
9	Jake	34	South Main	Winsted	CT
10	Jacob	1	Main	Winsted	CT
11	Olivia	4	Meadow	Winsted	CT
12	Katie	7	John	Winsted	CT
13	Michael	9	Hubbard	Riverton	CT
14	Terry	65	Main	Riverton	CT
15	Mark	34	Main	Riverton	CT
16	Luke	54	Upper	Riverton	CT
17	Matthew	32	South	Riverton	CT
18	Matt	74	Torringford	Riverton	CT
19	Bart	55	Case	Riverton	CT
20	Paul	41	Bridge	Riverton	CT
21	Roland	9	Willow	Riverton	CT
22	Ryan	3	Prospect	Pine Meadow	CT
23	Brian	1	Prospect	Pine Meadow	CT
24	Jackie	75	Gilbert	Pine Meadow	CT
25	Ben	32	Meadow	Pine Meadow	CT
26	Paula	344	Hubbard	Pine Meadow	CT
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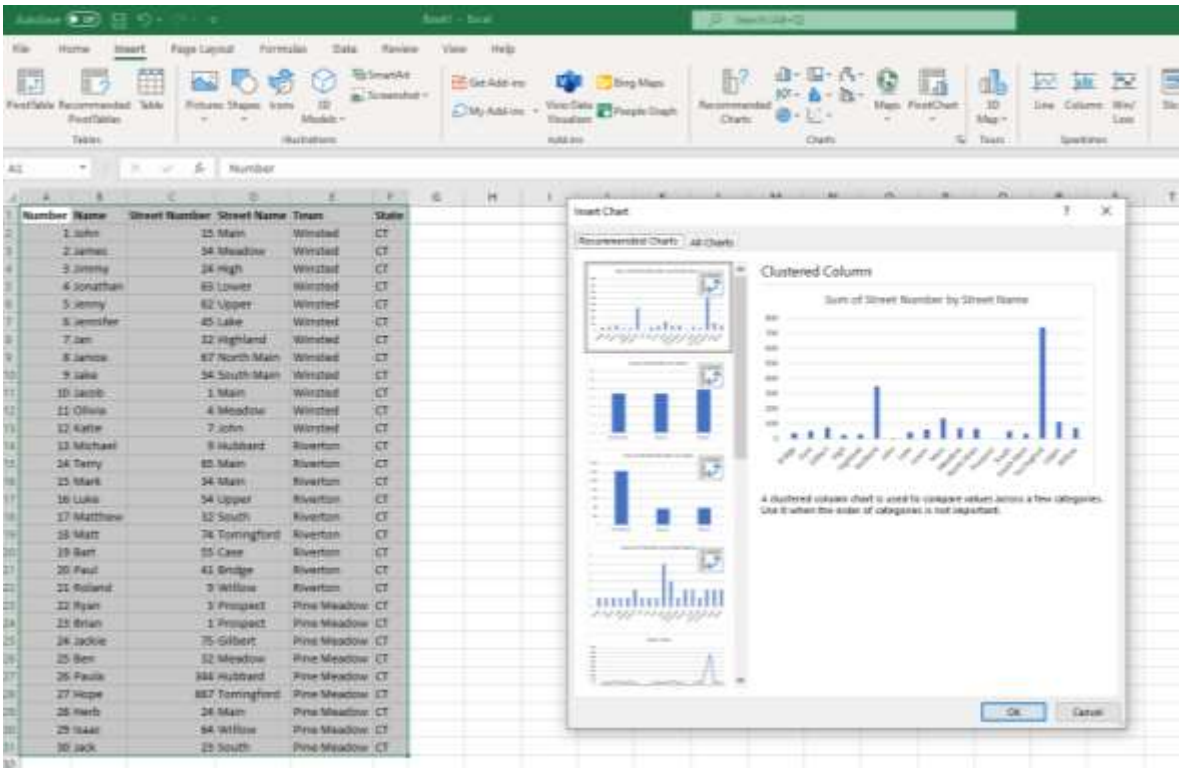
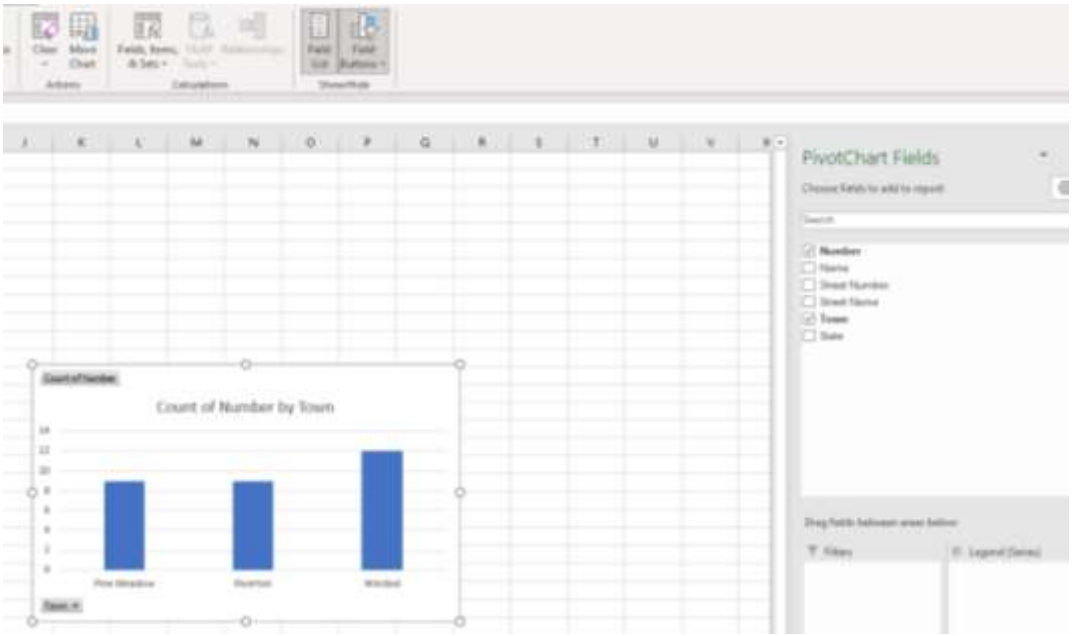
28	Herb	24	Main	Pine Meadow	CT
29	Isaac	64	Willow	Pine Meadow	CT
30	Jack	23	South	Pine Meadow	CT

