

How to Count Filtered Rows in Excel Using the SUBTOTAL Function

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One of the most common challenges users face when analyzing large datasets in Excel is accurately determining the size of a dynamically filtered list. When standard counting functions are applied, they often calculate the total number of records in the original dataset, completely ignoring the visible rows defined by the active filters. To overcome this limitation and ensure precise data analysis, we must employ the specialized SUBTOTAL function, which is specifically designed to operate only on visible cells. For example, if you have a list of employee records filtered by department, you can enter `=SUBTOTAL(103, B:B)` in a cell above the data, where B:B is the column with names, to count exactly how many filtered rows are currently displayed.

The SUBTOTAL function provides a robust method for calculating various aggregates—such as sums, averages, maximums, and counts—exclusively for filtered rows. Understanding this function is paramount for anyone seeking to perform meaningful calculations on subsets of data, guaranteeing that your summaries reflect the visual state of the worksheet. This powerful feature eliminates the need for complex array formulas or iterative counting methods when dealing with dynamic data views.

To implement this counting mechanism effectively, you need to use the correct function number argument within the SUBTOTAL function. Specifically, using the function code 103 (representing the COUNTA function variant for visible cells) is the recommended approach for finding the count of rows regardless of whether they contain numerical or textual data. This article will provide a comprehensive guide, focusing on the practical application of this formula to count visible, filtered rows in your spreadsheets.

The most straightforward and efficient way to count the number of non-empty cells in a filtered range in Excel is by employing the following specialized syntax, which mandates the use of the function code dedicated to ignoring hidden cells:

SUBTOTAL(103, A1:A10)

Note that the value 103 is a critical function code argument specifically used for finding the count of non-empty cells within a range of filtered rows. This code ensures that any rows hidden by the AutoFilter feature are completely excluded from the resulting calculation, guaranteeing accuracy in dynamic data analysis.

The following practical example details the necessary steps and illustrates how to successfully implement this function in a common business data context.

Example: Precise Counting of Filtered Rows in Excel

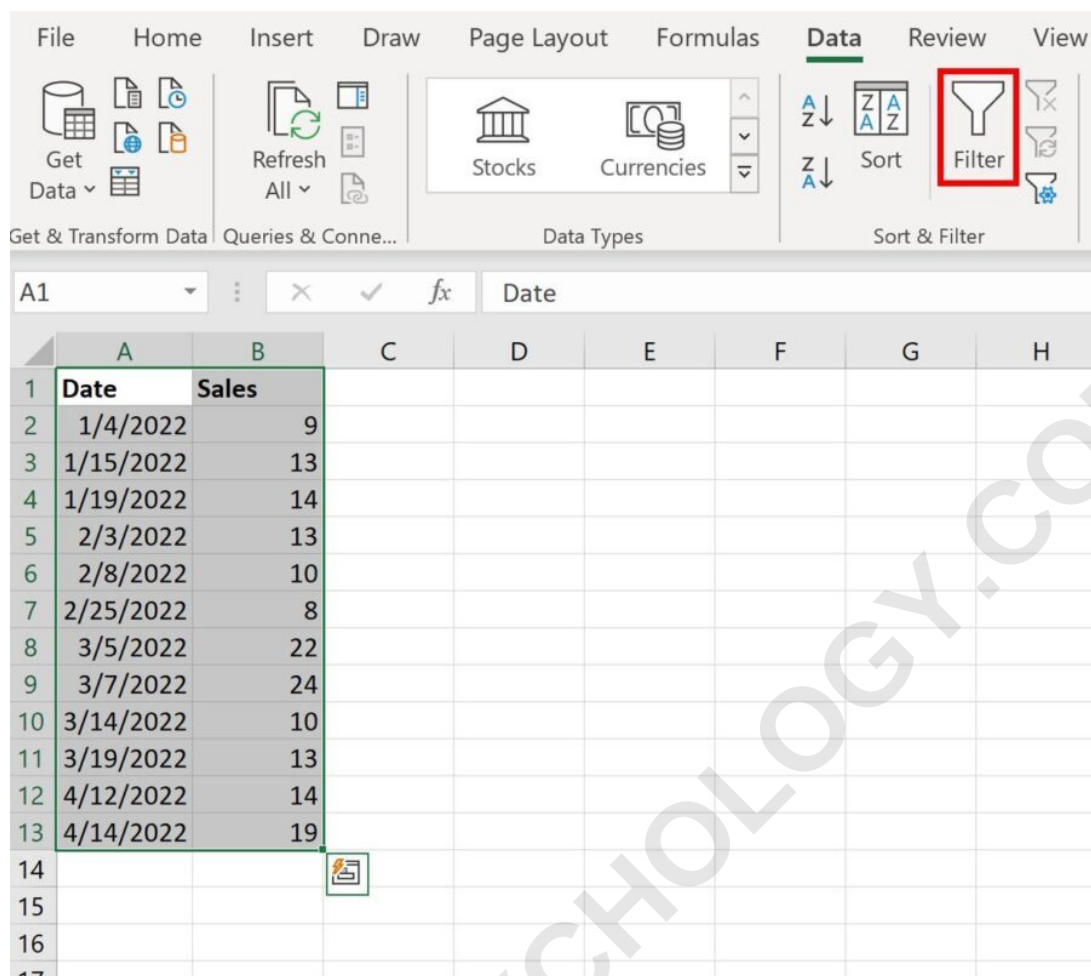
Let us assume we have the following sample dataset that meticulously tracks the number of sales transactions completed across various days throughout the business quarter. Our immediate goal

