

Learning to Create Connected Scatter Plots in Google Sheets

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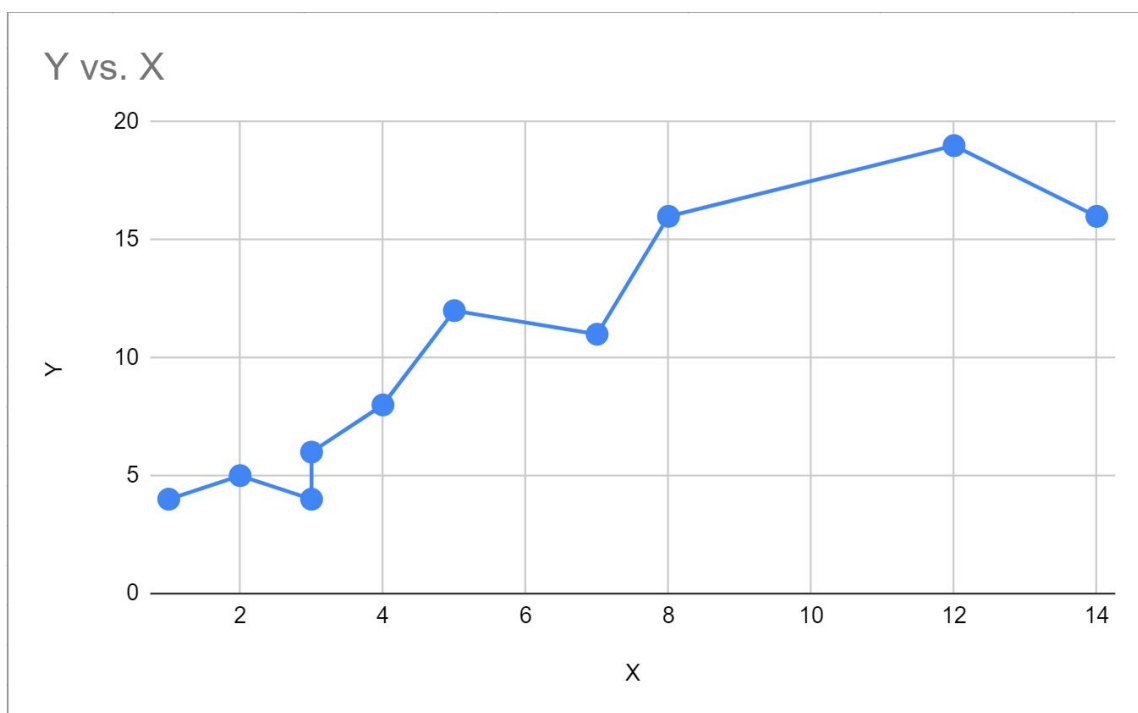
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When analyzing complex data, visualization must often represent not just the relationship between variables but also the sequential **progression** or **connection** of observations. A standard [scatter plot](#) is excellent for displaying the **distribution** of individual data points, revealing correlations and patterns. However, when the order or trajectory of these points holds significant meaning--such as data collected over time--disconnected points fail to tell the complete story. This critical gap is filled by the **scatter plot with lines**, a hybrid visualization illustrating both the distribution and the connection between successive observations.

Although [Google Sheets](#) serves as a robust and highly accessible spreadsheet application, it does not offer an inherent, single chart type that seamlessly combines the discrete markers of a scatter plot with the continuous flow of a line chart. This structural limitation can initially pose a hurdle for analysts seeking to clearly represent both the location and the trend path of their data points.

This comprehensive guide provides a detailed, step-by-step workaround. We will demonstrate how to leverage the customization features within [Google Sheets](#) to construct a visually compelling and accurate **scatter plot with lines**. By the end of this tutorial, you will be proficient in creating dynamic visualizations like the one shown below, ensuring your data communicates a complete and engaging narrative.



