

# EXCEL CHARTS

# Before you start, Ask Yourself

1. What do you hope to convey?
2. How much data and what type of data are you working with?
3. What are the most important data elements?

# Types of Charts and When to Use Them



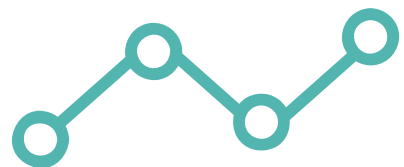
## Pie Chart

Illustrate the distribution of each data item over a total value



## Bar Chart

Compare different categories of data in time



## Line Chart

Show changes over time



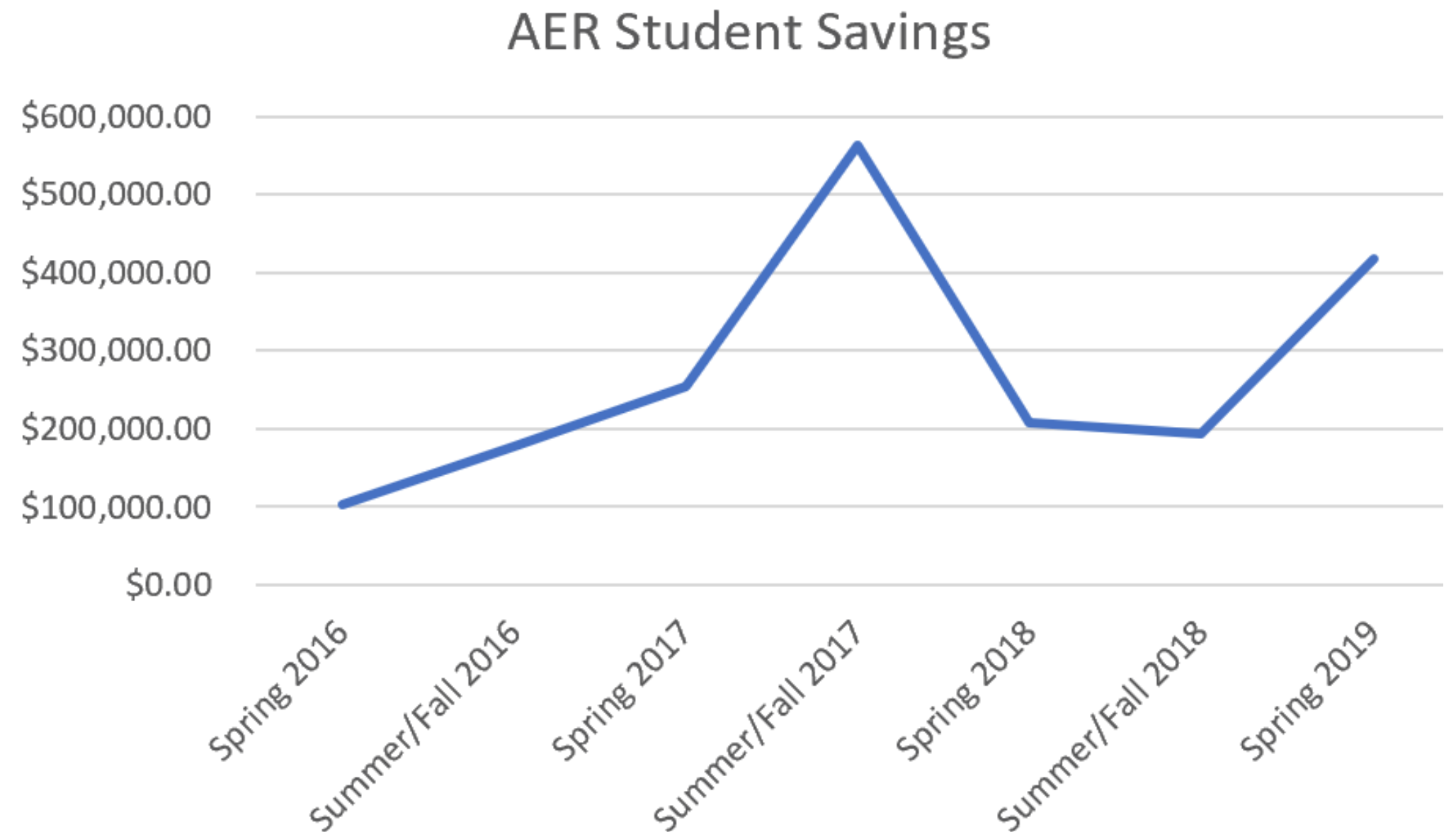
## Column Chart

Compare values in multiple series.

