

How do I plot mean and standard deviation in Excel?

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RECOMMENDED CITATION

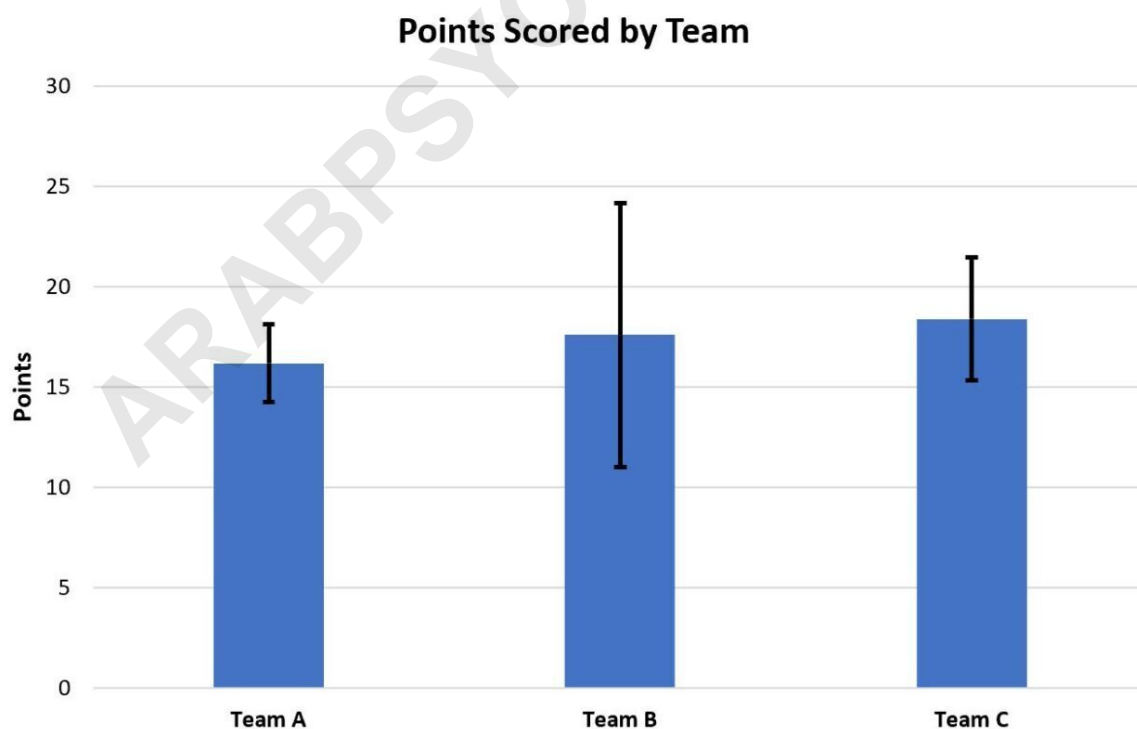
stats writer (2024). *How do I plot mean and standard deviation in Excel?*.

PSYCHOLOGICAL SCALES. Retrieved from <https://scales.arabpsychology.com/?p=153953>

To plot mean and standard deviation in Excel, first organize your data in a table format with each column representing a different category and each row representing a different data point. Then, use the built-in functions in Excel, such as AVERAGE and STDEV, to calculate the mean and standard deviation for each category. Select the data and click on the "Insert" tab, then choose the type of chart you want to use, such as a bar chart or line graph. Finally, customize the chart by adding labels, titles, and formatting options to accurately display the mean and standard deviation values. This will allow you to visually compare the average and variability of your data points and make informed decisions based on the data.

Plot Mean and Standard Deviation in Excel (With Example)

Often you may want to plot the mean and standard deviation for various groups of data in Excel, similar to the chart below:



The following step-by-step example shows exactly how to do so.

