What is the purpose of the Excel COUNTIFS function and how is it used?

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The Excel COUNTIFS function is a built-in formula that is used for counting cells that meet multiple criteria. Its purpose is to provide a quick and efficient way to count the number of cells that meet specific conditions in a given range of data. This function allows users to specify multiple criteria in different columns or ranges, and the result will be the number of cells that fulfill all of the specified conditions. This function is particularly useful for analyzing large datasets and identifying specific data points that meet certain criteria. It also allows for more complex counting operations compared to other counting functions such as COUNT or COUNTA. Overall, the COUNTIFS function is a valuable tool for data analysis and helps users to efficiently extract and summarize data from a large set of information.

Excel COUNTIFS Function

COUNTIFS Function

The **COUNTIFS** function is a premade function in Excel, which counts cells in a range based on one or more **true** or **falsecondition**.

It is typed `=COUNTIFS`:

=COUNTIFS(**criteria_range1**, **criteria1**, , ...)

The **conditions** are referred to as `critera1, criteria2, ..` and so on, which can check things like:

If a number is **greater than** another number `>`If a number is **smaller than** another number `<`If a number or text is **equal** to something `=`

The `criteria_range1`, `criteria_range2`, and so on, are the ranges where the function check for the conditions.

Note: The different parts of the function are separated by a symbol, like comma `,` or semicolon `;`

The symbol depends on your Language Settings.

Example COUNTIFS function

Find the number of 1st Generation Water type Pokemon:

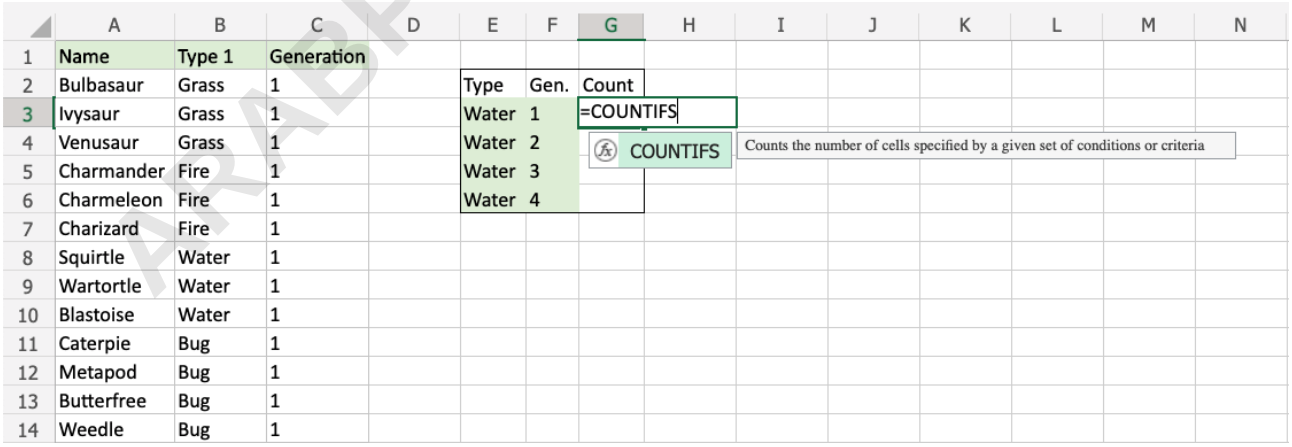
The conditions are that the type is "Water" and Generation is 1.

	A	B	C	D	E	F	G	H
1	Name	Type 1	Generation					
2	Bulbasaur	Grass	1		Type	Gen.	Count	
3	Ivysaur	Grass	1		Water	1		
4	Venusaur	Grass	1		Water	2		
5	Charmander	Fire	1		Water	3		
6	Charmeleon	Fire	1		Water	4		
7	Charizard	Fire	1					
8	Squirtle	Water	1					
9	Wartortle	Water	1					
10	Blastoise	Water	1					
11	Caterpie	Bug	1					
12	Metapod	Bug	1					
13	Butterfree	Bug	1					
14	Weedle	Bug	1					

Note: The full dataset continues after row 14, all the way down to row 759.