# Line Chart

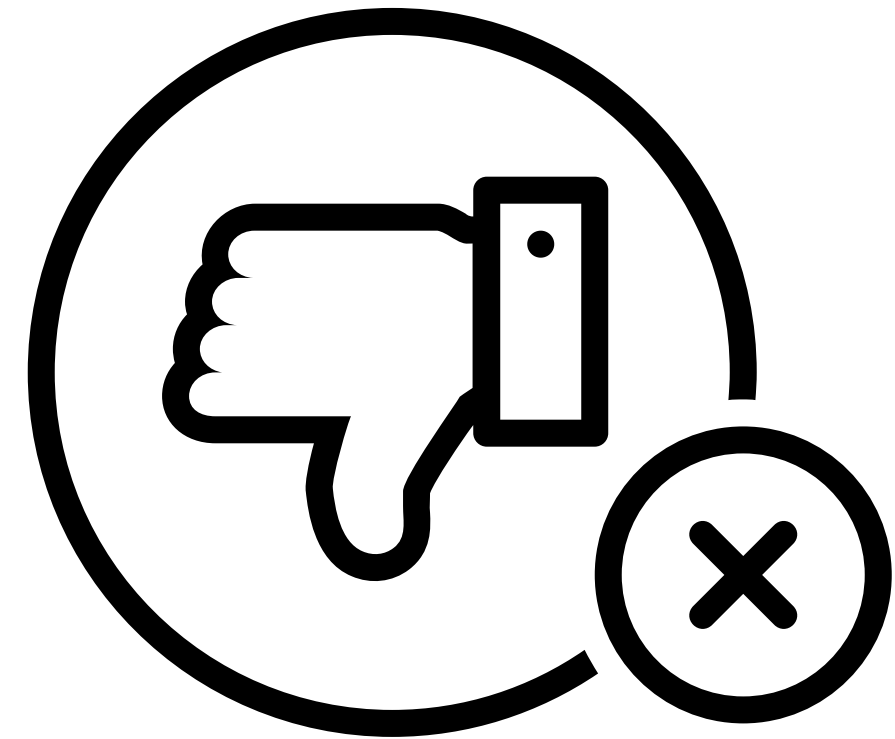
