How can I create a Bell Curve in Google Sheets?

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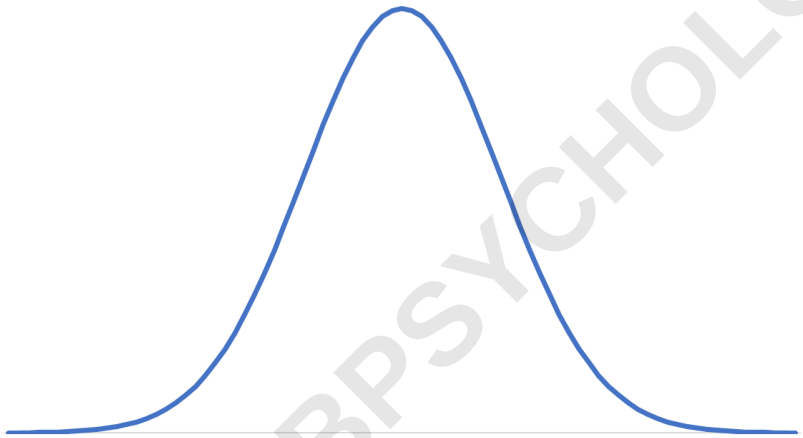
Creating a Bell Curve in Google Sheets is a simple process that involves using the built-in functions and features of the software. First, input the data set that you want to plot on the Bell Curve into a column. Then, use the "Chart" function to select the data and choose "Bell Curve" as the chart type. Next, customize the chart by adjusting the axis labels and adding a title. Finally, you can use the "Format" options to change the appearance of the Bell Curve to your liking. By following these steps, you can easily create a Bell Curve in Google Sheets to visualize your data distribution.

Create a Bell Curve in Google Sheets (Step-by-Step)

A "bell curve" is the nickname given to the shape of a normal distribution, which has a distinct "bell" shape:



The following step-by-step example shows how to make a bell curve in Google Sheets for a given mean and standard deviation.

Step 1: Define the Mean & Standard Deviation

First, we'll define the values for the mean and standard deviation of a given normal distribution:

	A	B	C	D
1	**Mean**	0		
2	**Standard Dev**	1		
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				

Step 2: Define Percentiles

Next, we'll define the percentiles to use in the plot ranging from -4 to 4 in increments of 0.1:

	A	B	C	D
1	**Mean**	0		
2	**Standard Dev**	1		
3				
4	**Percentiles**			
5	-4			
6	-3.9			
7	-3.8			
8	-3.7			
9	-3.6			
10	-3.5			
11	-3.4			
12	-3.3			
13	-3.2			
14	-3.1			
15	-3			
16	-2.9			
17	-2.8			
18	-2.7			
19	-2.6			
20	-2.5			
21	-2.4			

Step 3: Define Data Values

Next, we'll create a column of data values to use in the plot using the following formula:

B5 =B1+A5*B2

	A	B	C	D
1	**Mean**	0		
2	**Standard Dev**	1		
3				
4	**Percentiles**	**Data**		
5	-4	-4		
6	-3.9	-3.9		
7	-3.8	-3.8		
8	-3.7	-3.7		
9	-3.6	-3.6		
10	-3.5	-3.5		
11	-3.4	-3.4		
12	-3.3	-3.3		
13	-3.2	-3.2		
14	-3.1	-3.1		
15	-3	-3		
16	-2.9	-2.9		
17	-2.8	-2.8		
18	-2.7	-2.7		
19	-2.6	-2.6		
20	-2.5	-2.5		
21	-2.4	-2.4		

Step 4: Find the values for the Normal Distribution PDF

Next, we'll use the following formula to find the values for the normal distribution probability density function:

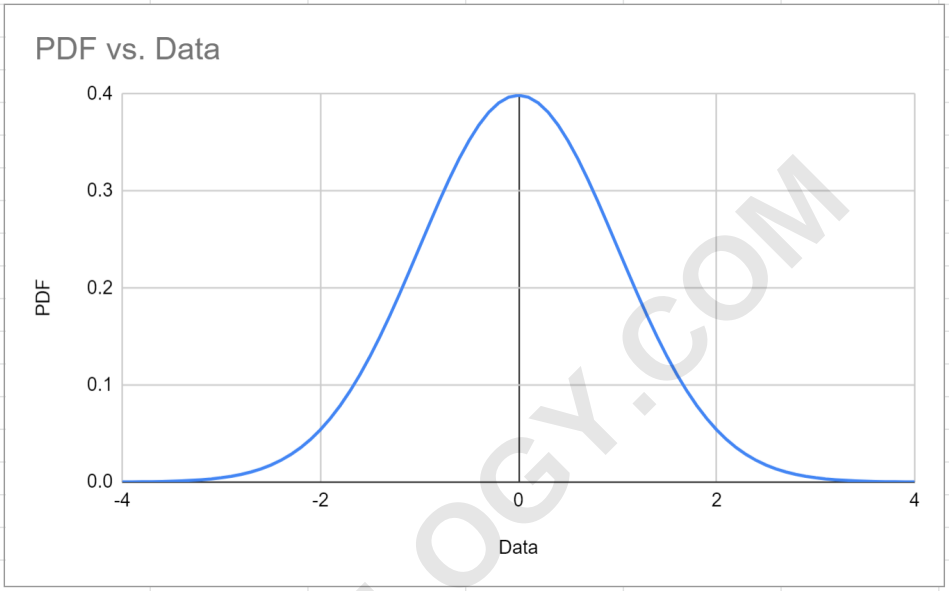
C5 | fx | =NORM.DIST(B5, B1, B2, FALSE)