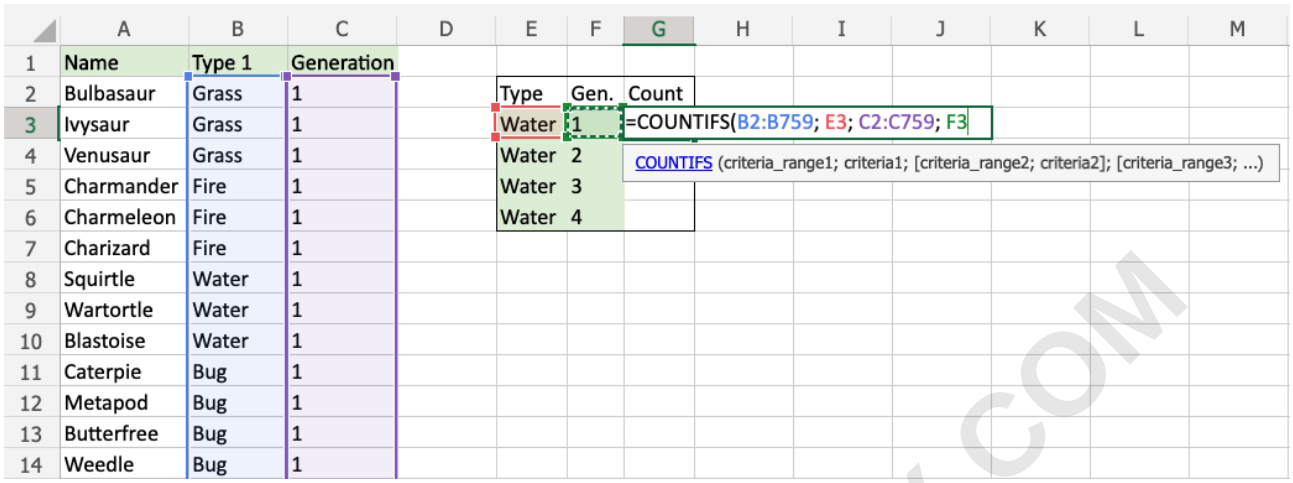
Example **COUNTIFS** function, step by step:

Select the cell `G3`Type `=COUNTIFS`Double click the **COUNTIFS** command



Specify the range for the type `B2:B759` (the Type 1 values)Type `,`Specify the criteria (the cell `E3`, which has the value "Water")Type `,`Specify the range for the second condition`C2:C759` (the Generation values)Type `,`Specify the criteria (the cell `F3`, which has the value "1")Hit enter

Note: You can add more conditions by repeating steps 7-10 before hitting enter.