2. Click on "Insert" in the top row of Excel and then "Recommended Charts," and this panel will pop up:



3. Scroll through the options on the left-hand side to find what kind of chart you would like to use! So, if you want a bar graph focusing on how many people live in each town, in this example, you can select that, click okay, and then it will open a new tab that looks something like this:



4. You now have a graph! There are plenty of ways that graph can be edited, but I will leave you to explore those options for now. If there are any questions, don't hesitate to email townmanager@townofwinchester.org.

Formulas & Linking Cells to other Cells

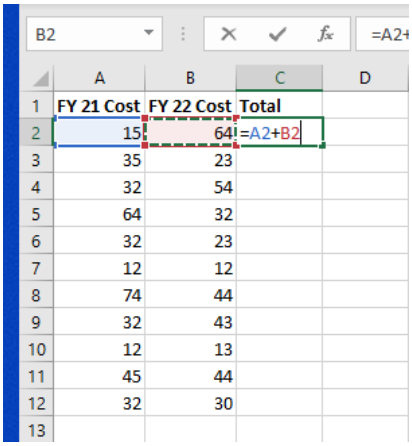
This section is really just a next step beyond creating basic formulas, such as addition, subtraction, multiplication, etc – so, if you are familiar with that, this section may seem redundant to you.

Sometimes, you may want to not only create a formula in a cell, but link other cells to that formula. Let's take this chart for example:

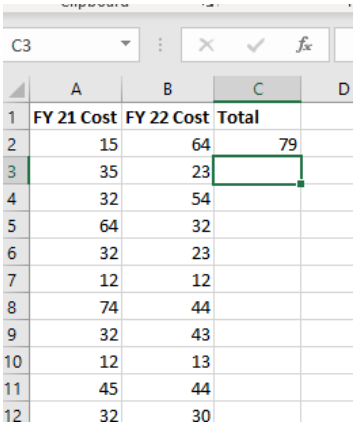
FY 21 Cost	FY 22 Cost	Total
15	64	
35	23	
32	54	
64	32	
32	23	
12	12	
74	44	
32	43	
12	13	
45	44	
32	30	

