

Convert Date to Number in Google Sheets (3 Examples)

Authored by
Mohammed loot

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Understanding Dates as Serial Numbers in Google Sheets

Welcome to this comprehensive technical guide focused on transforming dates into numerical values within [Google Sheets](#). Although dates are displayed in familiar calendar formats (like MM/DD/YYYY), the application, similar to Microsoft Excel, handles them internally as sequential [serial numbers](#). This underlying numerical structure is fundamental to how spreadsheets manage time, enabling accurate calculations, efficient sorting, and seamless integration into complex formulas. Grasping this core concept is the first step toward unlocking sophisticated data manipulation techniques.

The necessity for date conversion arises when standard arithmetic operations are required. For instance, determining the precise duration between two events, performing comparative analysis in a purely numerical context, or preparing datasets for external analytical tools often mandates numerical date inputs. Treating dates numerically allows the software to calculate differences, sums, and averages accurately, which would be impossible if dates were merely treated as text strings.

Throughout this tutorial, we will detail three distinct and highly effective methods for converting dates, catering to various spreadsheet needs, from individual cell operations to large-scale data cleansing.

We will specifically focus on the following practical conversion techniques:

Converting a **single date entry** directly into its numerical equivalent using a dedicated function.

Transforming a **range of dates** simultaneously by adjusting cell formatting properties.

Calculating the **exact duration or number of days elapsed** between two specific time points.

Let us now proceed to explore the practical applications of these powerful methods to significantly enhance your data management capabilities in Google Sheets.

Why Numerical Date Conversion is Essential

The primary motivation for converting dates to numbers stems from the spreadsheet application's internal time-tracking mechanism. Every date is assigned a unique [serial number](#), based on a fixed starting point, or epoch date. In Google Sheets (and standard Excel implementations), **January 1, 1900**, is defined as the number 1. Consequently, January 2, 1900, is represented by the number 2, and so on. This system ensures that every date, regardless of its displayed format, possesses a quantifiable, numerical value.

This numerical foundation makes mathematical operations incredibly straightforward. For example,

calculating the number of days between two dates, such as "4/10/2022" and "1/1/1900," simply requires Google Sheets to subtract their respective serial numbers. This process is what enables powerful functions like `DATEDIF` to calculate durations accurately, or simple subtraction operations to determine the exact span between two points in time. Without this fundamental conversion, dates would remain inert text, rendering arithmetic impossible.

Beyond calculations, converting dates to their numerical serial representation is vital for ensuring **data consistency**. When importing data from disparate sources, date formats can vary wildly. Uniformly converting these dates into standard serial numbers eliminates errors and ambiguities, guaranteeing accurate comparisons and facilitating robust [data analysis](#) and reporting across your entire spreadsheet.

Method 1: Converting a Single Date Using DATEVALUE

When the task involves converting a specific, isolated date, such as "4/10/2022," into its corresponding serial number, the dedicated `DATEVALUE` function is the most direct tool. This function is specifically designed to parse a date string and return the numerical equivalent based on the standard Google Sheets date system, where the count begins from 1 on [January 1, 1900](#).

The syntax for `DATEVALUE` is simple and highly effective: `=DATEVALUE("date_string")`. The critical requirement is that the "date_string" must be enclosed in double quotation marks and presented in a format that Google Sheets can universally recognize. Failure to use a recognizable format--such as "MM/DD/YYYY," "DD/MM/YYYY," or "YYYY-MM-DD"--will typically result in an error message, as the function cannot successfully interpret the text as a date.

To illustrate this process, if we wish to convert the date April 10, 2022, to its numerical representation, we would input the following formula into an empty cell:

```
=DATEVALUE("4/10/2022")
```

The function executes by calculating the precise number of days that have elapsed since the epoch date of [January 1, 1900](#), up to the date specified within the formula. The output produced by this calculation is the exact serial number corresponding to April 10, 2022.

The following screenshot visually confirms the practical application of the `DATEVALUE` function:

	A	B	C	D
A1	<code>=DATEVALUE("4/10/2022")</code>			
1	44661			
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				

As clearly demonstrated, the result of the conversion is **44,661**, signifying that exactly 44,661 days separate January 1, 1900, and April 10, 2022. This numerical value is now ready for incorporation into any necessary mathematical operations or comparative analysis.

Method 2: Bulk Conversion via Formatting Options

For scenarios involving large datasets or a comprehensive list of dates that require simultaneous conversion into their numerical serial representation, Google Sheets provides an elegant and highly efficient solution through its [number formatting](#) capabilities. This approach bypasses the need to write individual formulas for each cell, making it ideal for data cleaning and preparation.

Consider the following example, where you have a column populated with various dates that need to be instantly converted to numbers:

	A	B	C	D
1	1/4/2022			
2	1/6/2022			
3	1/15/2022			
4	2/4/2022			
5	3/1/2022			
6	3/5/2022			
7	3/14/2022			
8	4/1/2022			
9	4/10/2022			
10	4/15/2022			
11	4/22/2022			
12				
13				
14				
15				
16				
17				
18				

To convert this entire range of dates into their corresponding serial numbers, follow these straightforward steps within the Google Sheets interface:

Select the Data Range: Highlight the specific column or range of cells containing the dates you intend to convert.

