

How do I compare Four Columns in Excel (With Example)

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Data validation and consistency checks are fundamental requirements in modern data management. When working within Excel, a common task involves verifying whether corresponding values across multiple columns are identical. Whether you are reconciling financial records, verifying survey results, or ensuring data integrity across different datasets, the ability to quickly compare four columns simultaneously is invaluable for efficiency and accuracy. This article serves as an expert guide, detailing the precise steps necessary to execute a four-column comparison using advanced yet straightforward logical functions in Excel. We will provide a structured approach, complete with a practical example, to help you master this essential data technique.

The method we employ relies on the powerful combination of the IF function and the AND function, allowing us to generate a definitive Boolean output for each row. By the conclusion of this tutorial, you will not only understand the underlying Boolean logic but also possess the skills to apply this formula robustly, saving considerable time and minimizing manual error when dealing with large datasets. We emphasize clarity and accuracy, ensuring that every step, from formula construction to the application of visual aids like Conditional Formatting, is covered in meticulous detail.

Understanding the Core Logic: The IF and AND Functions

To effectively compare four separate columns row by row, we must employ logical functions that evaluate multiple criteria simultaneously. The primary tool for this task is the nested use of the AND function within the structure of the IF function. The AND function is crucial because it requires that all specified logical tests return a value of TRUE before it, itself, returns TRUE. If even one comparison fails, the entire AND function returns FALSE.

When comparing four columns (say, B, C, D, and E), we need to set up three distinct equality tests to ensure that B is equal to C, C is equal to D, and D is equal to E. If B = C, C = D, and D = E, then logically, B must equal C, D, and E. The IF function then acts as a wrapper, taking the result of the AND function (TRUE or FALSE) and translating it into user-friendly text outputs, such as "Equal" or "Not Equal." This setup provides a powerful, single-cell indicator of data consistency across the entire row.

You can use the following basic formula structure to compare four columns in Excel, assuming you are starting your comparison on row 2:

=IF(AND(B2=C2,C2=D2,D2=E2),"Equal","Not Equal")

This particular formula meticulously compares the values found in cells **B2**, **C2**, **D2**, and **E2**. The formula evaluates three core logical conditions: Is B2 equal to C2? Is C2 equal to D2? Is D2 equal to E2? Only when all three comparisons return TRUE does the AND function succeed. If all of the

values are verified as equal, the formula returns the text string **"Equal"**. Conversely, if any of the three comparisons fail, indicating a discrepancy in any of the four columns, the formula returns **"Not Equal"**.

Practical Application Scenario: Analyzing Sports Data

To illustrate the efficiency and utility of this comparison method, we will utilize a realistic dataset. Imagine you are managing records for a sports league and need to track the highest scorer across four consecutive games for various teams. Ensuring that the high scorer remains consistent across all four tracking periods is essential for performance analysis or data auditing. Our hypothetical dataset, shown below, involves comparing player names recorded in four separate columns representing Game 1, Game 2, Game 3, and Game 4.

The objective is to quickly identify which teams maintained the same highest scorer across all four games versus those that experienced a change. This is a perfect scenario for leveraging the robust comparison formula we developed, as manually scanning hundreds or thousands of rows for text discrepancies is highly prone to human error and inefficiency. We require an automated, cell-based solution.

Suppose we have the following dataset that shows the highest scorer on various basketball teams during four different games:

	A	B	C	D	E	F
1	Team	Game 1	Game 2	Game 3	Game 4	
2	A	Doug	Doug	Ken	Doug	
3	B	Mike	Mike	Mike	Mike	
4	C	Greg	Tony	Rob	Trent	
5	D	Ty	Ty	Spencer	Spencer	
6	E	Will	Will	Will	Will	
7	F	Kenny	Mark	Kenny	Kenny	
8	G	Michael	Scott	Michael	Michael	
9	H	Dwight	Howard	Howard	Greg	
10	I	Andy	Andy	Andy	Andy	
11	J	Trent	Trent	Trent	Doug	
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The columns are structured as follows: Column A contains the Team Name, Column B contains the high scorer for Game 1, Column C for Game 2, Column D for Game 3, and Column E for Game 4. Our comparison will take place in Column F, starting at cell F2. The result in Column F will instantly inform us whether the player names in columns B, C, D, and E match for that specific team and row. This setup allows for immediate visualization of data anomalies or consistent performance records.