is to accurately count the records only after specific filtering criteria have been applied. This provides a clear path to generating focused, accurate metrics without manual counting.

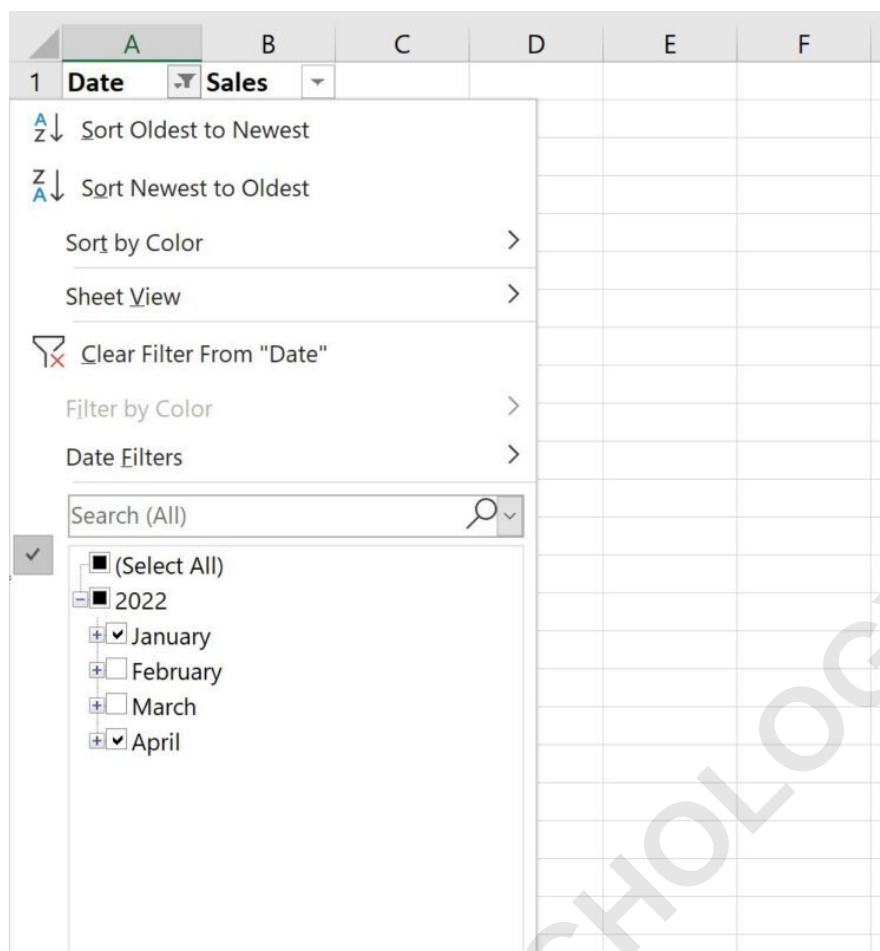
	A	B	C	D	E	F
1	Date	Sales				
2	1/4/2022	9				
3	1/15/2022	13				
4	1/19/2022	14				
5	2/3/2022	13				
6	2/8/2022	10				
7	2/25/2022	8				
8	3/5/2022	22				
9	3/7/2022	24				
10	3/14/2022	10				
11	3/19/2022	13				
12	4/12/2022	14				
13	4/14/2022	19				
14						
15						
16						
17						
18						
19						

Next, we will apply an advanced filter to the data so that the view is limited to only showing the dates that fall specifically within January or April. This step is crucial for isolating the desired subset of data for our count.

To enable filtering, highlight the entire cell range containing the data, which is **A1:B13** in this illustration. Once selected, navigate to the **Data** tab situated along the top ribbon menu and proceed to click the **Filter** button, which activates the AutoFilter capability on the column headers.



Subsequently, click the dropdown arrow located next to the **Date** column header. In the filtering dialog box that appears, carefully ensure that only the boxes corresponding to **January** and **April** are checked, confirming the specific criteria for visibility. Once these selections are finalized, click **OK** to apply the filter and transform the data view:



The dataset will then be automatically adjusted and filtered, revealing only the rows where the recorded dates fall within our selected months of January or April. This visible data subset is now ready for accurate counting using the specialized function:

	A	B	C	D	E	F
1	Date	Sales				
2	1/4/2022	9				
3	1/15/2022	13				
4	1/19/2022	14				
12	4/12/2022	14				
13	4/14/2022	19				
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						

The Problem with Standard COUNT Functions on Filtered Data

If we were to attempt to use the conventional COUNT function, for example, `=COUNT(A2:A13)`, to count the number of values in the Date column after filtering, the result would be inaccurate. Standard functions inherently operate on the entire range defined, meaning they actually return the total count of all original values, completely ignoring the currently hidden rows.