Understanding the Utility of Connected Scatter Plots

A conventional [scatter plot](#) excels at establishing relationships between two distinct numerical variables. In this type of chart, every point represents a unique observation, positioned according

to its corresponding values on the X and Y axes. This setup is indispensable for exploratory data analysis, enabling the quick identification of correlations, data clusters, or influential outliers within a given [dataset](#).

However, the value of visualization shifts dramatically when the observations are inherently sequential. Consider scenarios involving tracking stock market performance over days, mapping the trajectory of an object in motion, or charting a sequence of measurements in a controlled experiment. In these instances, the temporal or chronological connection between one point and the next holds critical explanatory power. A simple, disconnected scatter plot, while accurate in terms of point location, completely fails to illustrate this crucial progression or the path taken over time.

By implementing lines to connect successive data points, we effectively engineer a hybrid chart that capitalizes on the strengths of two distinct visualization types. This method retains the precise, individual observation marking characteristic of a scatter plot while integrating the clear trend-showing capability of a [line chart](#). This technique is overwhelmingly preferred in analytical fields, including engineering (for performance curves), financial analysis (for dynamic price movements), and biological studies (for illustrating growth patterns), where the sequence of data is equally important as the magnitude of individual values.

Step 1: Preparing Your Data for Visualization

The success of any informative chart rests upon the foundation of properly structured data. Before attempting to visualize your [dataset](#), it is mandatory to organize it logically within your [Google Sheets](#) spreadsheet. To construct a scatter plot with lines, you must arrange your data into at least two columns of numerical variables: one column dedicated to the independent variable (which will define the X-axis coordinates) and one or more columns for the dependent variable(s) (defining the Y-axis coordinates).

Crucially, the sequential order of your rows dictates the order in which the lines will connect the points on the resulting chart. Therefore, if the chronological sequence or progression is central to your analysis, ensure that your data is correctly sorted prior to visualization. The ability of the lines to accurately represent a trend is entirely dependent on the input order of the data points.

For the purpose of this demonstration, we will begin by entering a small example [dataset](#) into the spreadsheet. While we use simple numerical values here to clearly illustrate the charting process, these foundational principles are universally applicable to any numerical time-series or sequential data you intend to plot.

