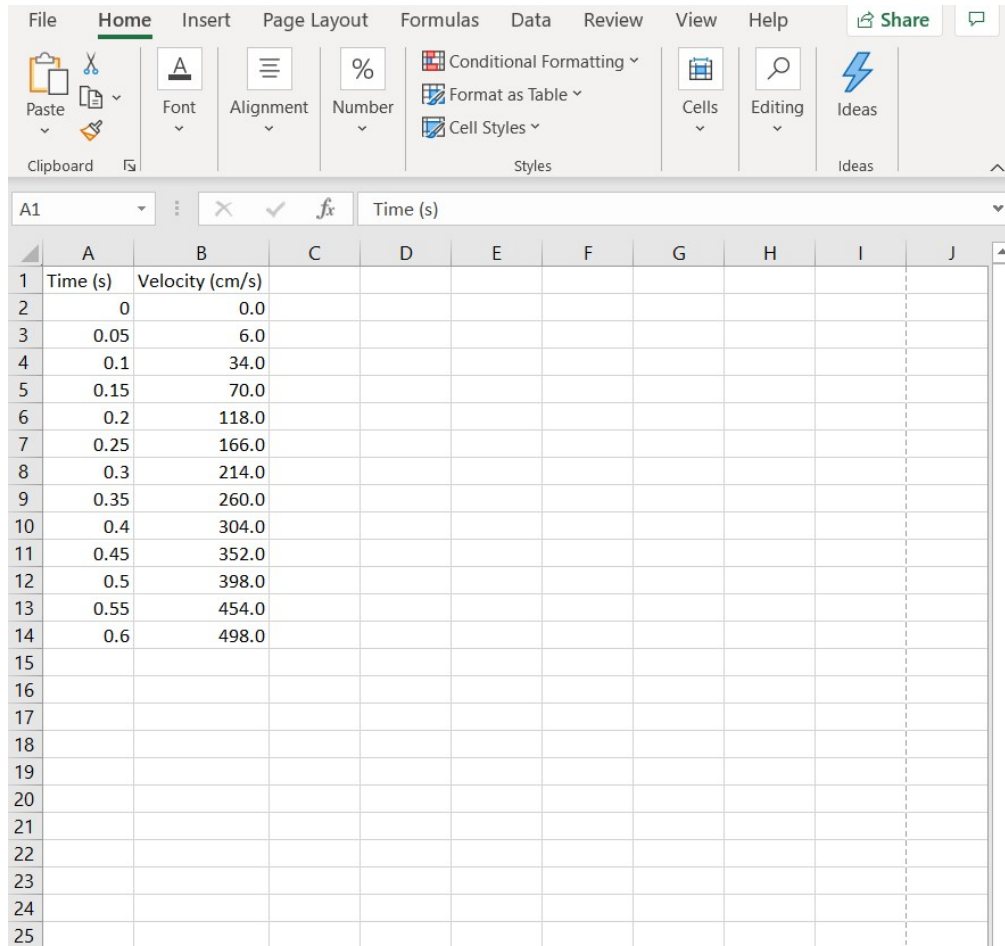


# How to Plot in Excel

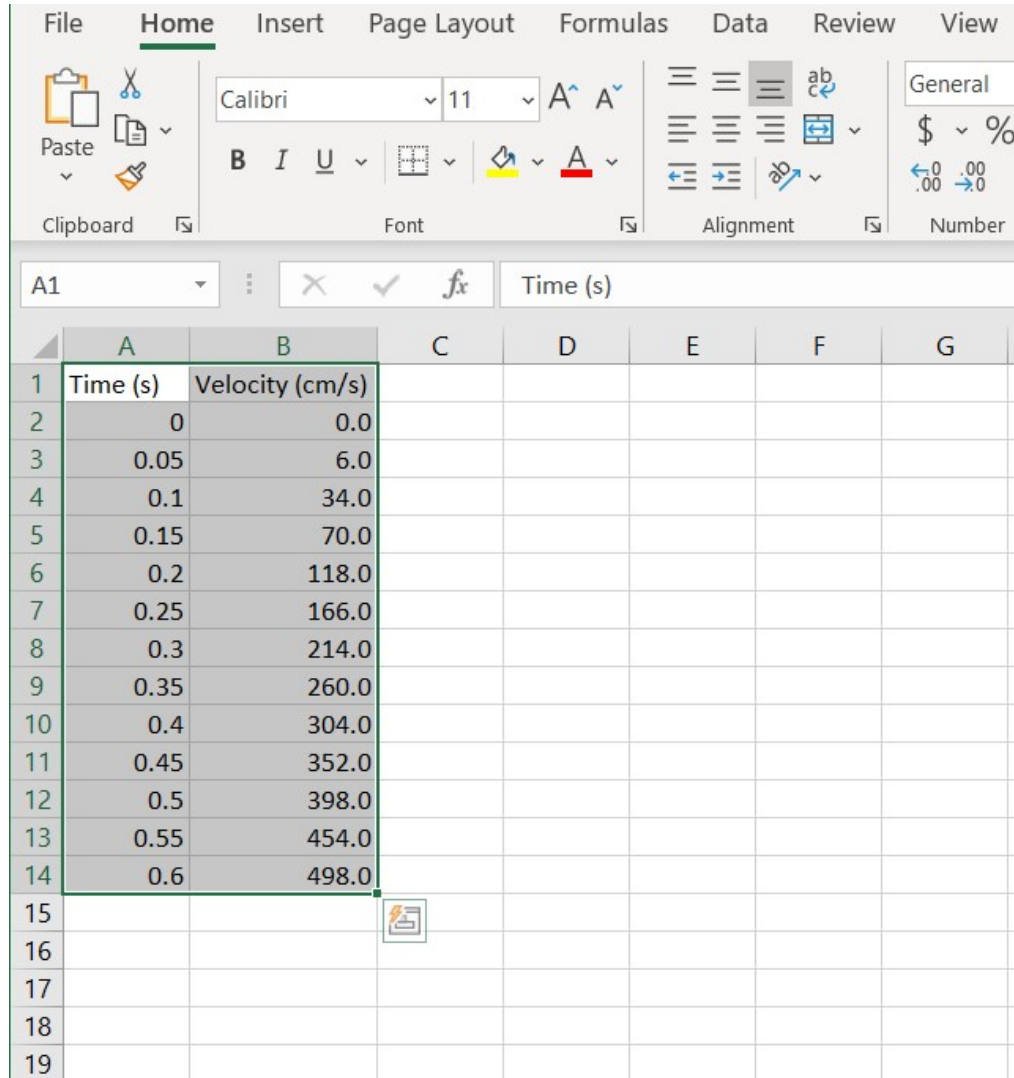
1. Enter your data into your Excel spreadsheet. Use column form and label each one accordingly.



The screenshot shows the Microsoft Excel interface with the Home tab selected. The spreadsheet contains the following data:

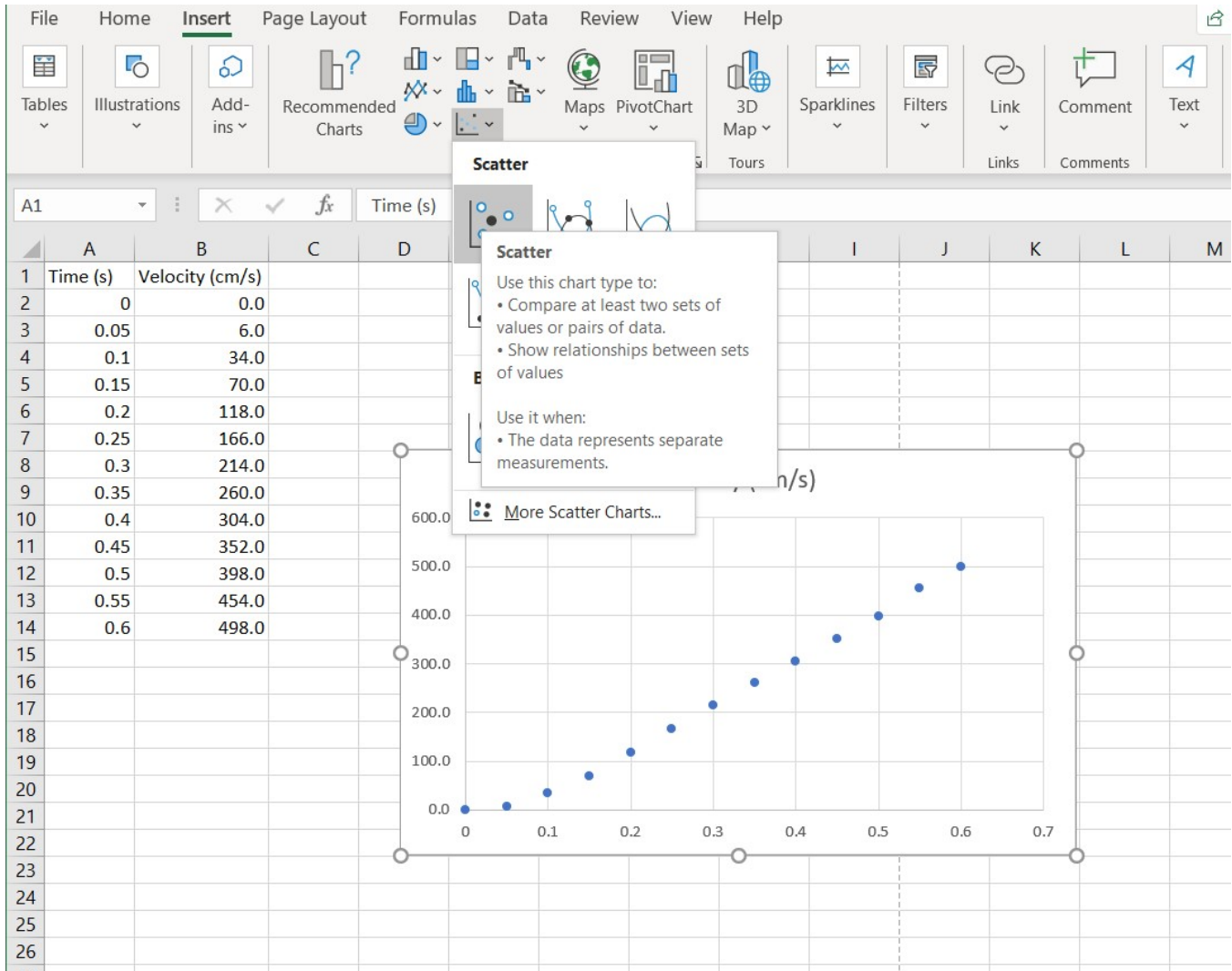
	A	B	C	D	E	F	G	H	I	J
1	Time (s)	Velocity (cm/s)								
2	0	0.0								
3	0.05	6.0								
4	0.1	34.0								
5	0.15	70.0								
6	0.2	118.0								
7	0.25	166.0								
8	0.3	214.0								
9	0.35	260.0								
10	0.4	304.0								
11	0.45	352.0								
12	0.5	398.0								
13	0.55	454.0								
14	0.6	498.0								
15										
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										

2. Highlight the columns you wish to plot, including the column label. The easiest way to do this is to have the two columns right next to each other, then click and drag to highlight all the relevant data. If your columns are not next to each other, you can select the first column by clicking and dragging, then holding down the “ctrl” key and clicking and dragging on the second column.

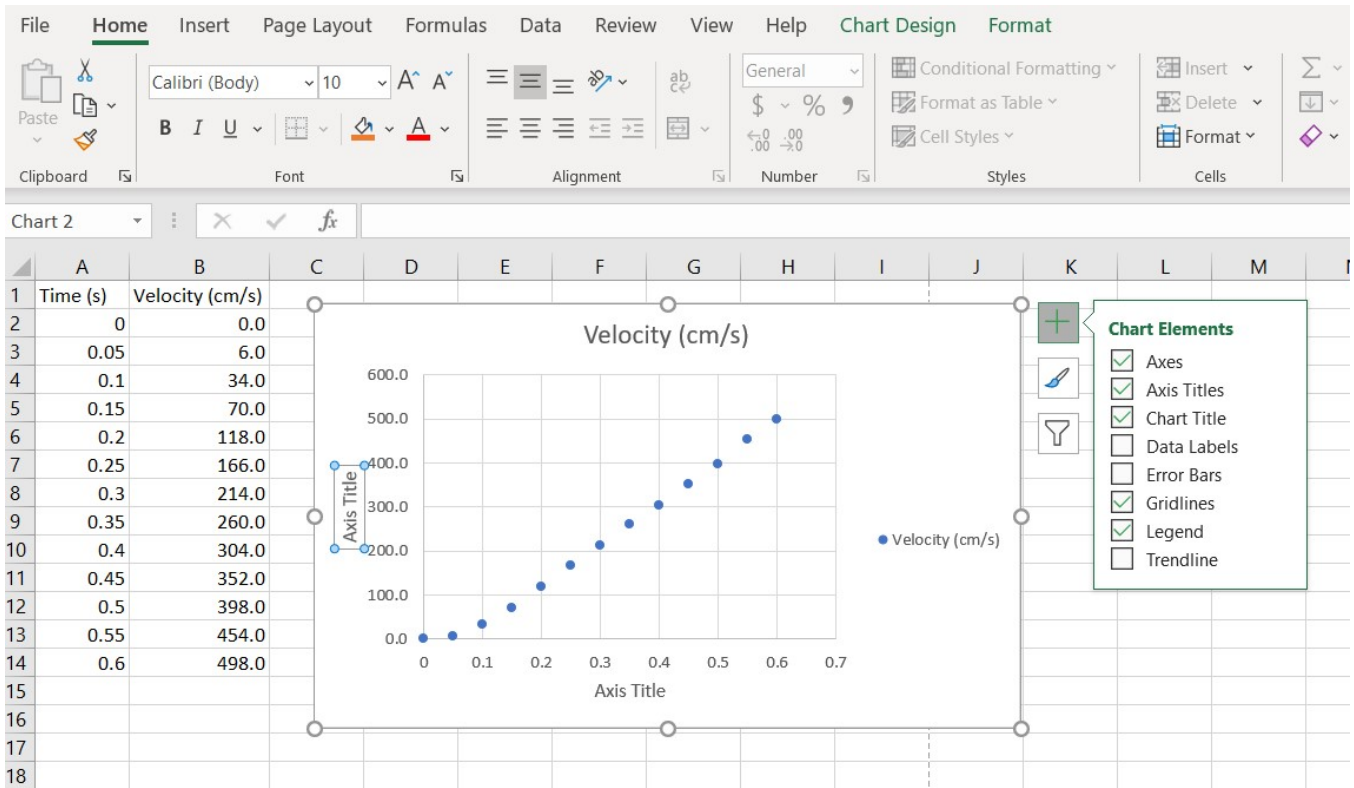


	A	B	C	D	E	F	G
1	Time (s)	Velocity (cm/s)					
2	0	0.0					
3	0.05	6.0					
4	0.1	34.0					
5	0.15	70.0					
6	0.2	118.0					
7	0.25	166.0					
8	0.3	214.0					
9	0.35	260.0					
10	0.4	304.0					
11	0.45	352.0					
12	0.5	398.0					
13	0.55	454.0					
14	0.6	498.0					
15							
16							
17							
18							
19							

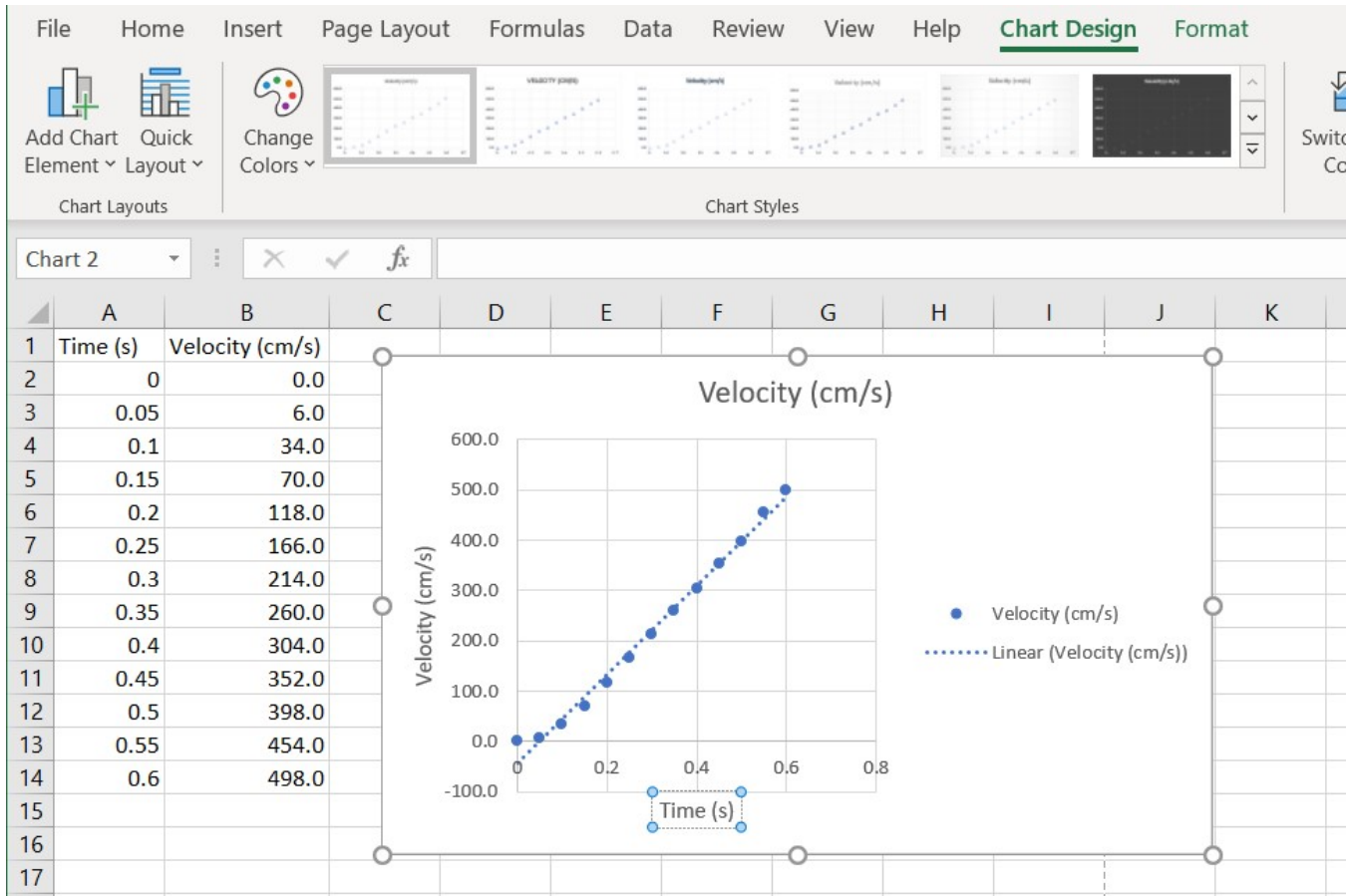
3. On the top menu bar, go to “Insert”, then select the first scatter plot option.



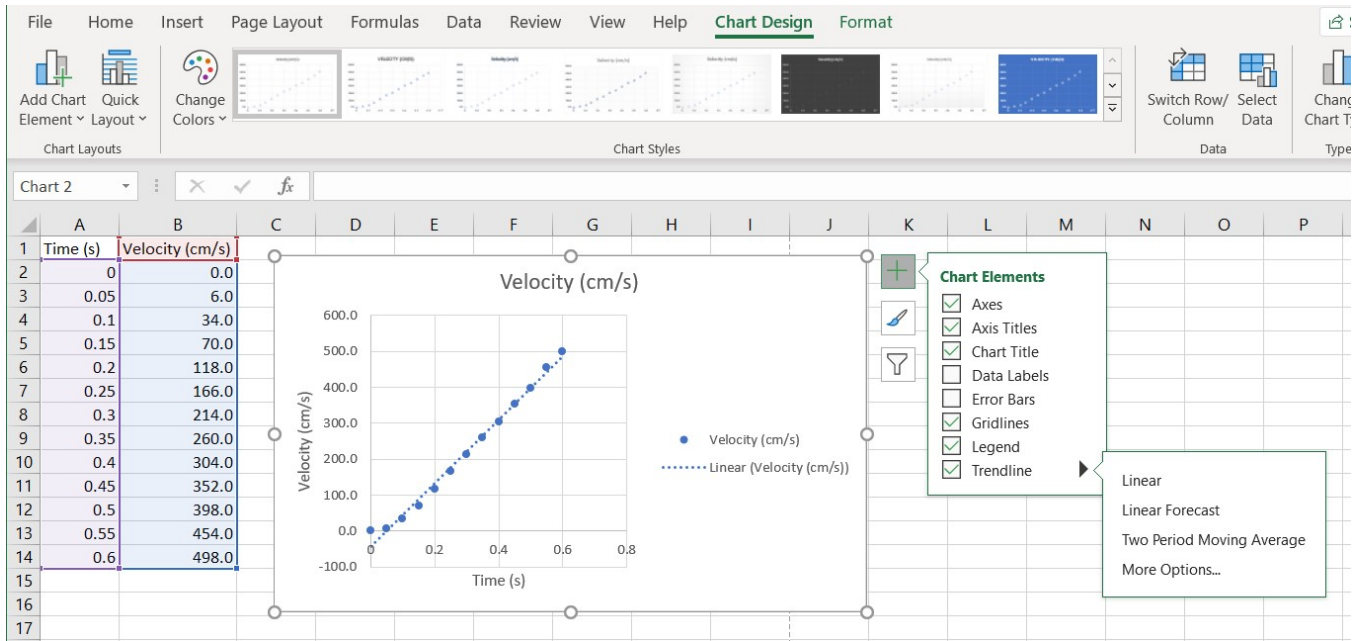
- When the plot appears, go to the right of the plot and click on the “+” symbol, then select “Axis Titles” and “Legend”.



5. Click on the axis titles' text boxes and change them to the appropriate labels. Remember to include units!



6. To configure a trendline, go back to the “+” symbol on the right side of the plot, then click the arrow next to the ”Trendline” option. Select ”More Options”.



- Select the type of trendline (linear, polynomial, etc.), then scroll down and select "Display Equation on chart".  
There are other options here such as setting a manual intercept or displaying the R-squared value, which you may or may not need.

The screenshot shows an Excel spreadsheet with a scatter plot of Velocity (cm/s) versus Time (s). The data points are as follows:

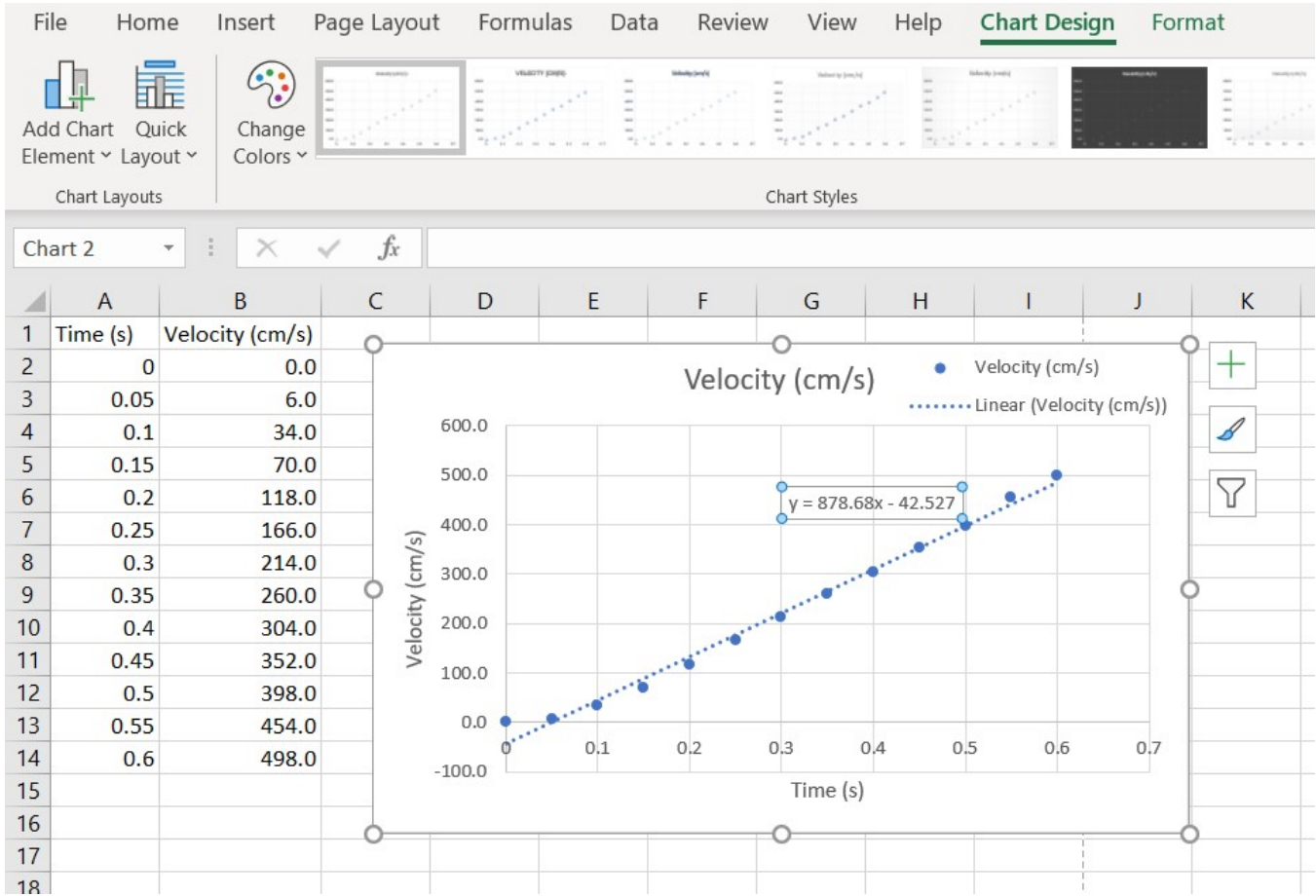
Time (s)	Velocity (cm/s)
0	0.0
0.05	6.0
0.1	34.0
0.15	70.0
0.2	118.0
0.25	166.0
0.3	214.0
0.35	260.0
0.4	304.0
0.45	352.0
0.5	398.0
0.55	454.0
0.6	498.0

The 'Format Trendline' task pane is open, showing the following settings:

- Trendline Options:** Linear (selected)
- Trendline Name:** Automatic (Linear (Velocity (cm/s)))
- Forecast:** Forward: 0.0 periods, Backward: 0.0 periods
- Display Equation on chart:** Checked
- Display R-squared value on chart:** Unchecked

The equation of the trendline is  $y = 878.68x - 42.527$ .

8. Use the interface to adjust the plot as needed. Make it look nice!



9. If using Microsoft Word or Google Docs, you can right click the plot to copy it and then paste it directly into your document. If you are using LaTeX, you will need to convert it to an image file first (using Paint, taking a screenshot, etc.).



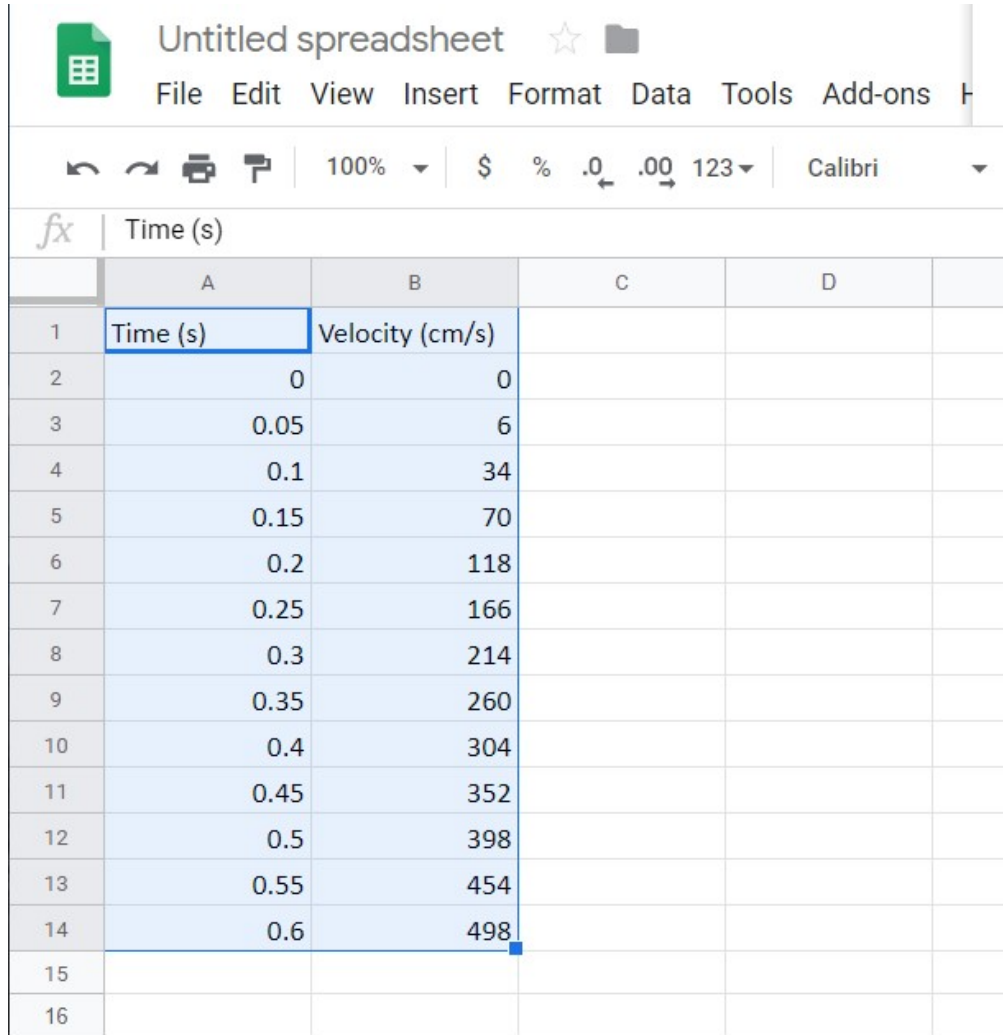
# How to Plot in Google Sheets

1. Enter your data into your Google spreadsheet. Use column form and label each one accordingly.

The screenshot shows a Google Sheet interface with the following data:

	A	B	C	D	E
1	Time (s)	Velocity (cm/s)			
2	0	0			
3	0.05	6			
4	0.1	34			
5	0.15	70			
6	0.2	118			
7	0.25	166			
8	0.3	214			
9	0.35	260			
10	0.4	304			
11	0.45	352			
12	0.5	398			
13	0.55	454			
14	0.6	498			
15					
16					
17					

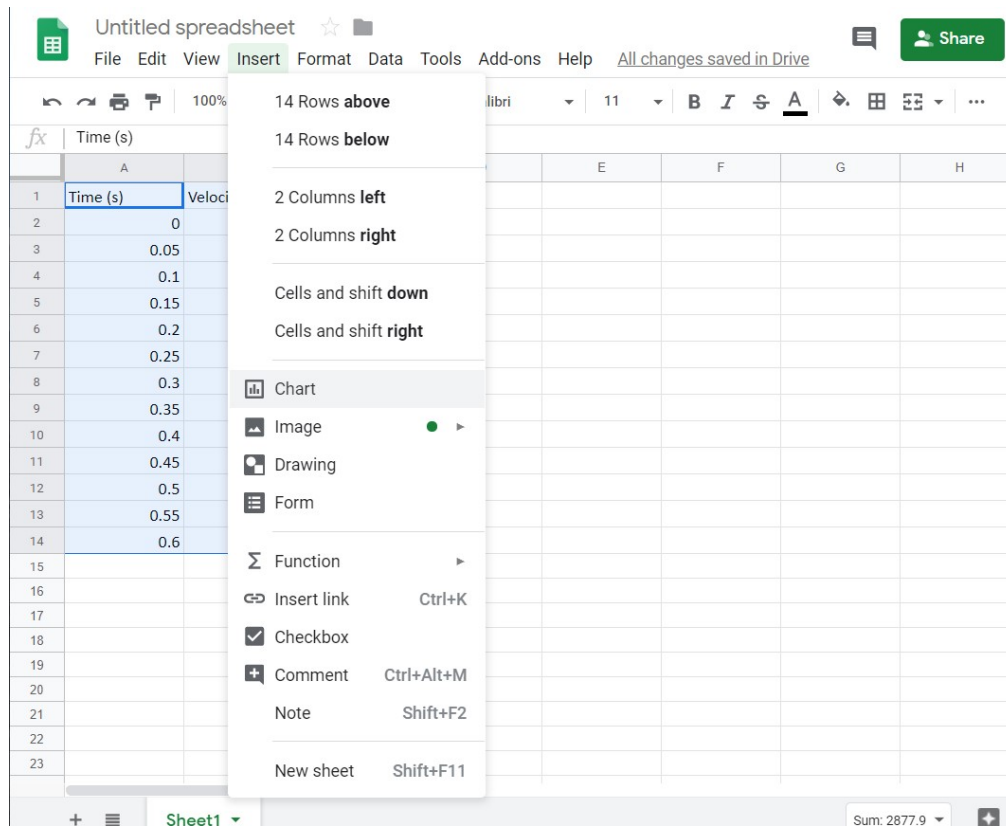
2. Highlight the columns you wish to plot, including the column label. The easiest way to do this is to have the two columns right next to each other, then click and drag to highlight all the relevant data. If your columns are not next to each other, you can select the first column by clicking and dragging, then holding down the “ctrl” key and clicking and dragging on the second column.



fx | Time (s)

	A	B	C	D
1	Time (s)	Velocity (cm/s)		
2	0	0		
3	0.05	6		
4	0.1	34		
5	0.15	70		
6	0.2	118		
7	0.25	166		
8	0.3	214		
9	0.35	260		
10	0.4	304		
11	0.45	352		
12	0.5	398		
13	0.55	454		
14	0.6	498		
15				
16				

3. On the top menu bar, go to “Insert”, then click “Chart”.



4. The Chart Editor on the right-hand side of the screen will come up. In the “Setup” section, click on the “Chart type” dropdown, then scroll down and select “Scatter”.

The screenshot shows a Google Sheets interface with a spreadsheet and a Chart Editor panel. The spreadsheet has two columns: "Time (s)" and "Velocity (cm/s)". The Chart Editor panel is open, showing the "Setup" tab. The "Chart type" dropdown is set to "Line chart". The "Scatter" section is visible, and the "Scatter chart" option is highlighted. The chart in the spreadsheet is titled "Velocity (cm/s) vs. Time (s)" and shows a blue line representing the relationship between time and velocity.

Time (s)	Velocity (cm/s)
0	0
0.05	5
0.1	20
0.15	45
0.2	80
0.25	120
0.3	170
0.35	220
0.4	280
0.45	350
0.5	420
0.55	480
0.6	500

5. Go to the “Customize” section and click on “Chart & axis titles”. If you used column labels, Sheets should automatically populate these correctly, but it’s always good to double check. Use the first dropdown menu to select the type of title, then insert the text you want. You can also configure the font, font size, font color, and format if you wish.

The screenshot shows a Google Sheets spreadsheet with a scatter plot and the Chart editor panel. The spreadsheet has two columns: 'Time (s)' and 'Velocity (cm/s)'. The data points are as follows:

Time (s)	Velocity (cm/s)
0.0	0
0.05	10
0.1	40
0.15	70
0.2	120
0.25	170
0.3	220
0.35	260
0.4	300
0.45	350
0.5	400
0.55	450
0.6	500

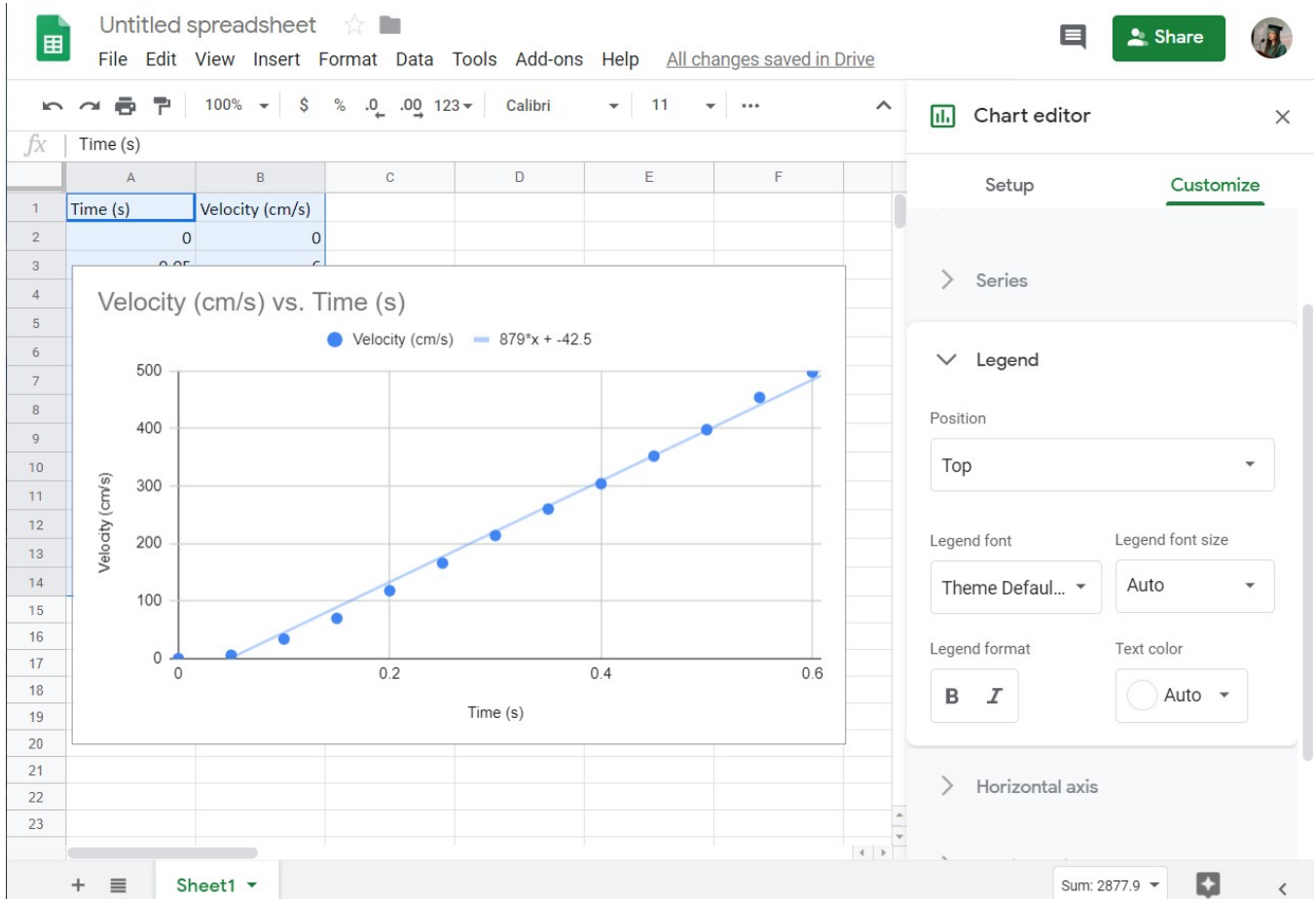
The Chart editor panel is open to the 'Customize' tab. Under 'Chart & axis titles', the 'Chart title' dropdown is set to 'Velocity (cm/s) vs. Time (s)'. The 'Title text' field contains 'Velocity (cm/s) vs. Time (s)'. The 'Title font' is 'Theme Default...' and the 'Title font size' is 'Auto'. The 'Title format' is set to bold (B), italic (I), and underline (U). The 'Title text color' is set to 'Auto'.

6. Click on the “Series” section to configure the trendline. Scroll down and click on the “Trendline” button to show it on the chart, then click on the “Label” dropdown menu and select “Use Equation”. There are also options here to configure the style of the trendline, as well as displaying the R-squared value. As of Spring 2020 there does not seem to be a way to set a manual intercept.

The screenshot shows a Google Sheets interface with a chart titled "Velocity (cm/s) vs. Time (s)". The chart displays a scatter plot of data points and a linear trendline with the equation  $879x - 42.5$ . The x-axis is labeled "Time (s)" and ranges from 0 to 0.6. The y-axis is labeled "Velocity (cm/s)" and ranges from 0 to 500. The Chart editor panel on the right is open to the "Customize" tab, showing options for Error bars, Data labels, and Trendline. The Trendline option is checked, and the Label dropdown is set to "Use Equation".

Time (s)	Velocity (cm/s)
0.0	0
0.05	20
0.1	40
0.15	60
0.2	80
0.25	100
0.3	120
0.35	140
0.4	160
0.45	180
0.5	200
0.55	220
0.6	240

7. Click on the “Legend” section to adjust the plot legend. There are options for placement as well as style here.



8. If using Microsoft Word or Google Docs, you can right click the plot to copy it and then paste it directly into your document. If you are using LaTeX, you will need to convert it to an image file first (using Paint, taking a screenshot, etc.).