You could very easily create the formula "=15+64" in the first row under the "total" heading, but it wouldn't be very efficient to have to hand-write each of those formulas. To increase efficiency, you can link the cells in the "total" column to the cells in the other two columns to get your answer. Here's how to do it:

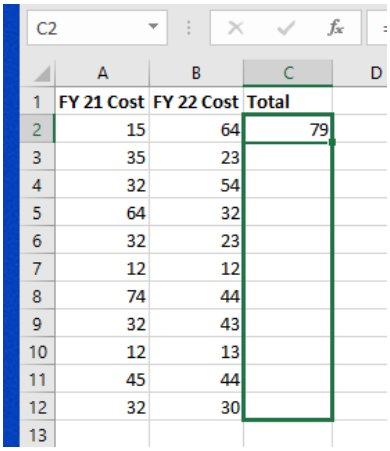
1. In the "Total" column, type the "=" sign to get started on a formula.
2. Then click on the first box in the first column (that says "15"), type "+", and then click on the first box in the second column (that says "64"). It should look like this:



3. Press enter. It will look like this, perfectly adding the two sums:



4. Now, to calculate the same sums for each row, click on C3, containing the formula you just made, and you will see a small green box appear in the bottom right-hand corner of that cell. Click on it, and drag it down to C12:



5. When you release, it will look like this – all calculated for you! You can use the same tactic to calculate other such things.

	A	B	C
1	FY 21 Cost	FY 22 Cost	Total
2	15	64	79
3	35	23	58
4	32	54	86
5	64	32	96
6	32	23	55
7	12	12	24
8	74	44	118
9	32	43	75
10	12	13	25
11	45	44	89
12	32	30	62

Basic formulas you may want to remember (remember that each starts with an = sign): =sum will add a group of numbers together, =average will average a group of numbers together, =counta will count the number of data points that exist in a range.

Linking Cells Between Two Tabs

This section builds off the previous section, "linking cells to other cells." Simply put, you can use the same premise discussed in that section between two tabs in an Excel sheet.

Here is an example – imagine some data exits in "Sheet 1":

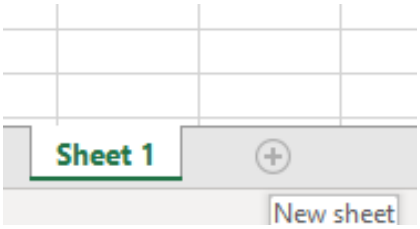
Fiscal Year	Department	Budget Total
22	Recreation	$ 100,000
22	DPW	$ 5,000,000
21	Recreation	$ 100,000
21	DPW	$ 4,900,000
20	Recreation	$ 95,000
20	DPW	$ 4,850,000
22	Town Manager	$ 300,000
21	Town Manager	$ 290,000
20	Town Manager	$ 280,000
22	Senior Center	$ 385,000
21	Senior Center	$ 395,000
20	Senior Center	$ 375,000

But instead of presenting the data in this manner, you want to make a chart that easily shows how much each of these four departments has been allocated in the past three years. What you can do is this:

1. Filter the current sheet so that the data is sorted by department:

Fiscal Year	Department	Budget Total
22	DPW	$ 5,000,000
21	DPW	$ 4,900,000
20	DPW	$ 4,850,000
22	Recreation	$ 100,000
21	Recreation	$ 100,000
20	Recreation	$ 95,000
22	Senior Center	$ 385,000
21	Senior Center	$ 395,000
20	Senior Center	$ 375,000
22	Town Manager	$ 300,000
21	Town Manager	$ 290,000
20	Town Manager	$ 280,000

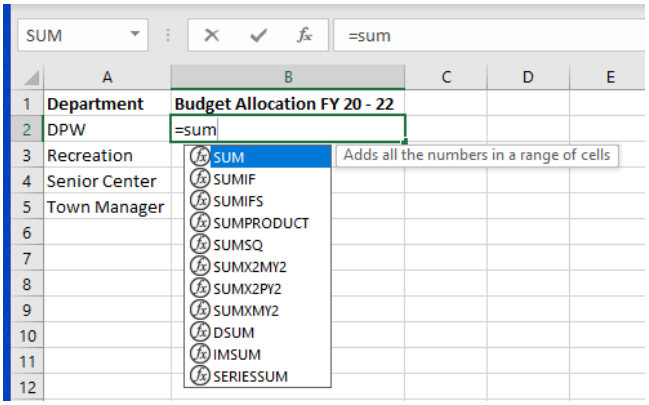
2. Make a new sheet by clicking the plus sign at the bottom of the Excel window, near where it says "Sheet 1":