Step 1: Enter the Data

First, let's enter the following data that shows the points scored by various basketball players on three different teams:

	A	B	C	D	E	F	G
1		Player 1	Player 2	Player 3	Player 4	Player 5	
2	Team A	14	15	16	17	19	
3	Team B	10	12	18	23	25	
4	Team C	14	17	19	20	22	
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

Step 2: Calculate the Mean and Standard Deviation for Each Group

Next, we will calculate the mean and standard deviation for each team:

	A	B	C	D	E	F	G	H	I
1		Player 1	Player 2	Player 3	Player 4	Player 5		Mean	Std. Dev
2	Team A	14	15	16	17	19		16.2	1.923538
3	Team B	10	12	18	23	25		17.6	6.580274
4	Team C	14	17	19	20	22		18.4	3.04959
5									
6									
7									
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Here are the formulas that we used to calculate the mean and standard deviation in each row:

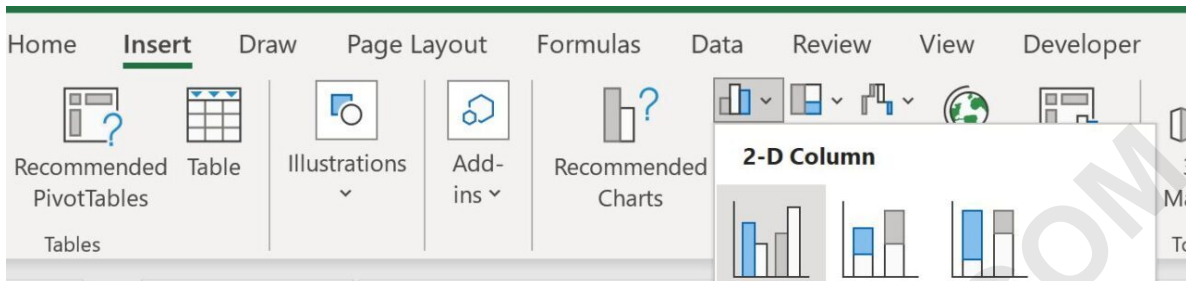
Cell H2: =AVERAGE(B2:F2) Cell I2: =STDEV(B2:F2)

We then copy and pasted this formula down to each cell in column H and column I to calculate the mean and standard deviation for each team.

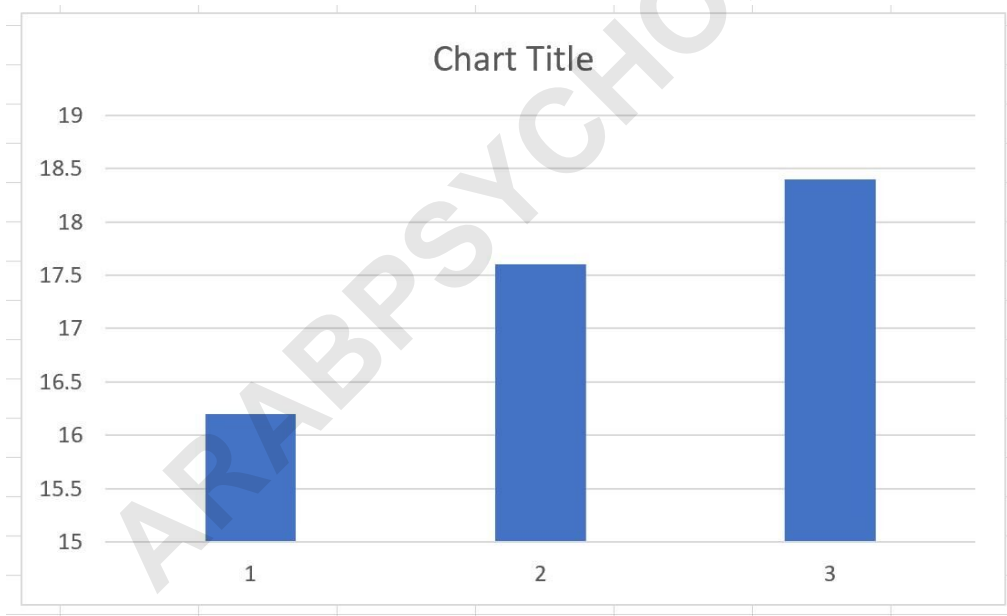
Step 3: Plot the Mean and Standard Deviation for Each Group

