

How to Sum Multiple Columns in Power BI: A Step-by-Step Guide

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Power BI is a powerful suite of Business Intelligence tools designed by Microsoft, enabling organizations to transform raw data into rich, interactive visualizations and actionable insights. A foundational requirement in data preparation and analysis is the ability to aggregate measures effectively. While Power BI excels at aggregating values vertically (down a column), summing values horizontally across multiple columns within the same row requires a specific approach using Data Analysis Expressions (DAX). This technique is indispensable when dealing with data schemas where metrics are spread across various descriptive fields, such as consolidating sales figures from different regions or summing scores from multiple trials.

The common aggregation function, like `SUM()`, typically operates on a single column. When the objective is to create a new derived column that represents the total of several existing columns for every single record, we must utilize iterative functions that establish a row context. A row context ensures that the calculation engine evaluates the formula for each individual row independently before moving to the next. This capability is essential for creating calculated columns, which store a result for every single row in the underlying data table. Mastering this specific DAX pattern is crucial for advanced Power BI users looking to optimize their data models and perform calculations in a concise and efficient manner.

Sum Multiple Columns in Power BI (With Example)

Introduction to Aggregation in Power BI

When working with relational data models in Power BI, data aggregation serves as the backbone for meaningful analysis. Users frequently need to combine figures--be it total sales, total expenses, or, as we will demonstrate, total points scored--from various transactional fields. Standard Power BI measures often default to summing values down a column across the entire dataset or within specific filtering contexts. However, summing across columns requires iterating through each row and performing the addition horizontally, often demanding the use of specialized DAX functions designed for this exact purpose.

The core challenge lies in shifting from the standard filter context, which governs how data is aggregated based on report visuals, to a specific row context. This means the calculation engine must evaluate the formula for each individual row independently. This capability is essential for creating calculated columns, which store a result for every single row in the underlying data table. We will utilize the powerful combination of `CALCULATE` and `SUMX` to establish this behavior and achieve the desired horizontal aggregation.

Why Sum Multiple Columns? Understanding the Use Case

The need to sum multiple columns often arises when data is structured in a wide format, where

different metrics belonging to the same category are stored in distinct columns rather than rows. For example, monthly budgets might be split into columns labeled "Q1 Budget," "Q2 Budget," "Q3 Budget," and "Q4 Budget." To calculate the "Annual Budget," we must aggregate these four columns horizontally for each project or department listed in the row.

This horizontal summation is crucial for quickly aggregating specific data points and gaining immediate insights without altering the fundamental structure of the source data. By creating a new calculated column, the aggregated total becomes a persistent, reusable element within the data model, ready for immediate use in visualizations, conditional formatting, and other complex calculations throughout the Power BI report environment.

Introducing the DAX Formula for Row-Level Summation

To correctly sum values across multiple columns within a single row, the most robust and commonly accepted technique involves using the iterative function SUMX within a calculated column. While one might initially attempt a simple addition of columns like `+`, wrapping this expression within SUMX ensures proper handling of the calculation, especially when dealing with complex data types or blank values.

The following syntax in DAX allows you to sum the values across multiple columns of a table in Power BI by forcing row-by-row iteration:

Sum Points = CALCULATE(SUMX('my_data', + +))

This particular formula creates a new calculated column named **Sum Points**. It utilizes SUMX to iterate through every row of the table named **my_data**, evaluating the arithmetic expression `+` for each record. The final result is a column containing the consolidated sum of the values in the **Game 1**, **Game 2**, and **Game 3** columns corresponding to that specific row.

Detailed Breakdown of the SUMX Function

Understanding the mechanism of SUMX is key to mastering row-level operations in Power BI. SUMX belongs to the family of X-functions (iterators) in DAX. It requires two mandatory arguments: the table over which to iterate, and the expression to evaluate for each row of that table.

The structure SUMX(