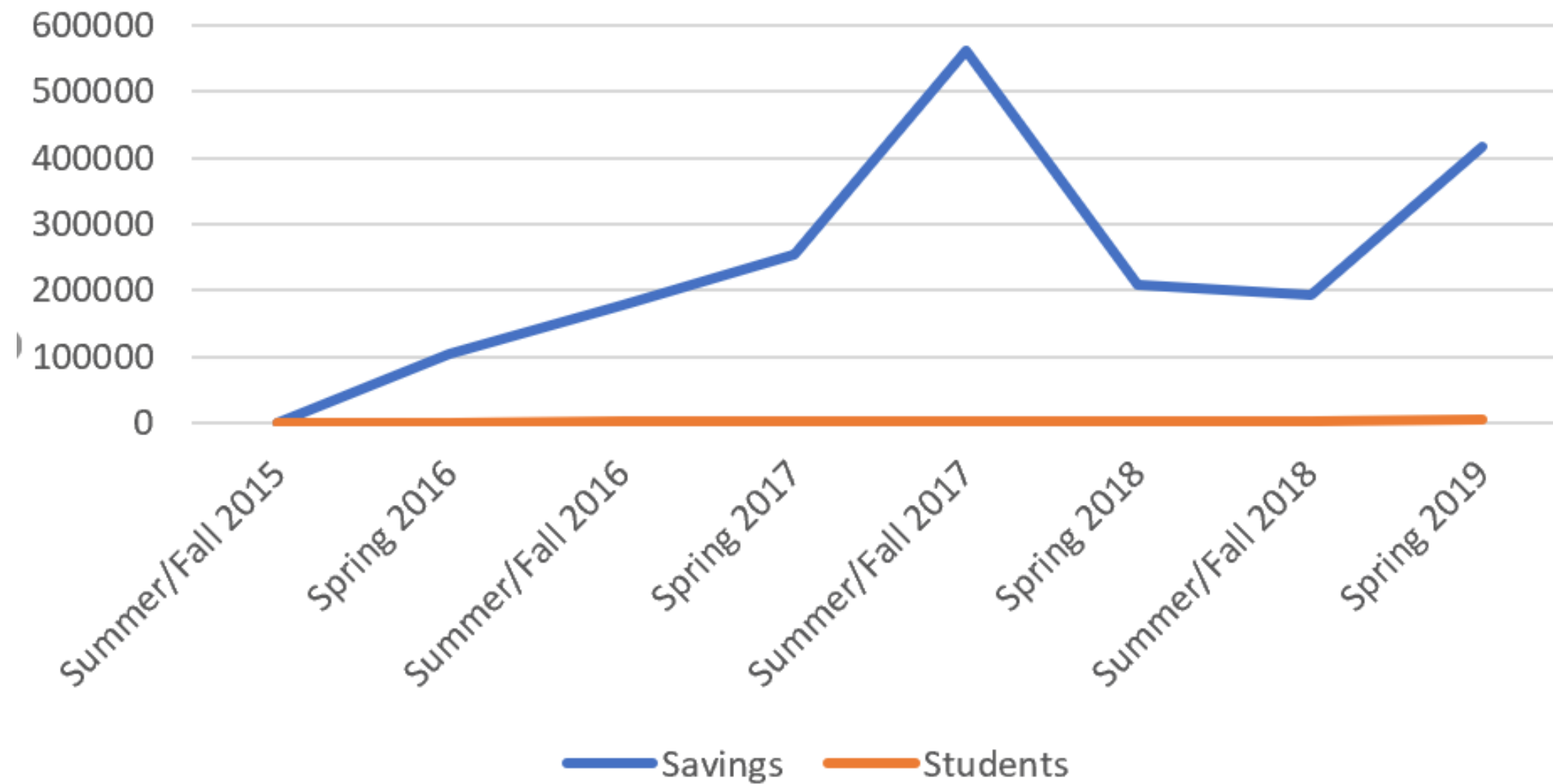
- Often used to show changes over time.

