

# How to Use VLOOKUP in Google Sheets to Find the Maximum Value

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The VLOOKUP function is one of the most powerful and frequently used tools within Google Sheets, designed specifically to facilitate efficient data retrieval. It operates by searching for a specified value in the first column of a range and returning a corresponding value from a designated column within the same row. This functionality is absolutely essential when handling voluminous datasets where manual searching would be impractical or error-prone.

While standard VLOOKUP excels at exact matches or near-matches based on a known criterion, users often face a more complex requirement: retrieving data associated not with a known value, but with the largest or maximum value present in a range. For instance, determining the team name corresponding to the highest score achieved in a sports league. This task requires a smart combination of functions, leveraging the power of data aggregation before executing the lookup operation.

The conventional approach of simply inputting a fixed value fails when the target value--the maximum--is dynamic and changes as the source data is updated. To address this, we must first calculate the maximum value within the desired range, and subsequently use that calculated result as the primary search key for the VLOOKUP function. This dynamic strategy ensures that the formula always identifies and returns the correct corresponding record, regardless of changes to the underlying data.

## Google Sheets: Use VLOOKUP to Return Max Value

### The Essential Combination: VLOOKUP and MAX Functions

To successfully retrieve a value corresponding to the maximum entry in a range using Google Sheets, we must nest the MAX function within the VLOOKUP structure. This combined approach allows the spreadsheet to perform two distinct, yet interconnected, operations: first, calculating the highest numerical entry, and second, utilizing that result to locate the associated text or numerical data.

The synergy between these two functions provides a robust and elegant solution for data analysis needs that extend beyond simple searches. By determining the maximum value internally, the formula eliminates the requirement for pre-sorting the data or manually identifying the peak value, significantly enhancing efficiency, especially in analyses involving thousands of rows of data.

The fundamental principle relies on the output of the MAX function serving as the input for the VLOOKUP's primary argument. Specifically, the search key (the first argument of VLOOKUP) is replaced by the entire calculation of `MAX(range)`. This dynamic substitution ensures that the lookup always targets the row containing the maximum value.

## Detailed Syntax Breakdown for Maximum Value Retrieval

You can use the following syntax in Google Sheets, combining the MAX function and the VLOOKUP function to find the maximum value in a specified range and subsequently return a corresponding value from an adjacent column:

**=VLOOKUP(MAX(A2:A11), A2:B11, 2, FALSE)**

This particular formula employs the MAX function to first calculate the highest numerical entry found within the column range specified as A2:A11. Once the maximum value is determined (e.g., 40), this result instantaneously becomes the search key for the outer VLOOKUP operation.

The VLOOKUP function then proceeds to look up this maximum value within the table array A2:B11. The arguments 2 and FALSE specify that the function should return the value from the second column of the array (Column B in this case) and demand an exact match, respectively. Since the maximum value is guaranteed to exist in the range, the function reliably returns the associated data point.

Understanding each component is crucial for effective implementation:

**MAX(A2:A11):** This segment isolates the single largest number in the 'Points' column. This calculated number is what VLOOKUP will search for.

**A2:B11:** This is the range defining the table array. Importantly, the column containing the maximum value (A2:A11) must be the first column of this table array.

**2:** This is the column index, indicating that the corresponding value should be pulled from the second column of the array (the Team name column).

**FALSE:** This ensures an exact match is required for the lookup value, which is standard practice when retrieving associated categorical data.

## Example Walkthrough: Identifying the Top Performer's Team

To illustrate the practical application of this powerful formula, consider a typical scenario involving performance tracking. Suppose we are managing the following datasets, which meticulously tracks the points scored by various basketball players alongside their respective team affiliations. Our objective is to efficiently locate the team name associated with the absolute highest point total recorded in this dataset.

	A	B	C
1	<b>Points</b>	<b>Team</b>	
2	22	Mavs	
3	14	Spurs	
4	19	Rockets	
5	13	Kings	
6	40	Warriors	
7	30	Nets	
8	28	Lakers	
9	17	Thunder	
10	15	Blazers	
11	11	Jazz	
12			
13			
14			
15			
16			

As analysts, we must formulate a query that automatically scans the entire 'Points' column (Column A), determines the largest numerical entry, and then retrieves the corresponding 'Team' name (Column B). This methodology ensures that if the data is updated daily, the result is always accurate without requiring manual intervention or sorting.