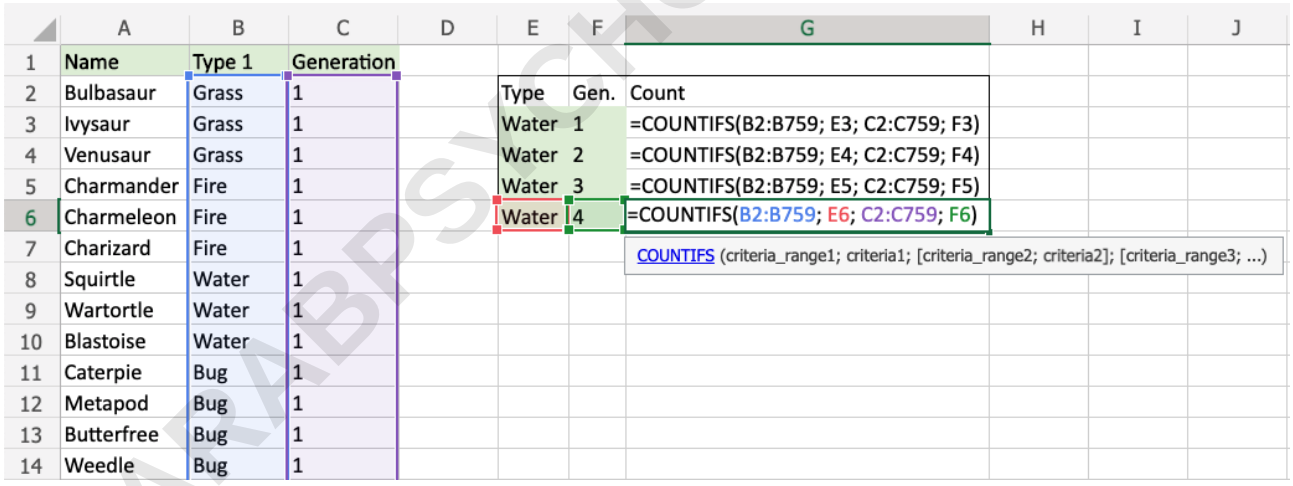


	A	B	C	D	E	F	G	H	I	J	K	L	M
1	Name	Type 1	Generation										
2	Bulbasaur	Grass	1		Type	Gen.	Count						
3	Ivysaur	Grass	1		Water	1	=COUNTIFS(B2:B759; E3; C2:C759; F3						
4	Venusaur	Grass	1		Water	2							
5	Charmander	Fire	1		Water	3							
6	Charmeleon	Fire	1		Water	4							
7	Charizard	Fire	1										
8	Squirtle	Water	1										
9	Wartortle	Water	1										
10	Blastoise	Water	1										
11	Caterpie	Bug	1										
12	Metapod	Bug	1										
13	Butterfree	Bug	1										
14	Weedle	Bug	1										

COUNTIFS (criteria_range1; criteria1; [criteria_range2; criteria2]; [criteria_range3; ...])

The function now counts the number of 1st Generation Water type Pokemon.

The function can be repeated for Water type Pokemon for the following Generations to compare them:



	A	B	C	D	E	F	G	H	I	J
1	Name	Type 1	Generation							
2	Bulbasaur	Grass	1		Type	Gen.	Count			
3	Ivysaur	Grass	1		Water	1	=COUNTIFS(B2:B759; E3; C2:C759; F3)			
4	Venusaur	Grass	1		Water	2	=COUNTIFS(B2:B759; E4; C2:C759; F4)			
5	Charmander	Fire	1		Water	3	=COUNTIFS(B2:B759; E5; C2:C759; F5)			
6	Charmeleon	Fire	1		Water	4	=COUNTIFS(B2:B759; E6; C2:C759; F6)			
7	Charizard	Fire	1							
8	Squirtle	Water	1							
9	Wartortle	Water	1							
10	Blastoise	Water	1							
11	Caterpie	Bug	1							
12	Metapod	Bug	1							
13	Butterfree	Bug	1							
14	Weedle	Bug	1							

COUNTIFS (criteria_range1; criteria1; [criteria_range2; criteria2]; [criteria_range3; ...])

Note: You can use the filling function for the other rows, but make sure to use absolute references for the ranges.

Now, we can see the total number of Water type Pokemon between generations 1-4:

	A	B	C	D	E	F	G	H
1	Name	Type 1	Generation					
2	Bulbasaur	Grass	1		Type	Gen.	Count	
3	Ivysaur	Grass	1		Water	1	30	
4	Venusaur	Grass	1		Water	2	18	
5	Charmander	Fire	1		Water	3	25	
6	Charmeleon	Fire	1		Water	4	13	
7	Charizard	Fire	1					
8	Squirtle	Water	1					
9	Wartortle	Water	1					
10	Blastoise	Water	1					
11	Caterpie	Bug	1					
12	Metapod	Bug	1					
13	Butterfree	Bug	1					
14	Weedle	Bug	1					