Semester	Savings	Students
Summer/Fall 2015	\$88,340.88	1,062
Spring 2016	\$103,893.97	1,165
Summer/Fall 2016	\$177,352.44	1,361
Spring 2017	\$253,926.09	2,430
Summer/Fall 2017	\$562,749.20	3,594
Spring 2018	\$207,590.90	2,130
Summer/Fall 2018	\$193,363.75	1,921
Spring 2019	\$417,969.52	5,824



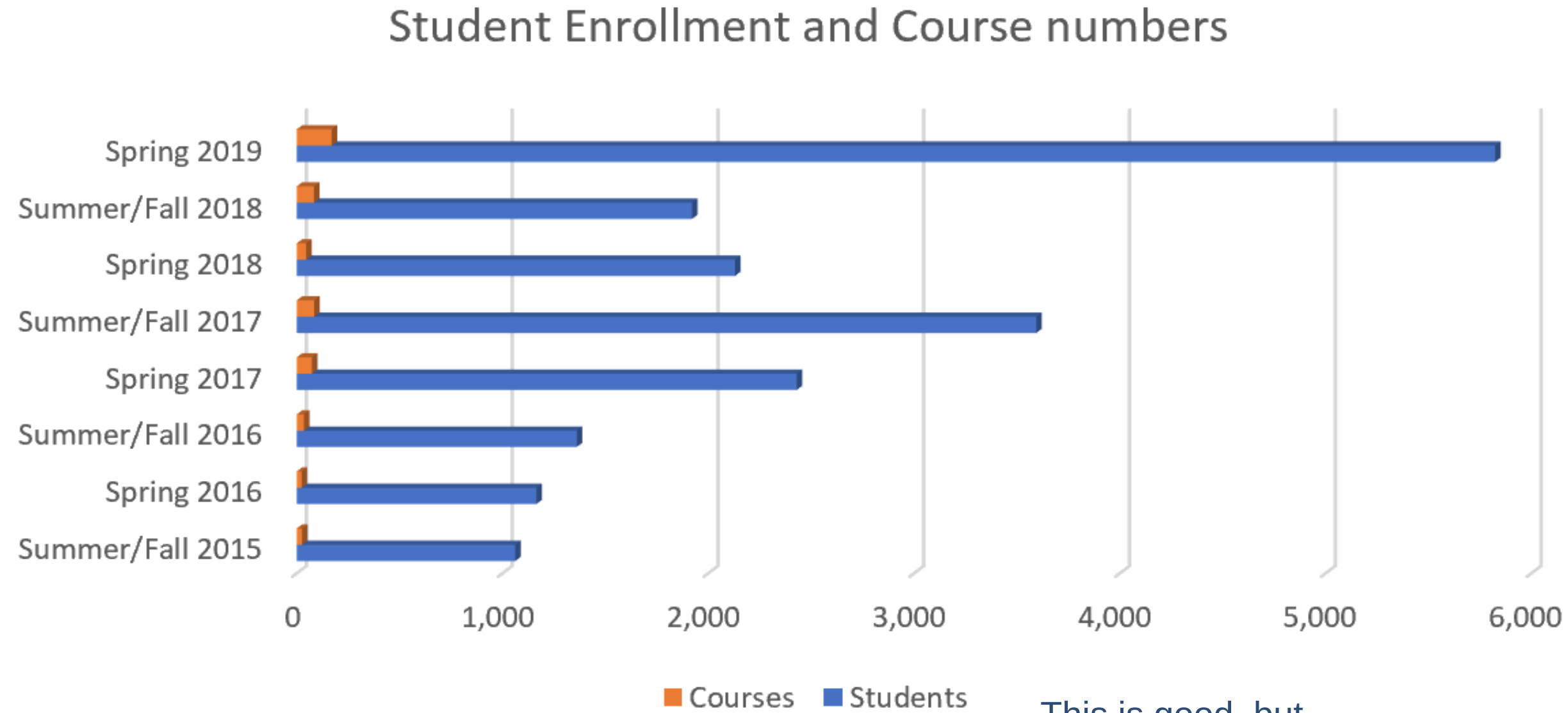