We can achieve this by typing the combined formula into an output cell, such as cell **D2**, which is designated for displaying the final result. The formula structure remains consistent with our established syntax, using the Points column as the range for the MAX function calculation and the combined Team/Points columns as the lookup array.

## Executing the Formula in Google Sheets

To execute the intended query--looking up the maximum value in the points column and returning the corresponding team name--we input the following expression into cell **D2**:

**=VLOOKUP(MAX(A2:A11), A2:B11, 2, FALSE)**

The sequence of operations performed by Google Sheets upon execution is critical to understanding the result. First, the `MAX(A2:A11)` portion is evaluated, which scans the range and identifies the highest score, which is 40 in this specific instance. This value, 40, is then handed over to the VLOOKUP function.

The VLOOKUP function then searches for 40 in the first column of the array `A2:B11`. Upon locating the row containing 40, it shifts its focus to the second column of that row and retrieves the corresponding text value. The following screenshot visually confirms the result of this operation:

D2    `=VLOOKUP(MAX(A2:A11), A2:B11, 2, FALSE)`

	A	B	C	D
1	<b>Points</b>	<b>Team</b>		<b>Team with Max Points</b>
2		22 Mavs		Warriors
3		14 Spurs		
4		19 Rockets		
5		13 Kings		
6		40 Warriors		
7		30 Nets		
8		28 Lakers		
9		17 Thunder		
10		15 Blazers		
11		11 Jazz		
12				
13				
14				

As demonstrated, the formula successfully uses the MAX function to find the maximum value of **40** in the points column. Subsequently, the VLOOKUP function retrieves the associated team name, which is **Warriors**, confirming the highest scoring player belongs to that team. This method provides undeniable clarity and efficiency when dealing with top-tier performance identification.

### Alternative Approach: Finding the Maximum Value Associated with a Specific Lookup Criterion (MAXIFS)

While the VLOOKUP and MAX combination is ideal for retrieving data corresponding to the overall maximum in a column, a different requirement might arise: finding the maximum value subject to specific conditions. For example, determining the highest score achieved only by players on a particular team. This conditional maximum calculation is best handled by the specialized MAXIFS function.

The MAXIFS function is designed to calculate the maximum value within a range based on one or more specified criteria applied to other corresponding ranges. Unlike VLOOKUP, MAXIFS returns the maximum numerical value itself, not an associated value from another column, making it

perfectly suited for conditional aggregation tasks.

The structure of the MAXIFS function requires three primary components: the range containing the values to maximize, the range containing the criterion (or condition), and the specific criterion itself. This robust structure allows for precise filtering before the aggregation step is executed.

