

# How can I interpolate missing values in Google Sheets?

Authored by  
**stats writer**

June 28, 2024

## RECOMMENDED CITATION

stats writer (2024). *How can I interpolate missing values in Google Sheets?*.

PSYCHOLOGICAL SCALES. Retrieved from <https://scales.arabpsychology.com/?p=155763>

Interpolation is a mathematical technique used to estimate unknown values based on existing data. In the context of Google Sheets, it refers to filling in missing values in a spreadsheet by using a formula to calculate the most likely value based on surrounding data points. This can be achieved by using the built-in functions such as AVERAGE, MEDIAN, or TREND, or by creating a custom formula using the IF or ISBLANK functions. Interpolating missing values in Google Sheets can help improve the accuracy of data analysis and visualizations, as well as ensure consistency and completeness in the spreadsheet. It is a useful tool for managing large datasets and can save time and effort in manually inputting missing values.

## Interpolate Missing Values in Google Sheets

**Often you may have one or more missing values in a series in Google Sheets that you'd like to fill in.**

**The following step-by-step example shows how to interpolate missing values in practice.**

### Step 1: Create the Data

**First, let's create a dataset in Google Sheets that contains some missing values:**

	A	B	C	D	E
1	<b>Data</b>				
2	3				
3	6				
4	8				
5	10				
6	14				
7	17				
8	20				
9					
10					
11					
12					
13	35				
14	39				
15	44				
16	49				
17	52				
18	57				
19	61				
20	65				
21	70				
22					

## Step 2: Calculate the Step Value

Next, we will use the following formula to determine what step value to use to fill in the missing data:

$$\text{Step} = (\text{End} - \text{Start}) / (\#\text{Missing observations} + 1)$$

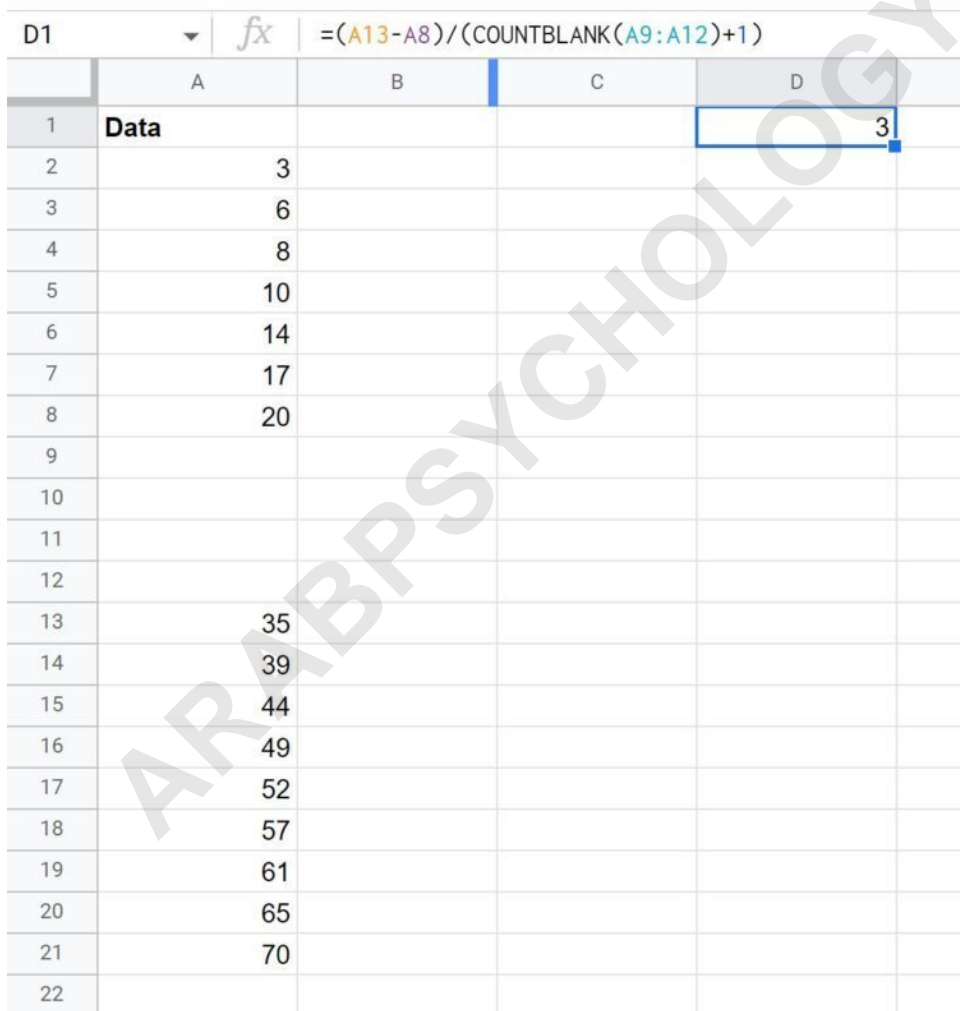
For this example, we would calculate the step value as:

$$\text{Step} = (35 - 20) / (4 - 1) = 3$$

We can type the following formula into cell D1 to automatically calculate this value:

**`=(A13-A8)/(COUNTBLANK(A9:A12)+1)`**

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



The screenshot shows a Google Sheet with the following data:

	A	B	C	D
1	Data			3
2		3		
3		6		
4		8		
5		10		
6		14		
7		17		
8		20		
9				
10				
11				
12				
13		35		
14		39		
15		44		
16		49		
17		52		
18		57		
19		61		
20		65		
21		70		
22				

### Step 3: Interpolate the Missing Values

Next, we need to add the step value to the missing values, starting with the first missing value:

	A	B	C
1	<b>Data</b>		
2		3	
3		6	
4		8	
5		10	
6		14	
7		17	
8		20	
9		23	
10			
11			
12			
13		35	
14		39	
15		44	
16		49	
17		52	
18		57	
19		61	
20		65	
21		70	
22			

	A	B	C
1	<b>Data</b>		
2	3		
3	6		
4	8		
5	10		
6	14		
7	17		
8	20		
9	23		
10	26		
11	29		
12	32		
13	35		
14	39		
15	44		
16	49		
17	52		
18	57		
19	61		
20	65		
21	70		
22			
23			

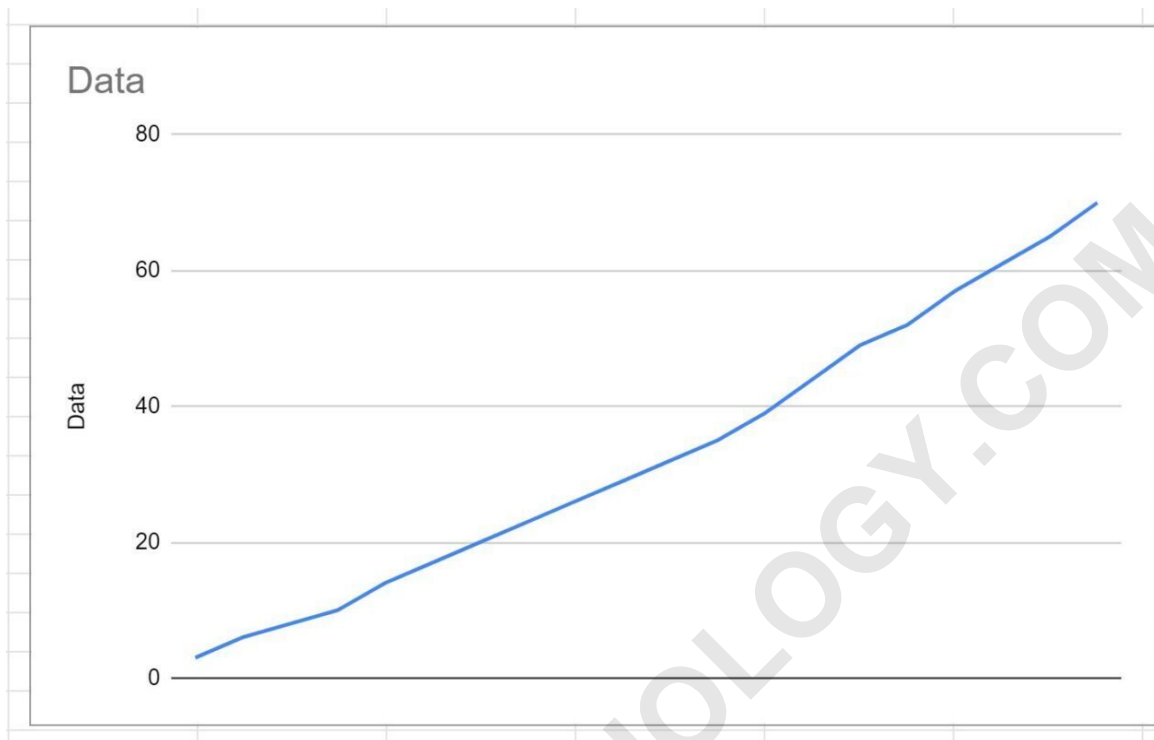
#### Step 4: Visualize the Interpolated Values

Lastly, we can create a line chart to see if the interpolated values seem to fit the dataset well.

To do so, highlight cells A2:A21, then click the Insert tab, then click Chart.

In the Chart editor panel that appears on the right side of the screen, choose Line chart as the Chart type.

**The following line chart will appear:**



**The interpolated values seem to fit the trend of the dataset well.**

**Additional Resource**

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