# Line Chart

AER Student Savings



# Bar Chart

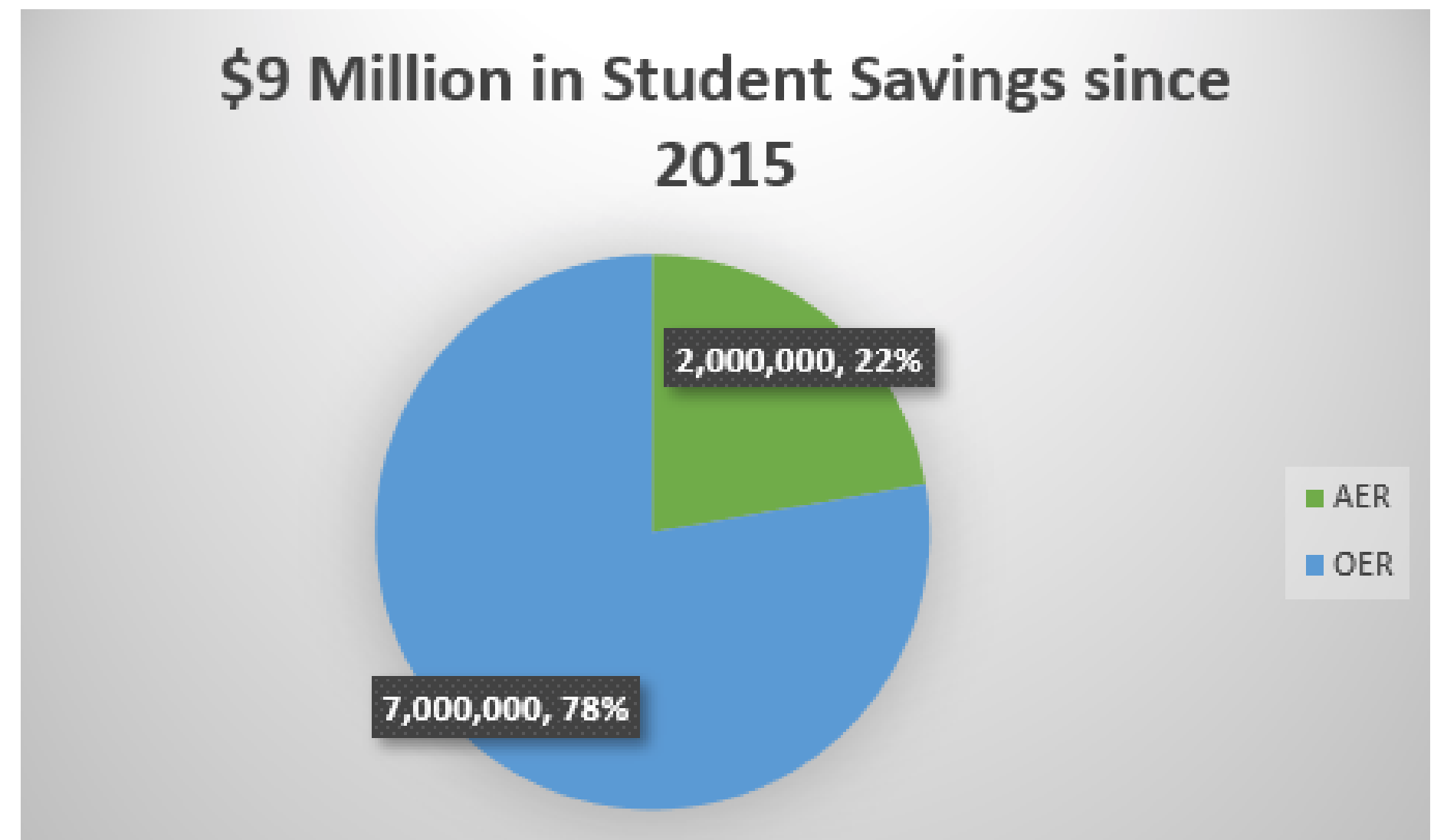
- Often used to compare different categories of data.  
Good for visualizing the proportion of items when there are multiple categories.



# Pie Chart

- Often used to illustrate the distribution of each data item over a total value. The overall pie is the total value.