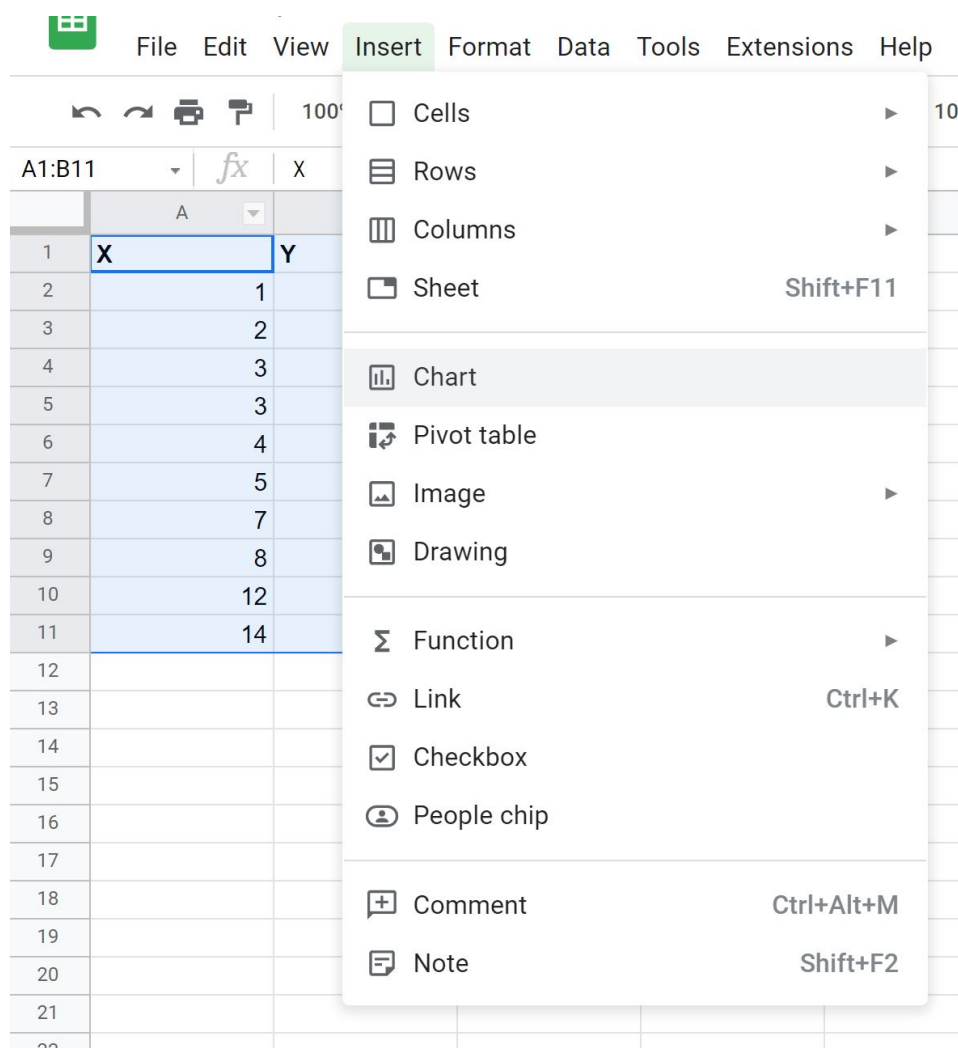
	A	B	C	D	
1	X	Y			
2		1	4		
3		2	5		
4		3	4		
5		3	6		
6		4	8		
7		5	12		
8		7	11		
9		8	16		
10		12	19		
11		14	16		
12					
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Confirm that your data is entered accurately into the corresponding cells. For instance, if your X-values reside in Column A and your Y-values in Column B, [Google Sheets](#) automatically interprets these pairs as the (x, y) coordinates for your plot. Correct and precise data entry constitutes the first and most critical step toward generating a meaningful visualization.

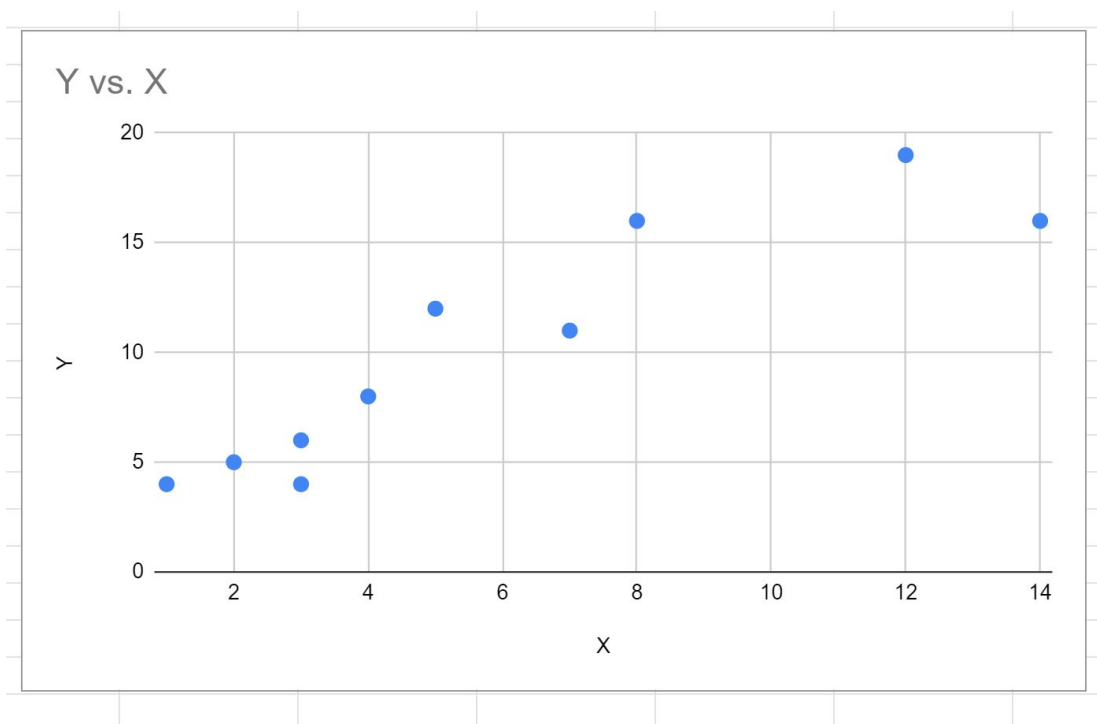
Step 2: Initiating Chart Creation and Selecting a Line Chart