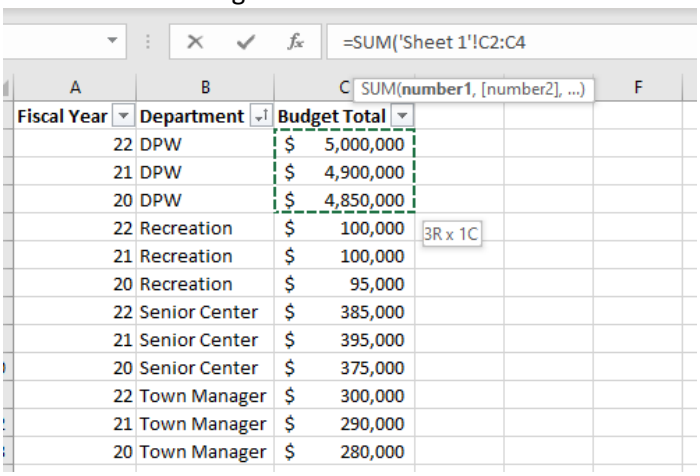
3. In the new sheet, create a table in the image that you want it to appear, like so:

Department	Budget Allocation FY 20 - 22
DPW	
Recreation	
Senior Center	
Town Manager	

4. Next, type "=" in box B2 to get your formula started, then type "SUM" – click on the formula suggestion that pops up.



5. Click on Sheet 1.
6. Select the box that includes DPW's FY 22 budget total (box B2 in Sheet 1), and scroll down to select all three Budget Totals for DPW:



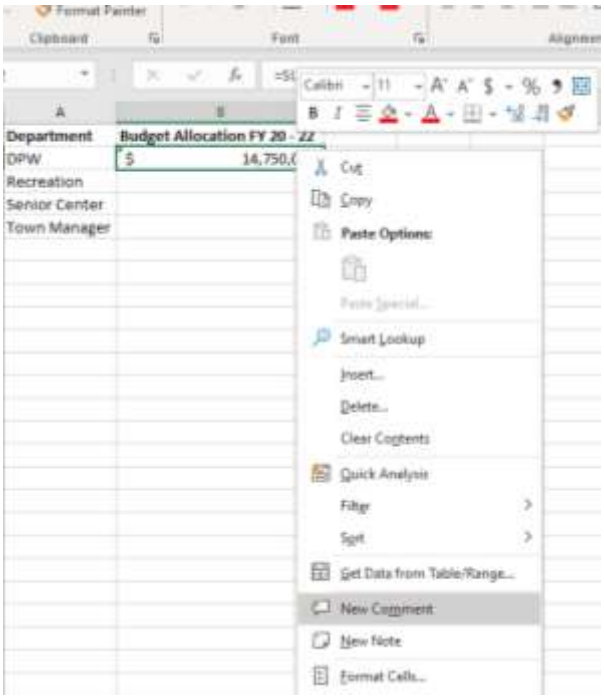
7. Press enter, and you'll see the sum of those numbers appear in your table in Sheet 2!

Department	Budget Allocation FY 20 - 22
DPW	$ 14,750,000
Recreation	
Senior Center	
Town Manager	

8. Repeat for the other departments until your table in Sheet 2 is complete.

Inserting Comments

Working on an Excel sheet with someone else and want to leave them a message – or even leave yourself a reminder? It's easy – to do so, just select the cell(s) that you want to comment on, right click on that/those cell(s), and click on the "New Comment" tab that pops up:



Once you've clicked on that, type your comment and press "enter". That saves the comment. Then, the cell will be marked with a small purply-pink triangle in the top right-hand corner – hold your cursor over that mark to read the comment later on!

VLookup, HLookup, Conditional Formatting, and Pivot Tables

These are very advanced mechanics that require more detailed training, but can be very useful in a professional setting.