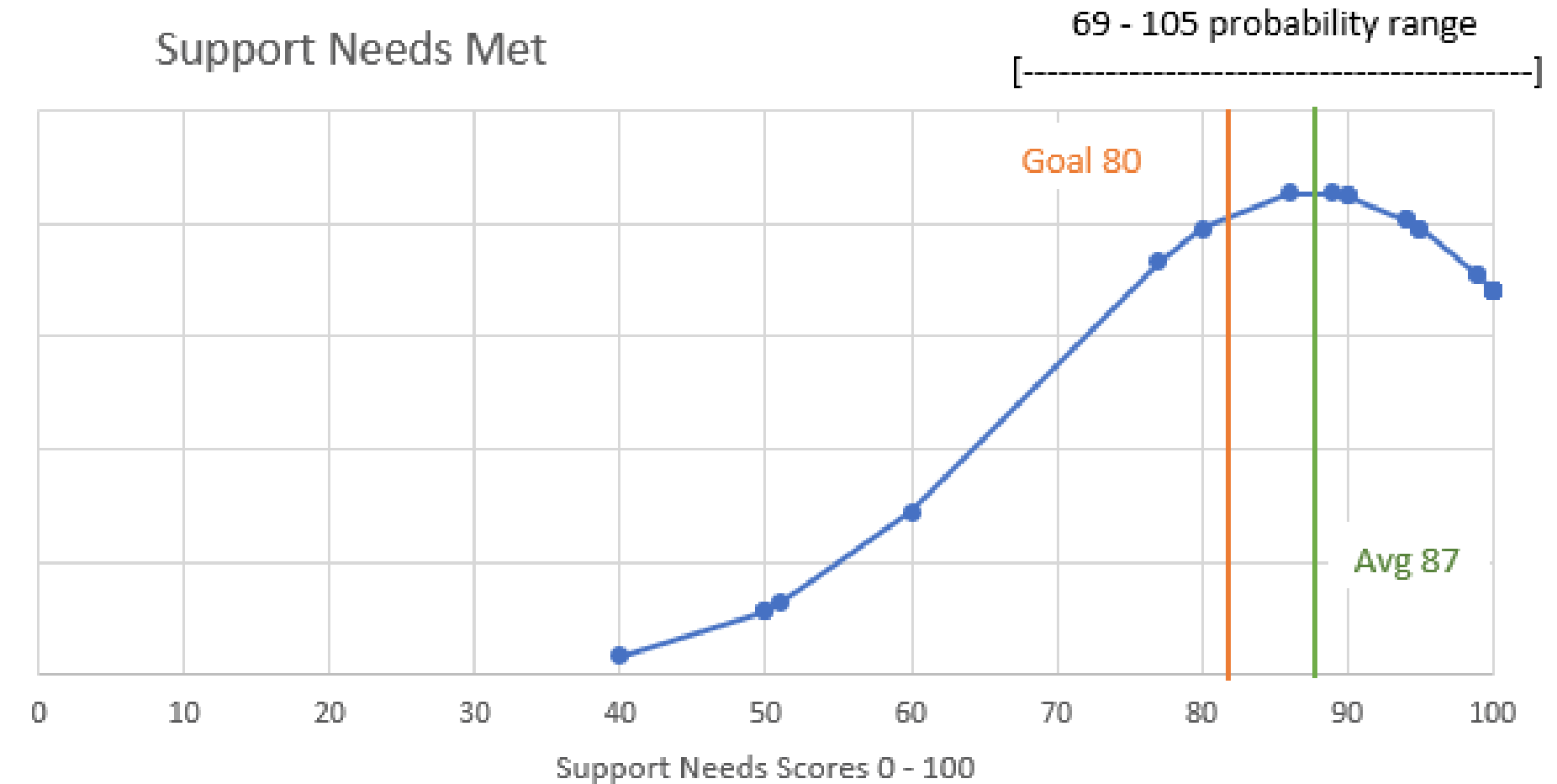
Program	Student Savings
AER	2,000,000
OER	7,000,000



# Bell Curve

- Use to show distribution of data with no total value.

- This is a scatter chart.
- Not a true bell curve.
- Note! Before you get started sort your data from lowest to highest. Otherwise your scatter chart will really be scattered rather than have a bell curve.





# Bell Curve

	A	B	C	D	E
1	Support Needs Met	Normal Distribution	Average	Standard Deviation	
2	40	0.000767578	87.47058824	18.357937	
3	50	0.002706584			
4	50	0.002706584			
5	50	0.002706584			
6	51	0.003020396			
7	60	=NORM.DIST(A7,\$C\$2,\$D\$2,FALSE)			
8	77	0.018469133			

When you see \$ in a formula it indicates an absolute reference, so this cell will not change as we drag to fill the formula.