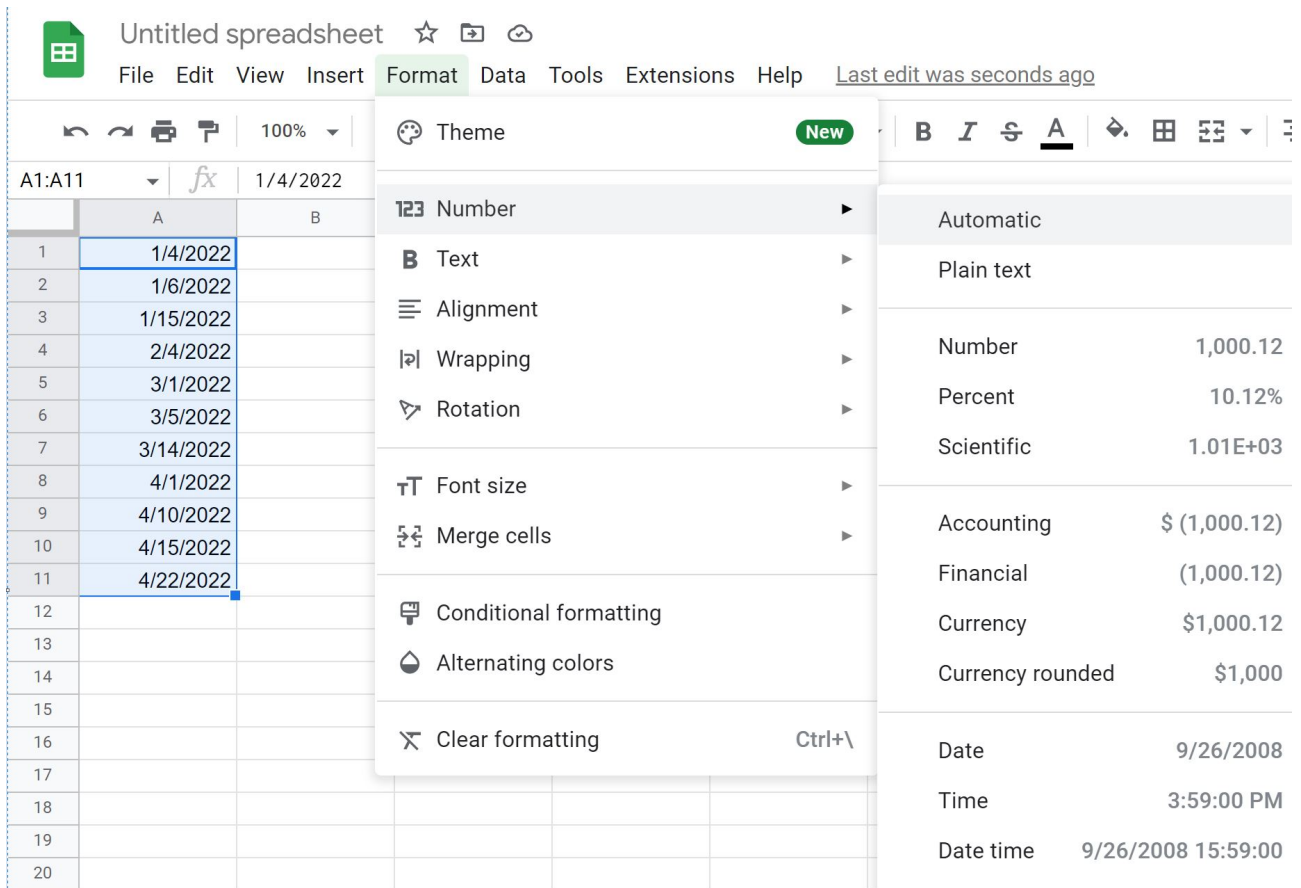
Access Formatting Options: Click on the **Format** tab located in the main menu bar of Google Sheets.

Choose Number Options: From the ensuing dropdown menu, hover over the **Number** selection.

Apply Numerical Format: Finally, explicitly select **Number** (or sometimes Automatic, though selecting Number ensures the date format is completely stripped away). This action instructs the spreadsheet to display the underlying numerical value instead of the date mask.

This process achieves the conversion instantly by utilizing the same fundamental serial date principle: each date is represented by the cumulative count of days since the starting point of [January 1, 1900](#).

The visual sequence below demonstrates the steps required to access and apply the number formatting option within the Google Sheets environment:



Once the numerical formatting is applied, every date in your selected range will instantaneously display its numerical serial equivalent, confirming the conversion from date representation to a pure number count based on the distance from [January 1, 1900](#).