Implementing the Comparison Formula

With our dataset prepared, the next step is to insert the logical formula into the first comparison cell, which is **F2**. This is the critical starting point, as this single formula will be the template for all subsequent checks. We will be testing the condition that the value in B2 is equal to C2, which is equal to D2, which in turn is equal to E2. Remember that the text criteria within the formula, "Equal" and "Not Equal," are case-sensitive if you intend to use them later for filtering or advanced lookups, though Excel's cell comparison itself is case-insensitive for text values unless explicitly changed via functions like EXACT.

We type the following formula into cell **F2** to test if the four values in the first row (the values for the first team) are all equal:

=IF(AND(B2=C2,C2=D2,D2=E2),"Equal","Not Equal")

Upon execution, the formula meticulously checks each condition. In the case of the first row (Team 1), the formula quickly determines that the values are not identical across all four columns. For instance, if Game 1 lists Player X and Game 4 lists Player Y, the final result of the AND function is FALSE, triggering the FALSE output of the IF function, which is **"Not Equal"**. This initial step is vital for verifying the formula's accuracy before deploying it across the entire range.

The following screenshot demonstrates the practical result of applying this formula specifically to the first row of data:

F2 : ✕ ✓ <i>fx</i> =IF(AND(B2=C2,C2=D2, D2=E2),"Equal","Not Equal")							
	A	B	C	D	E	F	G
1	Team	Game 1	Game 2	Game 3	Game 4	All Equal?	
2	A	Doug	Doug	Ken	Doug	Not Equal	
3	B	Mike	Mike	Mike	Mike		
4	C	Greg	Tony	Rob	Trent		
5	D	Ty	Ty	Spencer	Spencer		
6	E	Will	Will	Will	Will		
7	F	Kenny	Mark	Kenny	Kenny		
8	G	Michael	Scott	Michael	Michael		
9	H	Dwight	Howard	Howard	Greg		
10	I	Andy	Andy	Andy	Andy		
11	J	Trent	Trent	Trent	Doug		
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As anticipated, the formula returns **Not Equal** for the first row, indicating that the four scorer names in the first row do not all perfectly match. This single result validates the formula's logical structure and prepares us for scaling the operation. Had the result been "Equal," it would signify complete consistency for that team across the four games tracked.

Extending the Formula Across the Dataset

Once the formula is correctly entered in cell F2, the true power of spreadsheet software comes into

play: rapid automation. There is no need to manually type or copy the formula into every subsequent row. By utilizing the Excel fill handle--the small green square at the bottom-right corner of the selected cell--we can quickly propagate the comparison logic down Column F for every team in our dataset.

When you drag the formula down, Excel automatically adjusts the row references due to the use of relative cell referencing (B2 changes to B3, C2 changes to C3, and so on). This allows the formula to accurately test B3=C3, C3=D3, and D3=E3 for the second row, and continues this pattern for every row below. This bulk operation transforms minutes of manual checking into seconds of automated computation, greatly improving the efficiency of data integrity checks.