## Essential Functions

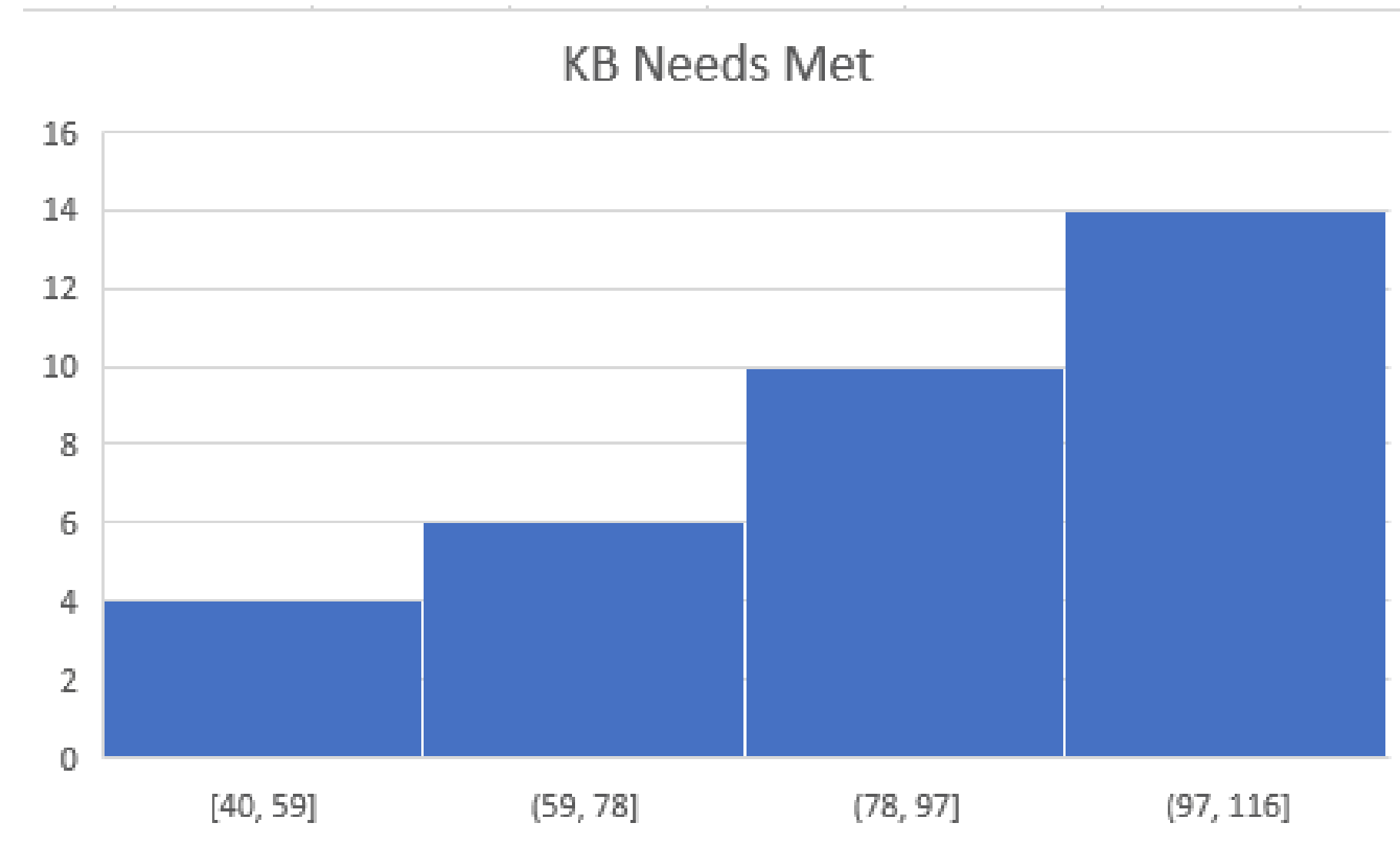
- Average
  - =Average(A2:A25)
- Normal Distribution
  - =NORM.DIST(x,mean,standard\_dev,cumulative);  
=NORM.DIST(A7,\$C\$2,\$D\$2,FALSE)
- Standard Deviation
  - =STDEV(A2:A25)

# Histogram

## Two Ways to Create

- Allow excel to automatically create your "bins"
- Activate the Data Analysis Tool Pak in the data tab - more control
  - Define your bins