The final outcome of this conversion process will present the dates as numerical serial dates, allowing for immediate numerical analysis:

	A	B	C	D
1	44565			
2	44567			
3	44576			
4	44596			
5	44621			
6	44625			
7	44634			
8	44652			
9	44661			
10	44666			
11	44673			
12				
13				
14				
15				
16				
17				
18				

This formatting technique stands as the fastest and most efficient method when converting multiple dates, making it an indispensable tool for data preparation.

Method 3: Calculating Duration Using DATEDIF

While the first two methods focus on converting dates to their absolute serial numbers, a frequent requirement is calculating the exact interval between two dates. For this purpose, Google Sheets provides the versatile [DATEDIF](#) function. This function is incredibly valuable for sophisticated duration calculations, such as determining the age of an entity, calculating precise project timelines, or assessing time elapsed.

The general syntax for the powerful [DATEDIF](#) function is `=DATEDIF(start_date, end_date, "unit")`.

start_date: This parameter must reference the chronological earlier date.

end_date: This parameter must reference the chronological later date.

"unit": This crucial argument specifies the desired output unit for the calculated difference. To return the number of days, you must use `"d"`. Other available units include `"m"` (months), `"y"` (years), and various combinations like `"md"` (days remaining after subtracting full months).

If, for instance, you wish to calculate the exact number of days between a date stored in cell **B2** (the start date) and a later date stored in cell **A2** (the end date), the formula is constructed as follows:

=DATEDIF(B2, A2, "d")

This specific formula accurately returns the count of full days that have elapsed between the two referenced dates. It is absolutely essential to ensure that the `start_date` precedes the `end_date`; if the order is reversed, the function will likely return a cryptic error message or an unexpected numerical result.

The following visual example demonstrates the application of the `DATEDIF` formula to calculate the duration between a date list in column A and a fixed reference date of January 1, 2022, located in column B:

B2		=DATEDIF(\$E\$1, A2, "d")				
	A	B	C	D	E	
1	Date	Date Difference		Starting Date	1/1/2022	
2	1/4/2022	3				
3	1/6/2022	5				
4	1/15/2022	14				
5	2/4/2022	34				
6	3/1/2022	59				
7	3/5/2022	63				
8	3/14/2022	72				
9	4/1/2022	90				
10	4/10/2022	99				
11	4/15/2022	104				
12	4/22/2022	111				
13						
14						
15						
16						
17						
18						

Interpreting the results generated in column B:

Between January 1, 2022, and January 4, 2022, the difference is precisely **3** days.

The interval between January 1, 2022, and January 6, 2022, calculates to **5** days.

Further down, the duration between January 1, 2022, and January 15, 2022, is calculated as **14** days.

This precise duration calculation capability makes [DATEDIF](#) indispensable for advanced data analysis requiring time intervals.

Troubleshooting Common Conversion Errors

While the processes for converting dates to numbers in Google Sheets are generally robust, users occasionally encounter hurdles. Understanding the most frequent issues is key to effective troubleshooting. One pervasive problem is caused by **date format** inconsistencies. If a date string is not interpreted as a valid date by the system (e.g., mixing US and European date conventions, or using "Jan 1st, 1900" instead of a numerical format), functions like `DATEVALUE` will return an error, and direct formatting changes will fail.

It is critical to ensure that your date strings are uniform and adhere strictly to the [locale settings](#) of your Google Sheet. You can verify and modify these settings via File > Spreadsheet settings. If dates are imported as plain text, you may need to utilize text manipulation functions such as `SPLIT`, `MID`, or `REGEXEXTRACT` in conjunction with the `DATE` function to reconstruct the text into a recognizable format before attempting conversion. This is a common step when cleaning imported data in [Google Sheets](#).

Another fundamental limitation to be aware of concerns dates preceding the defined epoch. Google Sheets, mirroring the standard in many spreadsheet programs, does not natively support dates before [January 1, 1900](#). Any attempt to convert or calculate dates prior to this epoch will inevitably result in an error, requiring users to verify that their data falls within the supported chronological timeline for accurate serial number conversions.

Conclusion and Key Takeaways

Mastering the conversion of dates into numerical values is an essential analytical skill for anyone working extensively with time-series or temporal data in a spreadsheet environment. Whether employing the `DATEVALUE` function for precise singular conversions, leveraging [number formatting](#) for efficient bulk operations, or utilizing [DATEDIF](#) to calculate complex intervals, these methods provide the necessary precision for effective data handling.

A consistent understanding that dates are fundamentally [serial numbers](#), starting at 1 on January 1, 1900, is the key to both accurate results and successful troubleshooting. Always prioritize verifying your data formats and locale settings to prevent common conversion errors, thereby

ensuring the accuracy and actionability of your dataset.

By effectively integrating these date conversion techniques into your standard workflow, you dramatically enhance the analytical capacity of your spreadsheets, facilitating more sophisticated reporting, reliable calculations, and insightful data comparisons across all your temporal data.