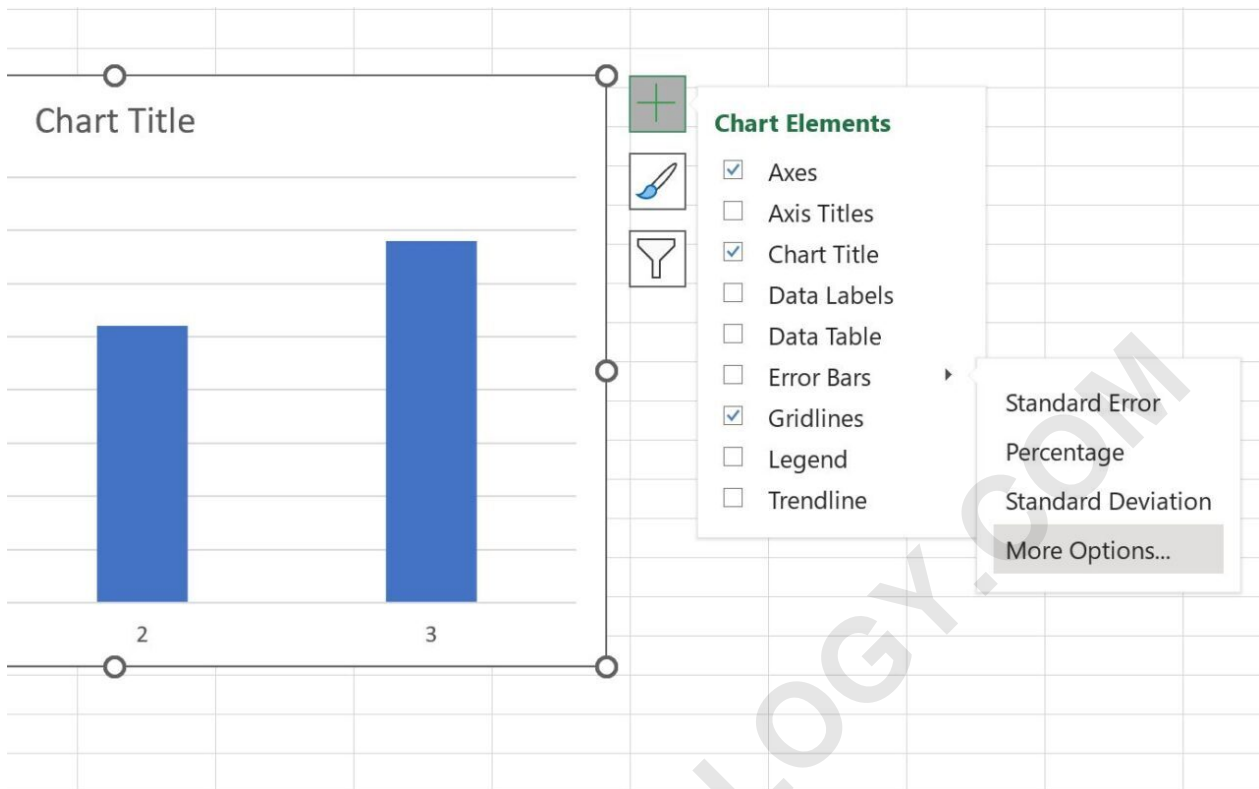
Next, highlight the cell range H2:H4, then click the

Insert tab, then click the icon called Clustered Column within the Charts group:

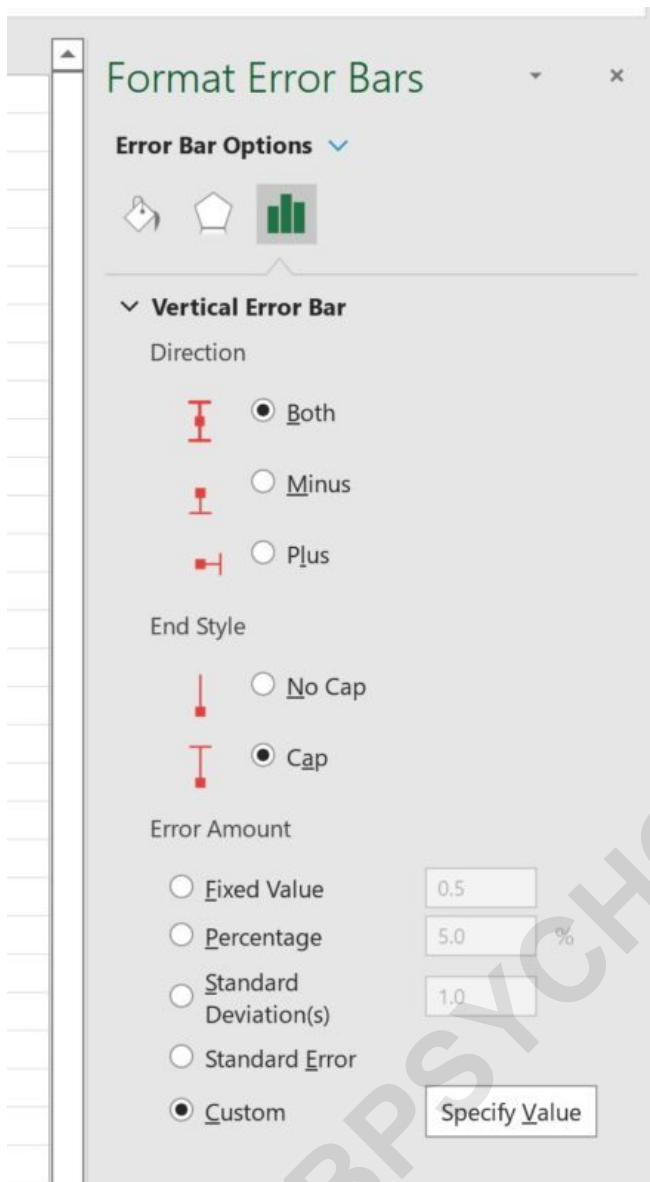


The following bar chart will appear that shows the mean number of points scored by each team:

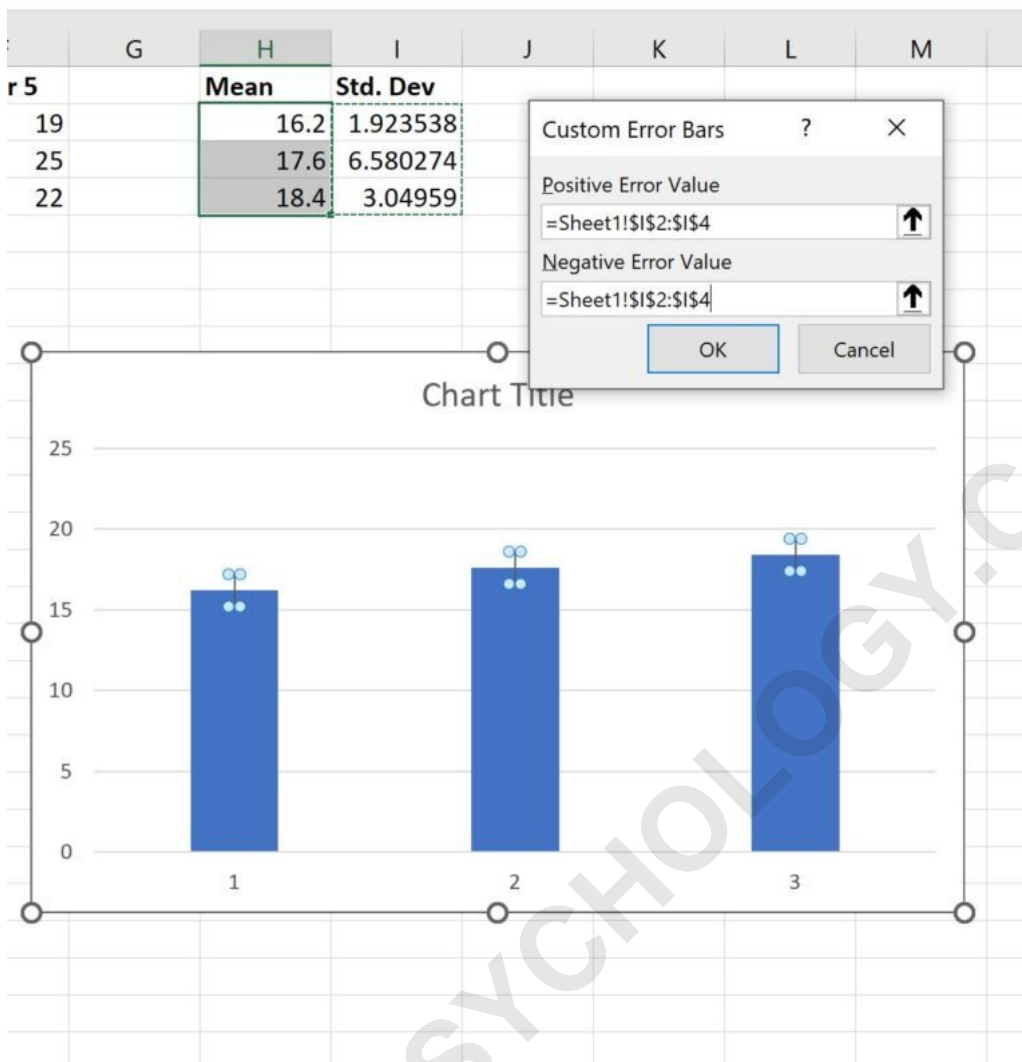




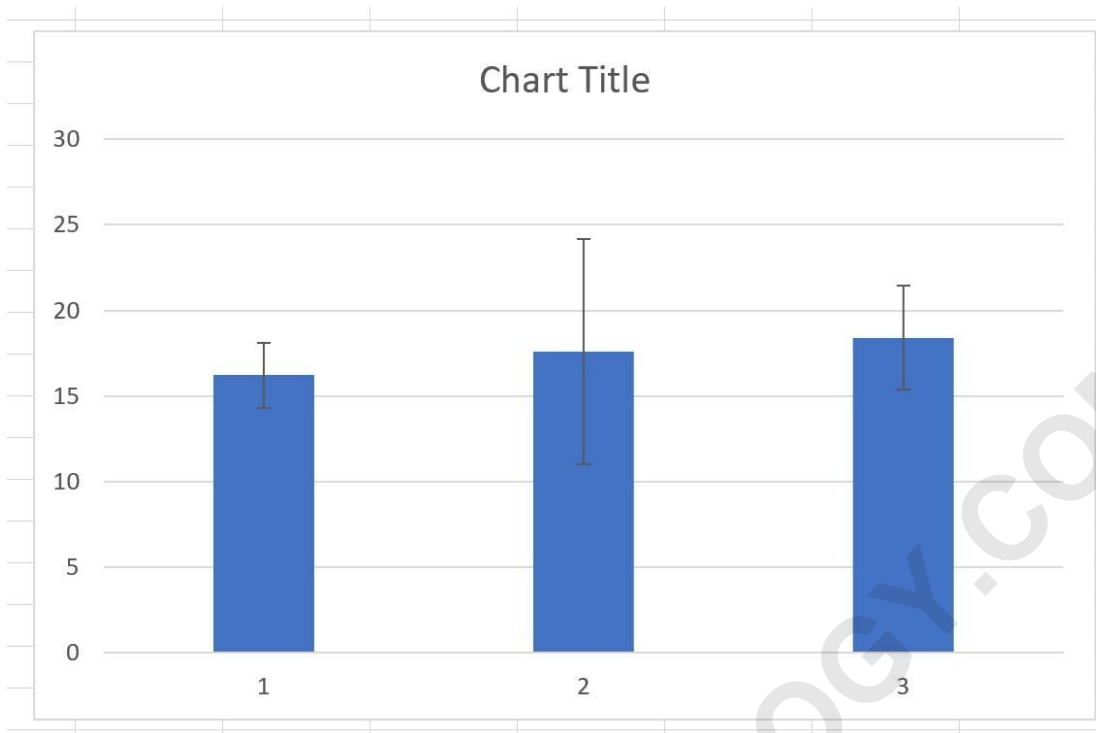
In the new panel that appears on the right side of the screen, click the icon called Error Bar Options, then click the Custom button under Error Amount, then click the Specify Value button:



In the new window that appears, choose the cell range I2:I4 for both the Positive Error Value and Negative Error Value:



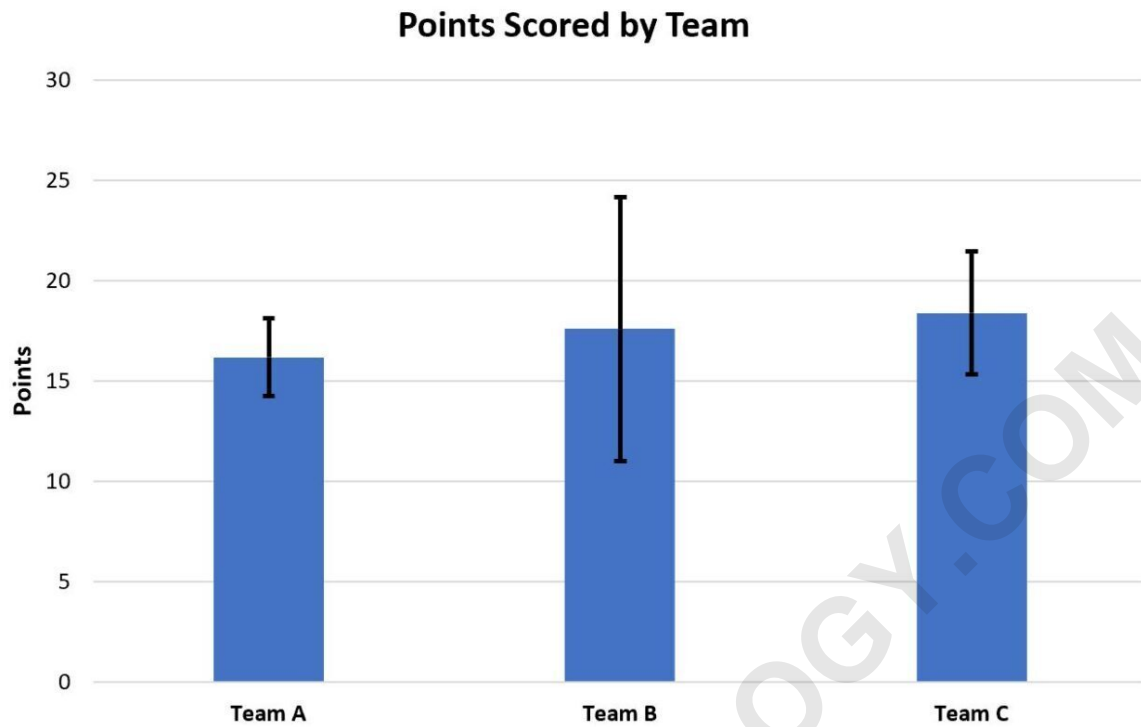
Once you click OK, the standard deviation lines will automatically be added to each individual bar:



The top of each blue bar represents the mean points scored by each team and the black lines represent the standard deviation of points scored by each team.

Step 4: Customize the Chart (Optional)

Lastly, feel free to add a title, customize the colors, and add axis labels to make the chart easier to read:



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