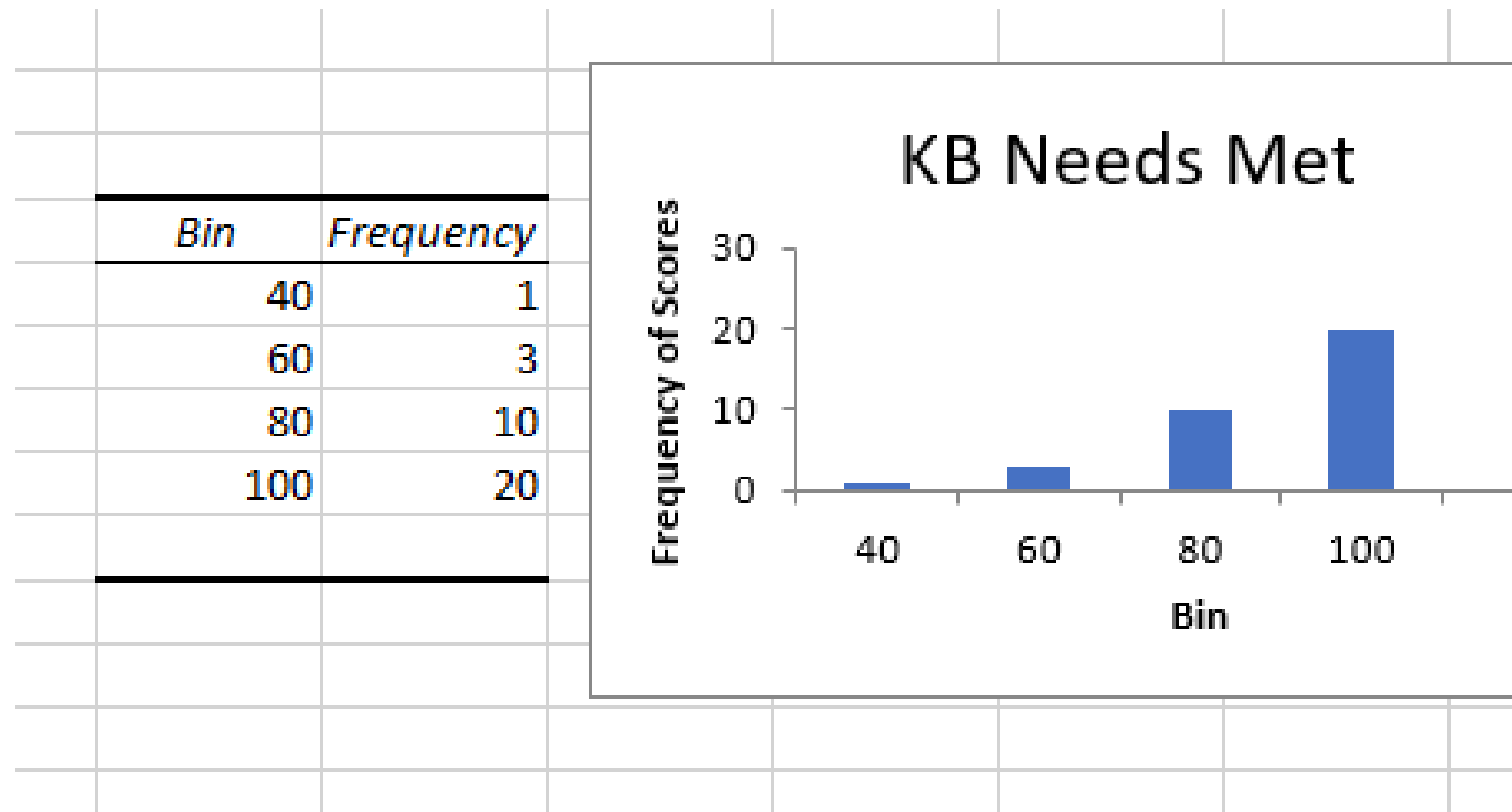
A column chart that shows frequency of data



Auto created bins

# Histogram

A column chart that shows frequency of data



User Defined bins

# Resources

- <https://support.office.com/en-us/article/Create-a-histogram-85680173-064b-4024-b39d-80f17ff2f4e8>
- <https://support.office.com/en-us/article/Load-the-Analysis-ToolPak-in-Excel-6a63e598-cd6d-42e3-9317-6b40ba1a66b4>
- <https://trumpexcel.com/bell-curve/>

Thank you!