We can then drag this formula from cell **F2** down to the remaining cells in column F to test for matches in each row:

	A	B	C	D	E	F	G	H
1	Team	Game 1	Game 2	Game 3	Game 4	All Equal?		
2	A	Doug	Doug	Ken	Doug	Not Equal		
3	B	Mike	Mike	Mike	Mike	Equal		
4	C	Greg	Tony	Rob	Trent	Not Equal		
5	D	Ty	Ty	Spencer	Spencer	Not Equal		
6	E	Will	Will	Will	Will	Equal		
7	F	Kenny	Mark	Kenny	Kenny	Not Equal		
8	G	Michael	Scott	Michael	Michael	Not Equal		
9	H	Dwight	Howard	Howard	Greg	Not Equal		
10	I	Andy	Andy	Andy	Andy	Equal		
11	J	Trent	Trent	Trent	Doug	Not Equal		
12								
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Careful observation of the results reveals the rows where the values are perfectly aligned. Notice that the formula only returns **Equal** for the rows where the cell values are identical across each of the four comparative columns (B, C, D, and E). These "Equal" flags instantly identify consistent data points, while the "Not Equal" flags draw attention to data that requires further investigation or reconciliation. This immediate categorization is the intended goal of this multi-column comparison technique.

Enhancing Visibility with Conditional Formatting

While the textual outputs "Equal" and "Not Equal" are informative, visual cues are often faster for identifying patterns and anomalies in large datasets. Conditional Formatting is an indispensable Excel feature that allows us to apply specific formatting (like background colors or font styles) to cells based on their content or the result of a logical test. By applying Conditional Formatting, we can cause the "Equal" results to visually pop out, making it effortless to scan the results column.

To implement this enhancement, we will focus on highlighting the cells in Column F that contain the text "Equal," signifying a perfect match across the four comparison columns. This visual distinction helps analysts prioritize their attention, focusing quickly on discrepancies or confirming data consistency at a glance. The process involves selecting the range of result cells and setting a rule based on the exact text string.

You can apply Conditional Formatting to the rows where all four cell values are equal by following these structured steps:

Highlight the cell range **F2:F11** (or the entire range of your comparison results).

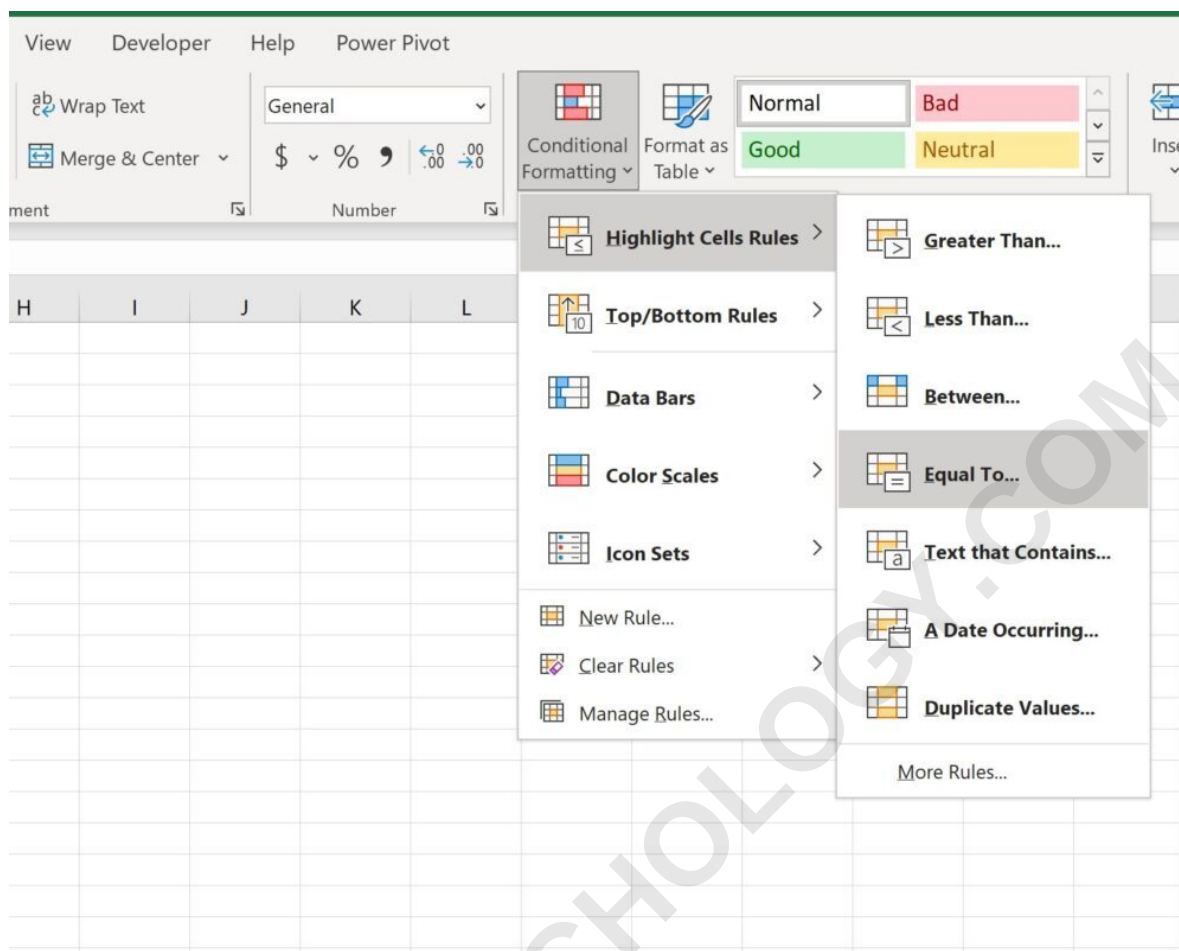
Navigate to the **Home** tab on the Excel ribbon.