Once your data is meticulously prepared, the next step involves instructing [Google Sheets](#) to render the chart. Start by highlighting the entire data range, including any header rows you may have used. In our example illustrated above, this range would be **A1:B11**. With the data selected, navigate to the main menu bar at the top of the interface.

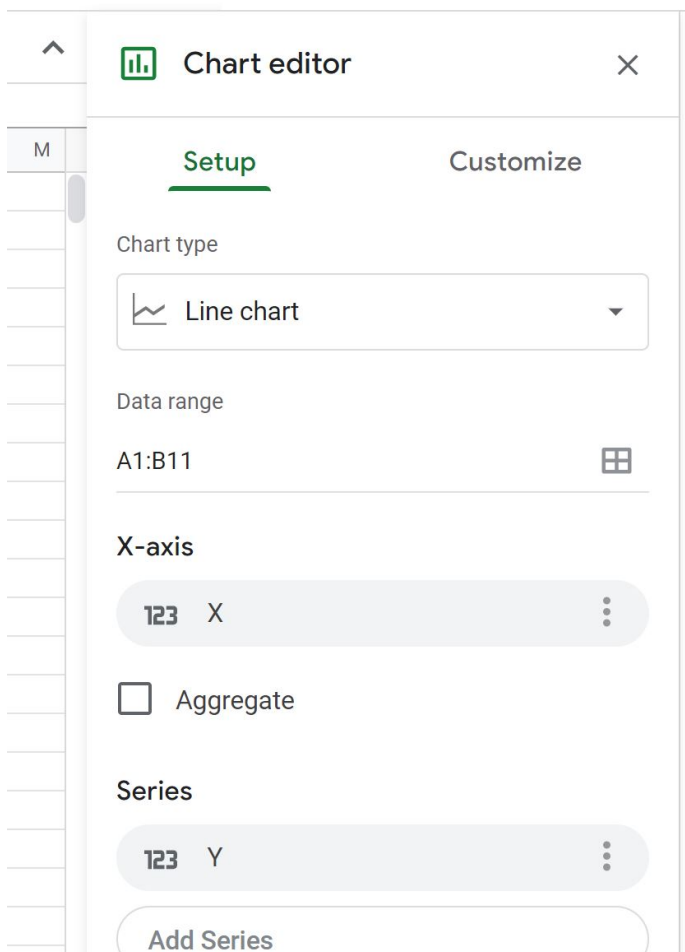
Click on **Insert**, and then select **Chart** from the subsequent dropdown menu. This action serves two purposes: it inserts a provisional chart into your sheet and automatically opens the powerful [Chart editor](#) panel on the right side of the screen, where all customizations are managed.



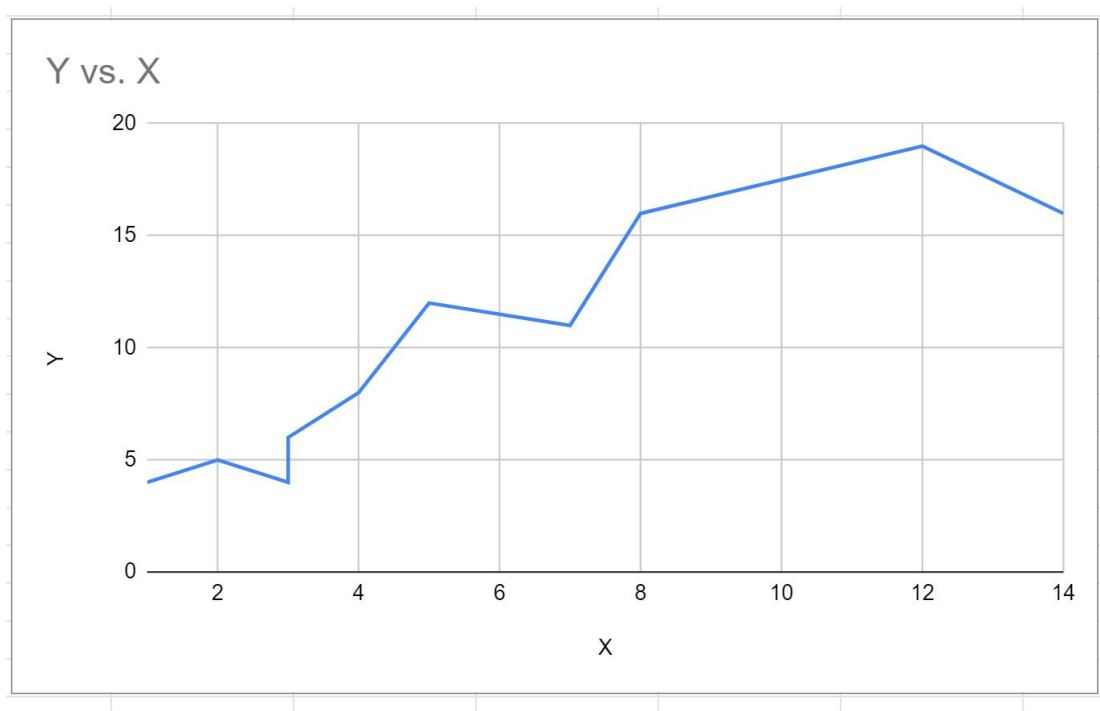
In many instances, when [Google Sheets](#) detects two columns of numerical data, it intelligently defaults to inserting a standard [scatter plot](#), which initially appears like this:



While this is an accurate representation of the points' distribution, it lacks the sequential connection we require. To introduce the necessary lines, we must change the chart type. Within the [Chart editor](#) panel, locate the "Setup" tab and find the **Chart type** dropdown menu. Scroll through the options and explicitly select [Line chart](#). This fundamental conversion is the technical trick that permits Google Sheets to draw connecting lines between your data points based on the exact order they appear in your original spreadsheet rows.



Upon selection, the visualization immediately transforms, producing a chart where every data point is now linked by a continuous line, illustrating the sequence and underlying trend within your data structure.



At this juncture, you have successfully generated a basic [line chart](#). However, to fully capture the aesthetic and granular detail of a "scatter plot with lines," we must now reintroduce clear, distinct markers for each observation point.

Step 3: Enhancing the Line Chart with Distinct Data Points

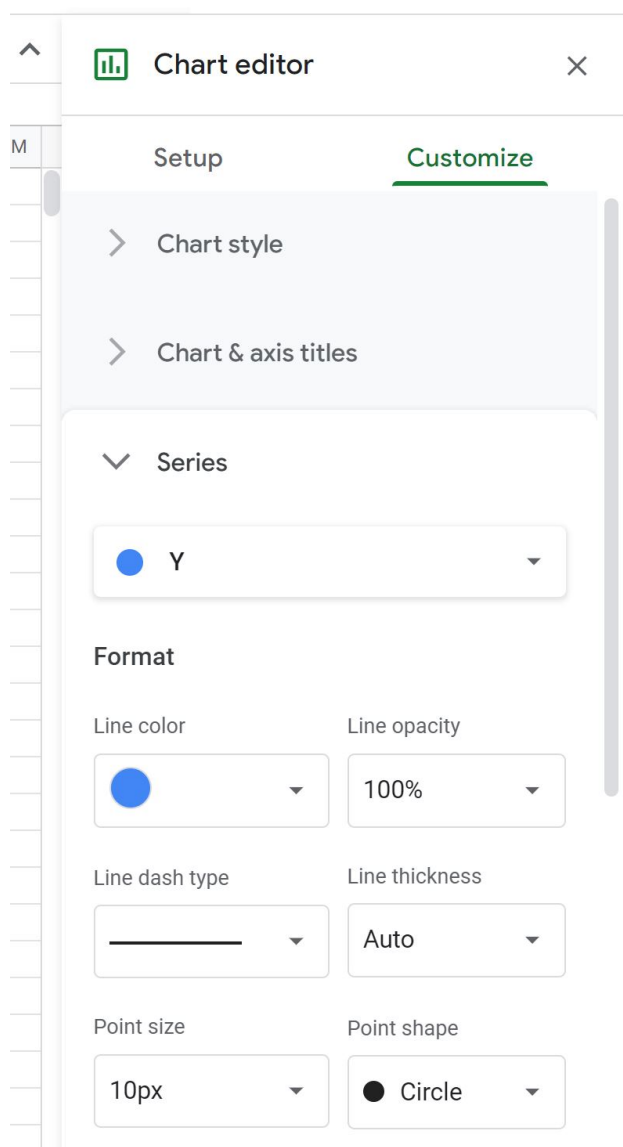
The previous step converted our visualization into a [line chart](#), but the individual data points themselves may appear subtle or even invisible, depending on the default settings. To achieve the classic look of a **scatter plot with lines**--where both the overall trajectory and the precise location of each observation are unequivocally emphasized--we must explicitly configure markers onto the lines. This crucial refinement is executed using the customization features within the [Chart editor](#) panel.

In the active [Chart editor](#) panel, navigate away from the "Setup" tab and click on the **Customize** tab. This section provides access to granular options necessary for refining the visual presentation of your chart elements.

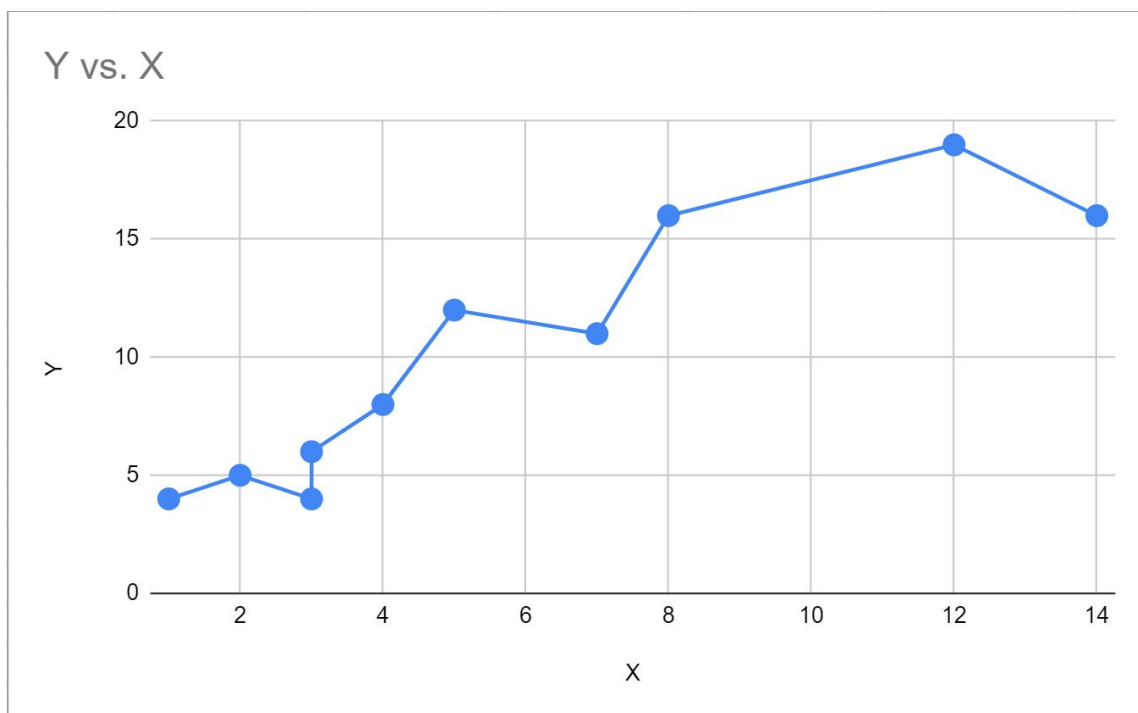
Within the "Customize" tab, locate and expand the [Series](#) section. This area manages settings related to how your data lines and points are rendered. To introduce distinct markers for every data point, search for the **Point size** configuration. This setting may be defaulted to "None" or a minimal size, making the points difficult to discern.

Select a prominent point size from the available dropdown menu, such as **10px**. Increasing the

point size instantly makes the individual observations clearly visible on your line chart. This simple customization successfully merges the visual strengths of a traditional [scatter plot](#) and a line chart into one comprehensive display.



After adjusting the point size, [Google Sheets](#) will immediately update your chart to display prominent markers along the connecting lines, resulting in the final desired visualization:



Your chart now precisely embodies the look and function of a **scatter plot with lines**, where each data point is clearly marked and connected sequentially to its adjacent observations. This visualization is uniquely powerful for simultaneously demonstrating overall trends and retaining the necessary granularity of individual measurements.

Customization and Further Refinements

The [Chart editor](#) in Google Sheets provides an expansive suite of **format options** allowing you to extensively fine-tune the appearance and maximize the readability of your newly created scatter plot with lines. Beyond simply adding point markers, you have the ability to modify nearly every visual component of the chart to align with specific branding, aesthetic preferences, or complex reporting standards.

We encourage you to explore the capabilities within the "Customize" tab, focusing on options such as:

Chart style: Modify fundamental elements such as the background color, the default font, and the thickness or style of chart borders.

Chart & axis titles: Always provide clear, descriptive, and concise titles for the entire chart and each axis. Effective titling is paramount for ensuring immediate audience comprehension.

Series: This section allows detailed control over the data line itself—including line color, line thickness, and dash type. Furthermore, you can adjust the color and shape of the data points you introduced in Step 3.

Legend: Strategically position the legend for optimal clarity, or remove it entirely if only a single data series is being displayed.

Horizontal axis & Vertical axis: Customize the axis scales, label formatting, and the density of tick marks and gridlines to improve the precision of value readings.

Gridlines & ticks: Add or remove gridlines selectively to help viewers accurately read specific values from the plot.

Experimentation with these settings is key to producing a chart that is not only mathematically informative but also visually appealing and intuitive. A well-designed chart ensures that the audience can rapidly assimilate the key insights presented by your data, thereby significantly increasing the impact of your visualization.

Conclusion: Mastering Connected Data Visualization

While [Google Sheets](#) may initially lack a dedicated "scatter plot with lines" chart type, this tutorial has successfully outlined a highly reliable and efficient workaround. By initiating the visualization as a [line chart](#) and subsequently customizing the data **series** to include prominent data points, you can achieve the desired hybrid visualization that expertly illustrates both individual observations and their sequential, interconnected relationships.

This methodology significantly enhances your ability to represent complex data relationships, such as time-series performance, experimental results over progression, or complex sequential patterns, with unmatched clarity and depth of insight. The extensive customization options available in the [Chart editor](#) further guarantee that your final visualizations are accurate, aesthetically polished, and perfectly tailored to your specific analytical requirements.

We strongly encourage you to apply these documented steps using your own [datasets](#) and to thoroughly explore the multitude of format options within the Customize tab. Mastering these advanced charting techniques will dramatically expand your data visualization capabilities within Google Sheets, empowering you to tell more robust and compelling stories with your numerical information.

Additional Resources

The following tutorials explain how to create other common visualizations in [Google Sheets](#):