This common mistake leads to misleading results, as demonstrated in the image below, where the standard function still registers 12 records, despite only 5 being visible. This scenario emphatically proves why relying on functions not designed to handle visibility states compromises data integrity in filtered environments.

B15		fx		=COUNT(A2:A13)		
	A	B	C	D	E	F
1	Date	Sales				
2	1/4/2022	9				
3	1/15/2022	13				
4	1/19/2022	14				
12	4/12/2022	14				
13	4/14/2022	19				
14						
15	COUNT	12				
16						
17						
18						
19						
20						
21						
22						
23						
24						

Using SUBTOTAL(103) to Count Visible Rows

To correctly count only the visible cells, we must utilize the SUBTOTAL function combined with the appropriate function code. By inputting the formula `=SUBTOTAL(103, A2:A13)` into a reporting cell, we command Excel to execute a non-blank count exclusively on the rows that remain visible after filtering.

This implementation ensures that the count is dynamically updated whenever the filter criteria are changed, offering real-time accuracy for reporting on subsets of data. The result provides a reliable measure of the current, visible data size.

B15		=SUBTOTAL(103, A2:A13)				
	A	B	C	D	E	F
1	Date	Sales				
2	1/4/2022	9				
3	1/15/2022	13				
4	1/19/2022	14				
12	4/12/2022	14				
13	4/14/2022	19				
14						
15	COUNT	5				
16						
17						
18						
19						
20						
21						
22						
23						
24						

From the resulting output, we can definitively observe that the count correctly returns **5**, which is the exact number of rows corresponding to the days that fall within the specified filter criteria (January or April). This confirms the proper functioning of the formula in excluding hidden data.

Distinguishing Between Function Codes 102 (COUNT) and 103 (COUNTA)

It is important to understand that the SUBTOTAL function offers two specialized function codes for counting filtered data: 102 and 103. The choice between these two hinges on whether the reference column contains solely numerical data or a mix of data types.

In our previous example, since the Date column contains values that Excel treats as numbers, using 102 would also yield the correct result, demonstrating its viability when dealing strictly with numeric columns. However, relying on 103 offers greater flexibility and robustness across varying data types.

B15		=SUBTOTAL(102, A2:A13)					
	A	B	C	D	E	F	
1	Date	Sales					
2	1/4/2022	9					
3	1/15/2022	13					
4	1/19/2022	14					
12	4/12/2022	14					
13	4/14/2022	19					
14							
15	COUNT	5					
16							
17							
18							
19							
20							
21							
22							
23							
24							

Here is a detailed breakdown of the difference between these two function code variants, which are crucial for precise counting:

Function Code 102: This variant corresponds directly to the behavior of the standard COUNT function. It exclusively counts only those visible cells within the designated range that contain numerical values. Text, logical values, or error messages in visible cells will be ignored.

Function Code 103: This variant mirrors the functionality of the COUNTA function. It counts all visible cells that are not empty, regardless of their content type—be it numbers, dates, text strings, or formulas resulting in non-blank outcomes.

For optimal reliability, it is highly recommended to use the value 103 in your formula unless you are absolutely certain that the reference column will only ever contain numerical data. The COUNTA behavior of 103 provides a universal method for counting visible records based on row presence rather than data type.

Best Practices for Reliable Filtered Counting

To maintain the highest level of accuracy when counting filtered rows, users should adhere to several key best practices. Firstly, always reference a column that is guaranteed to be non-blank for every row of data, such as a primary key or unique identifier column. This minimizes the risk of accidental undercounting due to sporadic empty cells.

Secondly, place your SUBTOTAL formula in a cell located outside the filtered data range. This ensures that the formula itself is not hidden or affected by the filtering process, allowing it to remain permanently visible and functional as a data summary tool.

Finally, remember that the SUBTOTAL function specifically addresses filtering applied using the AutoFilter command (the dropdown arrows). It does not automatically ignore rows hidden manually or by using the older Hide command. For accurate filtered counts, ensure that the data selection is achieved exclusively through the filter mechanism.

Summary of the SUBTOTAL Counting Method

The ability to accurately count filtered rows is a foundational skill in dynamic data analysis using Excel. By moving beyond the inherent limitations of standard formulas like COUNT and COUNTA, and embracing the power of the SUBTOTAL function with its specific function codes (102 or 103), users can maintain highly accurate and responsive metrics, regardless of how complex their data filtering might become. Always choose the function code that best aligns with the data types present in your counting column--103 being the most robust choice for counting visible non-empty cells.