

How to use Google Sheets: INDEX MATCH with Multiple Criteria

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The ability to efficiently look up and retrieve data is fundamental to successful data analysis in any spreadsheet environment. In Google Sheets, combining the INDEX function and the MATCH function into a single powerful construct allows users to perform highly sophisticated lookups. When extended to handle multiple criteria simultaneously, the INDEX MATCH with Multiple Criteria technique becomes an indispensable tool for navigating complex data structures.

This advanced formula is specifically designed to search across multiple columns or fields, ensuring that every specified condition is met before returning the corresponding data from a designated result column. It is particularly useful when dealing with large datasets where a simple single-criterion lookup, like that offered by traditional methods, would prove insufficient or inflexible. Mastering this technique not only saves significant time but also enhances the accuracy and efficiency of data retrieval processes within your spreadsheet workflow.

The Advantages of INDEX MATCH Over Traditional Lookups

While functions like VLOOKUP are commonplace, they often impose rigid structural constraints that limit data analysis capabilities. The primary drawback of VLOOKUP is its inherent requirement that the lookup key must reside in the leftmost column of the specified range. Furthermore, handling multiple search criteria requires nested formulas or auxiliary columns, adding unnecessary complexity to the spreadsheet structure.

The combination of the INDEX function and the MATCH function effectively bypasses these restrictions. The INDEX function is responsible for retrieving a value from a specific row and column of a range, while the MATCH function determines the precise row number needed by INDEX. By separating these tasks, we gain complete flexibility regarding the location of both the lookup columns and the return column.

Crucially, when implementing multiple criteria, we leverage the power of logical operations. The formula structure converts each criteria check into a Boolean array of TRUEs (1s) and FALSEs (0s). By multiplying these arrays together, the resulting row will only yield a final value of 1 if, and only if, all criteria in that specific row are simultaneously TRUE. This elegant mathematical approach allows us to condense multiple complex conditions into a single argument for the MATCH function.

Deconstructing the Multi-Criteria Formula Structure

The multi-criteria INDEX MATCH formula operates as a sophisticated lookup mechanism, often behaving similarly to an Array formula in its execution, even without the explicit requirement for Control+Shift+Enter in modern Google Sheets implementations. Understanding the role of each component is vital for accurate implementation and troubleshooting.

The outer function, INDEX, simply requires a reference range (the column containing the value you wish to retrieve) and a row number. The row number is where the heavy lifting occurs, derived entirely from the inner MATCH function. The core challenge is instructing the MATCH function to find a row that satisfies not just one, but several criteria simultaneously.

This is achieved by setting the search key for the MATCH function to the value 1. We then construct the lookup range using the logical multiplication of all our criteria arrays. When criteria arrays are multiplied, rows where all conditions are met resolve to $1 * 1 * 1 \dots$, resulting in 1. Rows where any condition fails resolve to 0, since any multiplication by zero yields zero. The MATCH function thus searches for the first occurrence of the number 1 within this derived array, providing the exact row position that satisfies all criteria to the outer INDEX function.

Essential Syntax for Multiple Criteria Lookups

To successfully perform an INDEX MATCH operation in Google Sheets using multiple criteria, the following foundational syntax must be utilized. This structure ensures that the logical multiplication is correctly interpreted by the spreadsheet engine:

You can use the following basic syntax to perform an **INDEX MATCH** in Google Sheets with multiple criteria:

=INDEX(reference,MATCH(1,(criteria1)*(criteria2)*(criteria3)*...,0))

The arguments within this syntax are defined as follows:

reference: This defines the target range--the column from which the desired value will be returned once a successful match is found.

MATCH: This function is the core search engine, determining the relative position of the match key within the specified lookup arrays.

1: This fixed value serves as the search key. We are explicitly looking for the row index where the product of all criteria equals 1, signifying that all conditions are met.

criteria1, criteria2, criteria3: These are the conditional checks (e.g., $A:A="Team X"$). Each condition must be enclosed in parentheses and separated by the multiplication operator ($*$).

0: This optional parameter specifies the search type for MATCH, ensuring it searches for an **exact value** match (the number 1).

The following practical scenario illustrates precisely how to translate this complex syntax into a functional formula for real-world data retrieval.

Step-by-Step Practical Example Setup

To demonstrate the efficacy of the multi-criteria INDEX MATCH formula, consider a common scenario involving a data table of professional athletes. Suppose we maintain a detailed spreadsheet in Google Sheets tracking various metrics for basketball players across different teams and positions. This dataset includes columns for Team, Position, All-Star Status, and Points scored.

The data table below provides a visual representation of the information we will be working with. Our goal is to retrieve a specific metric (Points) only when a combination of three distinct conditions--Team, Position, and All-Star Status--are all satisfied on the same row. This requires the precision offered by the advanced lookup method.



For our initial lookup query, we want to precisely determine the "Points" value associated with a player who meets the following demanding criteria: The player must be on the **Mavs** team, hold the Position of **Forward**, and possess an All Star Status marked as **Yes**. Only one row in our dataset satisfies all three criteria, and we must construct the formula to correctly isolate that specific data point.

Applying the Advanced Formula to Data

To implement the lookup based on our three criteria, we designate cells outside the main data table (A15, B15, C15 in the accompanying image) to hold our search values: "Mavs," "Forward," and "Yes." This practice allows for easy modification of the criteria without needing to edit the core formula itself, establishing a dynamic lookup interface.

We then construct the INDEX MATCH formula, carefully referencing the criteria cells and the corresponding lookup columns. The desired result column is D:D (Points). The resulting formula, designed to find the Points value based on the criteria provided in Row 15, is as follows:

=INDEX(D:D,MATCH(1,(A:A=A15)*(B:B=B15)*(C:C=C15),0))

In this formula, the first argument, D:D, is the **reference** range. The subsequent arguments define the logical test: `(A:A=A15)` checks if the Team column matches A15 ("Mavs"); `(B:B=B15)` checks if the Position column matches B15 ("Forward"); and `(C:C=C15)` checks if the All-Star Status column matches C15 ("Yes"). The multiplication operator (`\*`) ensures that all three conditions must be true for the MATCH function to find its target value of 1.

Interpreting the Results and Dynamic Updating

When executed, the MATCH function processes the entire range, identifying the row index where all conditions resolve to TRUE (1). This index is then passed to the INDEX function, which extracts the corresponding value from the "Points" column (D:D). The following screenshot confirms the result:



As demonstrated, the formula successfully returns a Points value of **11**. This is the correct numerical value associated with the player who satisfies the combination of being on the **Mavs** team, holding a position of **Forward**, and having an All Star Status of **Yes**, validating the power and accuracy of this multi-criteria lookup method.

One of the significant advantages of using cell references for criteria (A15, B15, C15) is the dynamic nature of the formula. If we modify the input values in row 15, our INDEX MATCH formula automatically recalculates and updates the retrieved Points value instantly. This capability transforms the lookup into a powerful, interactive data analysis tool, allowing users to rapidly test different combinations of criteria.

Mastering Complex Data Retrieval

Consider a scenario where the search criteria are updated to locate data for a different type of player combination. For instance, suppose we now wish to find the Points value for the player associated with the **Spurs** team, who holds the position of **Guard**, and maintains an All Star Status of **Yes**. By simply changing the values in cells A15, B15, and C15 to "Spurs," "Guard," and "Yes," respectively, the output updates without requiring any modification to the underlying formula.

This dynamic updating capability underscores why the multi-criteria INDEX MATCH is favored in complex spreadsheet modeling over static lookups. It provides robust flexibility necessary for interactive data dashboards and reporting systems within Google Sheets.

The final example illustrates this flexibility, showing the formula successfully locating the new matching record and returning the corresponding value:

D15		fx	$\text{=INDEX(D:D,MATCH(1,(A:A=A15)*(B:B=B15)*(C:C=C15),0))}$			
	A	B	C	D	E	
1	Team	Position	All Star Status	Points		
2	Mavs	Guard	Yes	29		
3	Mavs	Guard	No	22		
4	Mavs	Forward	No	14		
5	Mavs	Forward	Yes	11		
6	Mavs	Center	Yes	30		
7	Spurs	Guard	No	12		
8	Spurs	Guard	Yes	22		
9	Spurs	Forward	No	20		
10	Spurs	Forward	Yes	35		
11	Spurs	Center	Yes	19		
12						
13						
14	Team	Position	All Star Status	Points		
15	Spurs	Guard	Yes	22		
16						
17						
18						
19						
20						

By mastering the structured syntax and understanding the logical principles behind the multiplication of criteria arrays, you gain a superior method for data retrieval. This approach is not only more powerful than alternatives like VLOOKUP but also offers increased stability and readability for complex lookups across vast datasets.