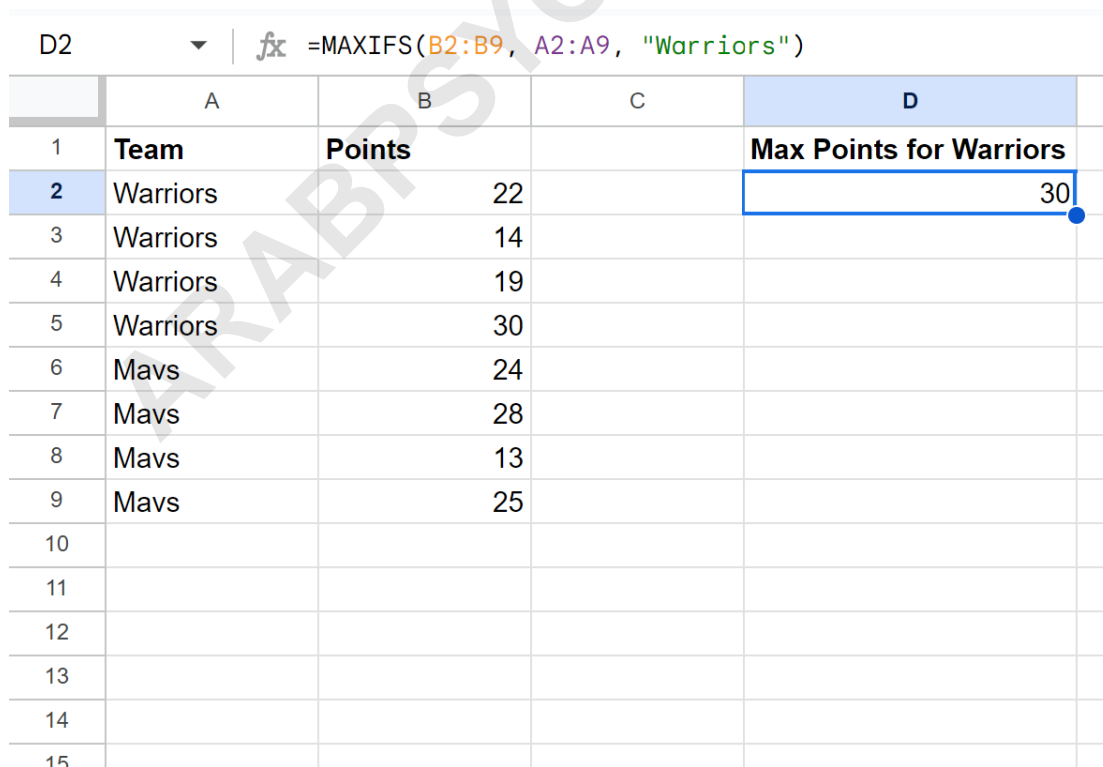
## Implementing MAXIFS for Conditional Maximums

Suppose, using the same datasets, we specifically wanted to find the maximum points scored exclusively by players belonging to the "Warriors" team. We would utilize the MAXIFS function as follows:

**=MAXIFS(B2:B9, A2:A9, "Warriors")**

In this formula, B2:B9 represents the range where the maximum value is sought (the Points column). The range A2:A9 is the criteria range (the Team column), and "Warriors" is the specific condition applied to that range. The function only considers points where the corresponding team name matches the specified criteria, effectively filtering the dataset before calculating the maximum.

The following screenshot shows how to use this formula in practice:



D2 | fx =MAXIFS(B2:B9, A2:A9, "Warriors")

	A	B	C	D
1	<b>Team</b>	<b>Points</b>		<b>Max Points for Warriors</b>
2	Warriors	22		30
3	Warriors	14		
4	Warriors	19		
5	Warriors	30		
6	Mavs	24		
7	Mavs	28		
8	Mavs	13		
9	Mavs	25		
10				
11				
12				
13				
14				
15				

The formula returns a value of **30**. This indicates that among all the entries associated with the Warriors team within this segment of the datasets, 30 represents the highest score achieved. This contrasts sharply with the VLOOKUP+MAX method, which returned 40 (the overall maximum score), illustrating the different analytical goals achieved by each function combination.

## Distinguishing Between VLOOKUP+MAX and MAXIFS Use Cases

Choosing the correct functional approach depends entirely on the analytical goal:

**VLOOKUP(MAX(...))**: This combination is used when the goal is to identify the overall maximum value in a single column and subsequently retrieve an associated piece of non-numerical data (like a name, category, or ID) from a corresponding column. The output is typically text or categorical data.

**MAXIFS(...)**: This function is used when the goal is to find the maximum numerical value within a range, but only after filtering that range based on one or more logical criteria applied to other columns. The output is always a single numerical maximum value.

If you need to know **who** achieved the maximum score (requiring a name lookup), use VLOOKUP(MAX()). If you need to know the **highest score** achieved by a specific group (requiring conditional filtering), use MAXIFS function. Both functions are indispensable tools for sophisticated data manipulation in Google Sheets, but they solve fundamentally different problems related to maximum value extraction.

Mastering the nesting of functions, particularly combining the VLOOKUP and MAX function, unlocks significant analytical power in Google Sheets. This technique allows data professionals to execute complex lookups against dynamic maximum criteria, ensuring real-time accuracy and efficiency in data reporting and analysis. For further development of your spreadsheet expertise, explore the following resources which detail additional common tasks and advanced formula construction.

The following tutorials explain how to perform other common tasks in Google Sheets: