

Appendix G: Using Excel to Create a Graph with Error Bars

You can use Excel to create graphs and add error bars, labels, trendlines, etc. To create a simple scatter plot with error bars follow these steps.

Creating a graph

- 1 Enter your data in an Excel spreadsheet as shown in Fig. 1.

	A	B	C	D
1	Time (s)	Distance (m)	sigma_D (m)	
2	4.68	1.05	0.1	
3	3	0.75	0.1	
4	3.2	0.95	0.07	
5	3.8	1	0.08	
6	4.3	1	0.09	
7	2.5	0.55	0.1	
8				
9				
10				

Figure 1: Entering your data

- 2 Label your columns with names and units.
- 3 Highlight the data that you want to graph, as shown in Fig. 2.

	A	B	C	D	
1	Time (s)	Distance (m)	σ_D (m)		
2	4.68	1.05	0.1		
3	3	0.75	0.1		
4	3.2	0.95	0.07		
5	3.8	1	0.08		
6	4.3	1	0.09		
7	2.5	0.55	0.1		
8					
9					
10					
11					
12					

Figure 2: Highlighting data to be graphed

- 4 Click the Insert tab at the top left of the Excel window (or click the chart icon in the horizontal tool bar).

- Click the “Scatter” icon.

- Click the picture of a graph with just the points (no lines) as shown in Fig. 3.

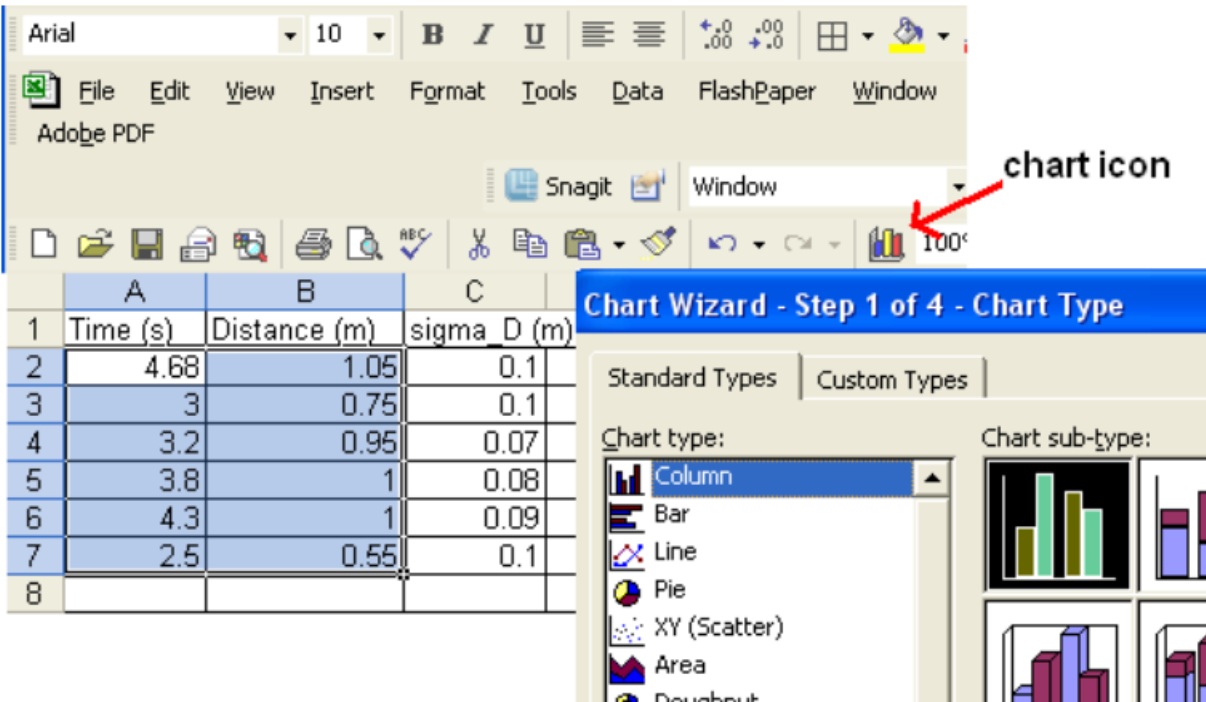


Figure 3: Choosing your graph

- 5 Your graph should appear as seen in Fig. 4.

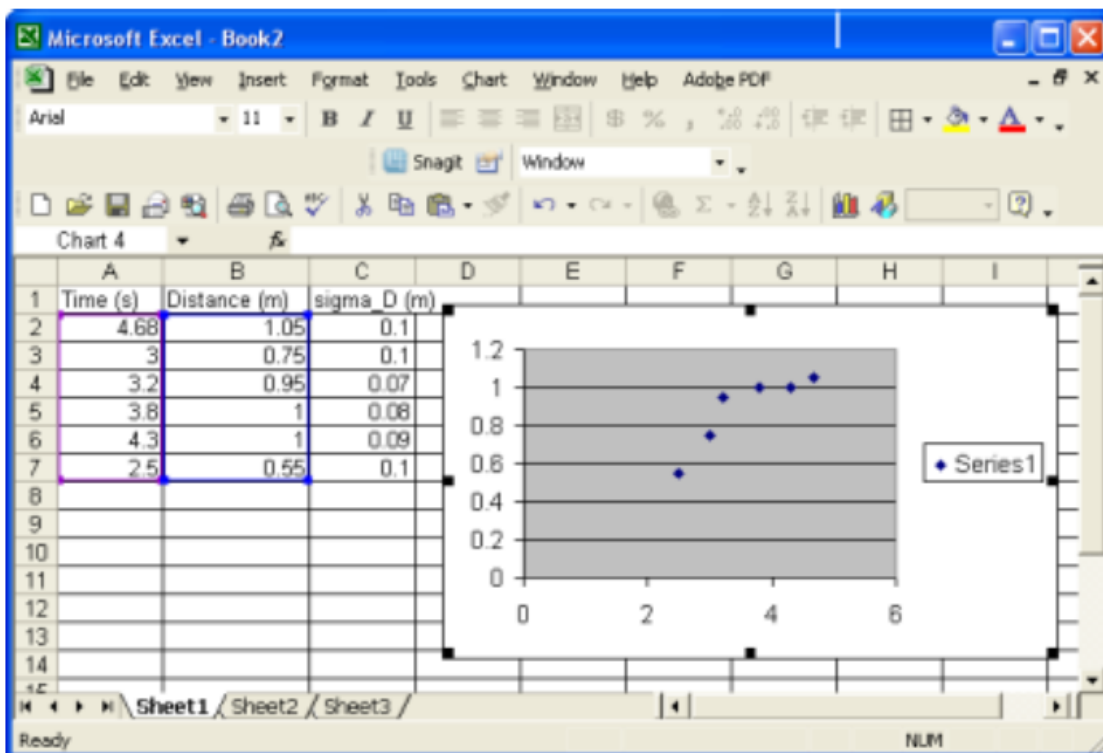


Figure 4: Inserting your graph

Adding error bars

6 To add error bars, right click one of the points in the graph.

- Select “format data series.”
- A window as shown in Fig. 5 will appear.

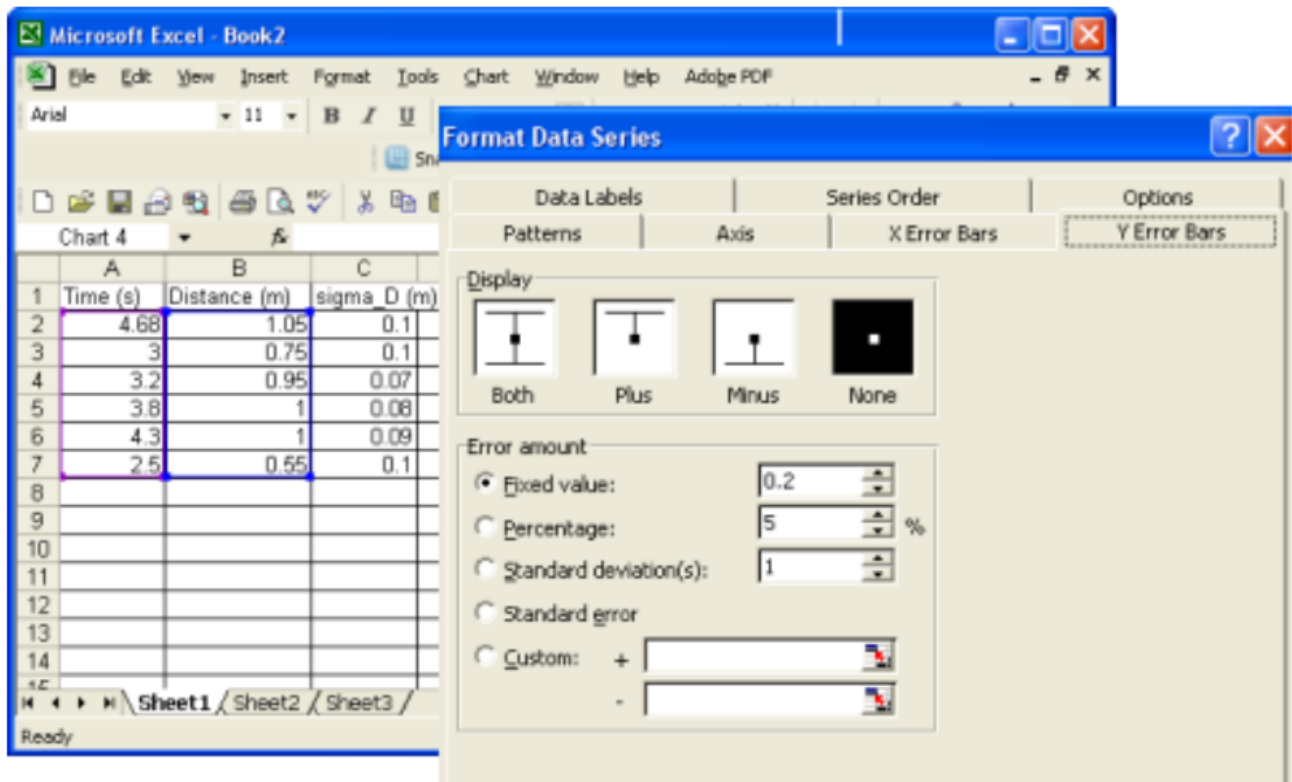


Figure 5: Error bar menu

7 Click on the 'Y Error Bars' tab if it is not already selected.

- Click 'Both' for display option and 'Custom' for error amount.
- The cursor will automatically appear in the '+' next to 'Custom'.
- Select cells C2 through C7 and you will see these cells listed in the '+' box for the positive errors for each data point. See Fig. 6.

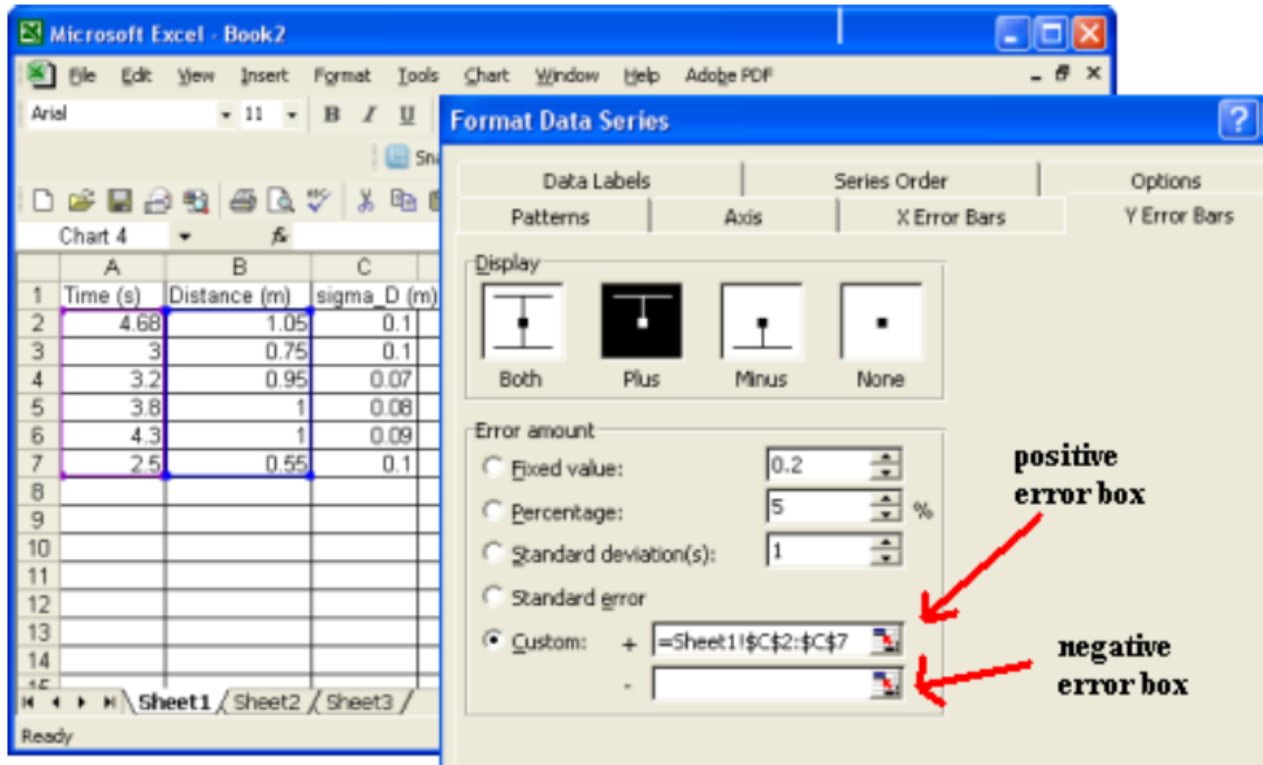


Figure 6: Entering values for error bars

8 Select the '—' error bar box and once again select cells C2 through C7.

- Click 'OK' to complete this step.
- Your graph will now have error bars as shown in Fig. 7.

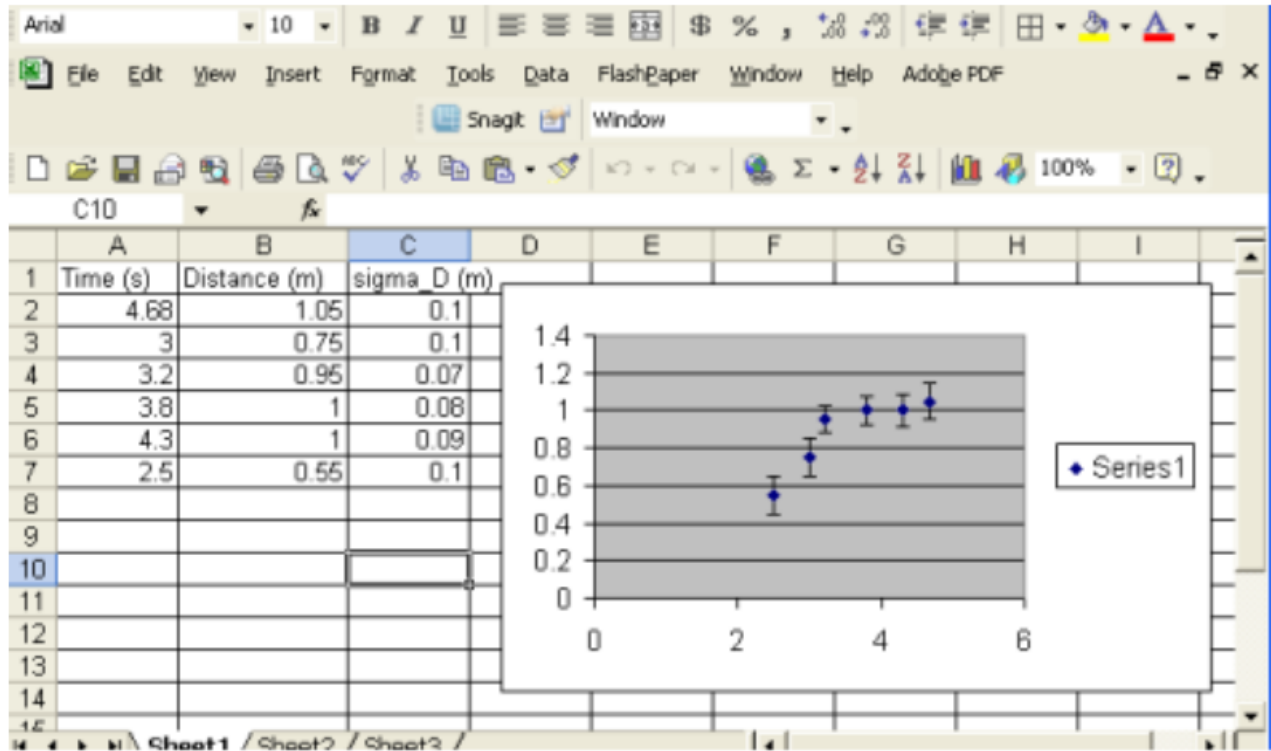


Figure 7: Graph with error bars added