Click on the **Conditional Formatting** button.

Select **Highlight Cell Rules** from the dropdown menu.

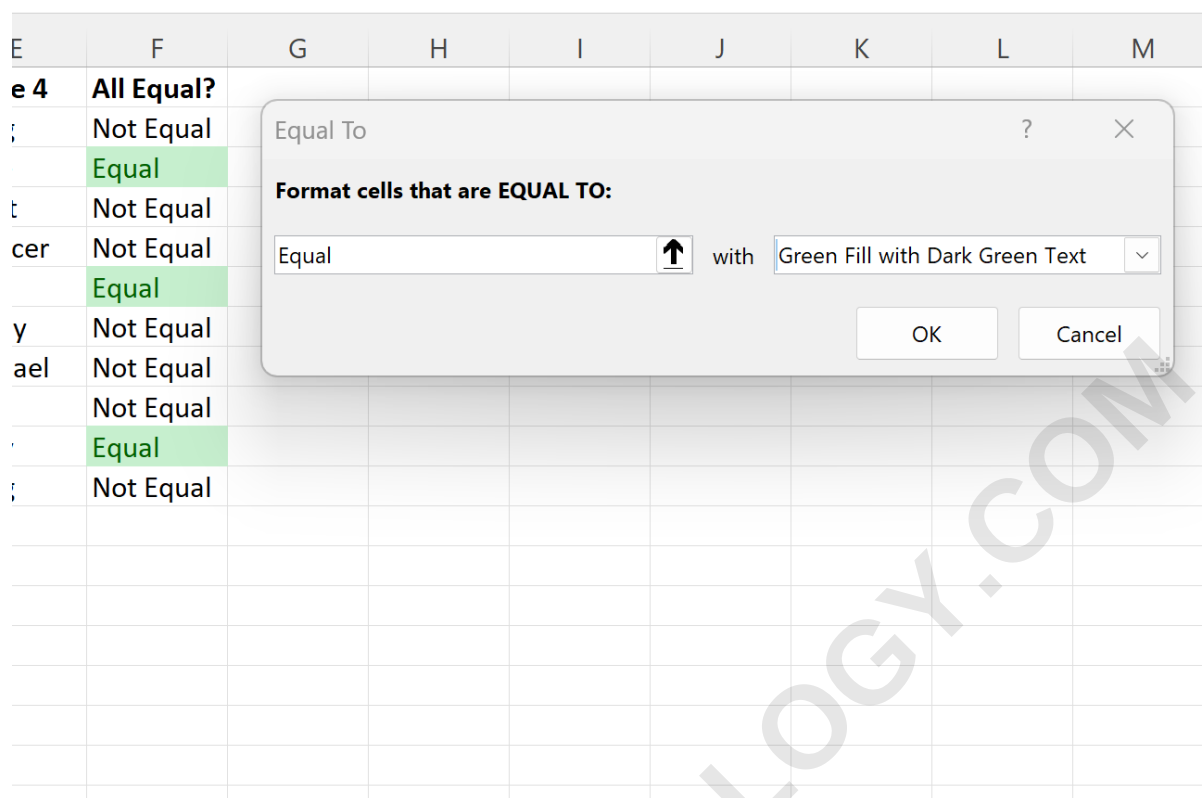
Finally, click on the **Equal To** option, preparing the system to look for an exact text match.

