

Object Tracker Beta: Plots and trendlines using Google Sheets

1. Create scatter plot

Identify the y-variable and x-variable of your plot (Hint: Time is almost always the x-variable). Highlight your entire y-variable column (1). Then hold down the CTRL key (or Command key on Mac) and highlight the entire x-variable column (2). Holding the CTRL key allows you to highlight/select multiple things at once. Now both columns should be highlighted.

1.

| | A | B | C |
|----|----------|----------|----------|
| 1 | t | x | y |
| 2 | 0.15 | 0.728571 | 2.385714 |
| 3 | 0.154167 | 0.728571 | 2.421429 |
| 4 | 0.158333 | 0.732143 | 2.430357 |
| 5 | 0.1625 | 0.737143 | 2.446667 |
| 6 | 0.166667 | 0.740136 | 2.463946 |
| 7 | 0.170833 | 0.742286 | 2.476571 |
| 8 | 0.175 | 0.744762 | 2.497619 |
| 9 | 0.179167 | 0.752721 | 2.508163 |
| 10 | 0.183333 | 0.75559 | 2.520497 |

Click "Insert" at the top of the screen and then "Chart". A chart will be inserted, and the "Chart Editor" menu should automatically appear on the right side of the screen (if not, click the symbol with 3 dots in the upper right corner of the plot and click "Edit Chart"). Change the "Chart type" to "Scatter chart".

2.

| | A | B | C |
|----|----------|----------|----------|
| 1 | t | x | y |
| 2 | 0.15 | 0.728571 | 2.385714 |
| 3 | 0.154167 | 0.728571 | 2.421429 |
| 4 | 0.158333 | 0.732143 | 2.430357 |
| 5 | 0.1625 | 0.737143 | 2.446667 |
| 6 | 0.166667 | 0.740136 | 2.463946 |
| 7 | 0.170833 | 0.742286 | 2.476571 |
| 8 | 0.175 | 0.744762 | 2.497619 |
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2. Fit a trendline to the plot

In the Chart Editor menu, go to the "Customize" tab at the top and open the "Series" section. Scroll down to the bottom of the Series section and check the box next to "Trendline".

Select the appropriate trendline type (linear, exponential, polynomial, etc.). At the bottom, change the "Label" to "Use Equation". Record this equation.

Note: If you select "Polynomial" trendline type, there is an option to change the "Degree" just below. 2nd degree is a quadratic ($\sim x^2$), 3rd degree is a cubic ($\sim x^3$) etc.

Chart editor

Setup **Customize**

> Chart style

> Chart & axis titles

Series

Error bars

Data labels

Trendline

Type: Polynomial

Line color: Blue

Polynomial degree: 2

Line opacity: 40%

Line thickness: 2px

Label: Use Equation