	A	B	C	D
1	**Mean**	0		
2	**Standard Dev**	1		
3				
4	**Percentiles**	**Data**	**PDF**	
5	-4	-4	0.000133830225	
6	-3.9	-3.9	0.000198655471	
7	-3.8	-3.8	0.000291946925	
8	-3.7	-3.7	0.000424780270	
9	-3.6	-3.6	0.000611901930	
10	-3.5	-3.5	0.000872682695	
11	-3.4	-3.4	0.001232219168	
12	-3.3	-3.3	0.001722568939	
13	-3.2	-3.2	0.002384088201	
14	-3.1	-3.1	0.003266819056	
15	-3	-3	0.004431848412	
16	-2.9	-2.9	0.00595253242	
17	-2.8	-2.8	0.007915451583	
18	-2.7	-2.7	0.01042093481	
19	-2.6	-2.6	0.01358296923	
20	-2.5	-2.5	0.01752830049	
21	-2.4	-2.4	0.02239453029	

Step 5: Create the Bell Curve

Lastly, we can highlight the values in the range B5:C85, then click Insert and then click Chart.

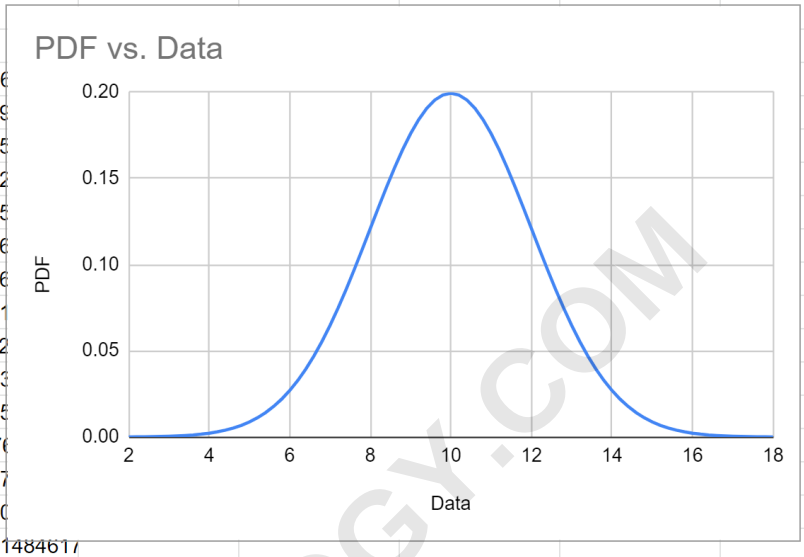
	B	C	D	E	F	G	H	I
	1							
	Data	**PDF**						
	-4	0.000133830225						
	-3.9	0.000198655471						
	-3.8	0.000291946925						
	-3.7	0.000424780270						
	-3.6	0.000611901930						
	-3.5	0.000872682695						
	-3.4	0.001232219168						
	-3.3	0.001722568939						
	-3.2	0.002384088201						
	-3.1	0.003266819056						
	-3	0.004431848412						
	-2.9	0.00595253242						
	-2.8	0.007915451583						
	-2.7	0.01042093481						
	-2.6	0.01358296923						
	-2.5	0.01752830049						
	-2.4	0.02239453029						
	-2.3	0.02832703774						
	-2.2	0.03547459285						
	-2.1	0.04398359598						
	-2	0.05399096651						
	-1.9	0.06561581477						
	-1.8	0.0789501583						
	-1.7	0.09404907738						



You'll notice that if you change the mean and standard deviation, the bell curve will update automatically.

For example, here's what the bell curve turns into if we use mean = 10 and standard deviation = 2:

	A	B	C	D	E	F	G	H
1	**Mean**	10						
2	**Standard Dev**	2						
3								
4	**Percentiles**	**Data**	**PDF**					
5	-4	2	0.000066					
6	-3.9	2.2	0.000099					
7	-3.8	2.4	0.000145					
8	-3.7	2.6	0.000212					
9	-3.6	2.8	0.000305					
10	-3.5	3	0.000436					
11	-3.4	3.2	0.000616					
12	-3.3	3.4	0.000861					
13	-3.2	3.6	0.001192					
14	-3.1	3.8	0.001633					
15	-3	4	0.002215					
16	-2.9	4.2	0.002976					
17	-2.8	4.4	0.003957					
18	-2.7	4.6	0.005210					
19	-2.6	4.8	0.006791484617					
20	-2.5	5	0.008764150247					
21	-2.4	5.2	0.01119726515					
22	-2.3	5.4	0.01416351887					
23	-2.2	5.6	0.01773729642					
24	-2.1	5.8	0.02199179799					



Feel free to modify the chart title, add axis labels, and change the color if you'd like to make the chart more aesthetically pleasing.

The following tutorials offer additional information about the normal distribution:

An Introduction to the Normal Distribution

Normal CDF Calculator