The following screenshot demonstrates the menu navigation required to initiate the Conditional Formatting rule setup:



In the new dialogue window that appears, you must specify the exact text you wish to match and select the visual formatting you desire. This stage dictates what the cells will look like when the condition is met. We recommend choosing a distinct color, such as a bright green fill, to symbolize success and consistency, making the results highly visible against the white background of the spreadsheet. Ensure that the text input matches the output of your IF function exactly--in this case, "Equal."

In the new window that appears, type **Equal** into the box and choose a fill color (for instance, Light Green Fill with Dark Green Text), then click **OK**:



The application of this formatting rule yields an immediately readable result set. The rows that have matching values across all four columns will now be visually marked, typically filled with green, providing an instant summary of data consistency for the entire range. This final step completes the process, transitioning the raw comparison output into actionable, visual data.

	A	B	C	D	E	F	G
1	Team	Game 1	Game 2	Game 3	Game 4	All Equal?	
2	A	Doug	Doug	Ken	Doug	Not Equal	
3	B	Mike	Mike	Mike	Mike	Equal	
4	C	Greg	Tony	Rob	Trent	Not Equal	
5	D	Ty	Ty	Spencer	Spencer	Not Equal	
6	E	Will	Will	Will	Will	Equal	
7	F	Kenny	Mark	Kenny	Kenny	Not Equal	
8	G	Michael	Scott	Michael	Michael	Not Equal	
9	H	Dwight	Howard	Howard	Greg	Not Equal	
10	I	Andy	Andy	Andy	Andy	Equal	
11	J	Trent	Trent	Trent	Doug	Not Equal	
12							
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Benefits and Limitations of This Comparison Method

The IF/AND structure offers significant benefits for data analysis. Firstly, it provides undeniable clarity; the output is binary (Equal or Not Equal), leaving no ambiguity regarding data consistency. Secondly, it is highly scalable. The relative referencing allows the formula to be deployed across thousands of rows instantly. Thirdly, by combining the formula with Conditional Formatting, we create a robust, easily auditable system where inconsistencies are immediately apparent, crucial for quality assurance processes.

However, it is important to acknowledge the limitations of this specific method. This formula is designed exclusively for testing absolute equality. It does not provide insight into the nature of the difference (e.g., how many columns mismatch, or what the differing values are). For datasets requiring partial matching, fuzzy logic, or tolerance thresholds (such as comparing numerical values within a certain variance), alternative functions like COUNTIF, SUMPRODUCT, or complex array formulas may be required. Furthermore, this method is best suited for comparing data types that are expected to be identical, such as text strings (names) or fixed numerical identifiers.

In conclusion, mastering the IF/AND comparison formula is a fundamental skill for anyone performing routine data analysis in Excel. By utilizing this technique, analysts can efficiently verify the consistency of four columns of data, ensuring data integrity across large tables and significantly

streamlining the data validation workflow.

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