

How to choose a data visualization

If your data has a changing variable

You can use these visualizations

Line charts

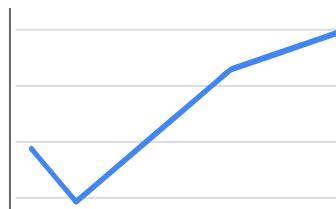
Individual data points for a changing variable are connected with a continuous line

Download a [stacked line chart](#) in Google Sheets

Which look like this

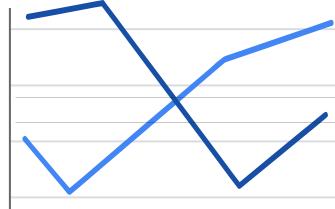
Single:

when the changing variable is for a single category



Stacked:

when the changing variable applies to more than one category and you want to compare categories



Column charts

(vertical bar charts)

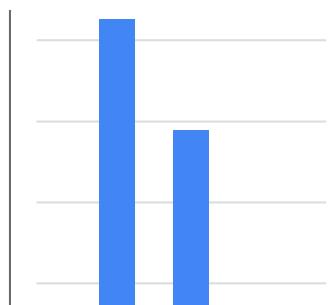
Individual data points for a changing variable are represented as vertical columns

Note: If the values being compared are vastly different, a column chart might be too tall. You can use a horizontal bar chart instead.

Download [examples](#) in Google Sheets

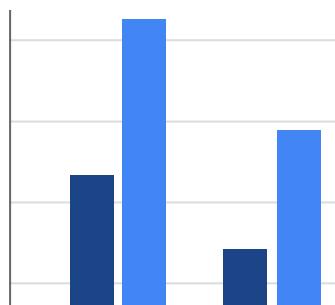
Single:

when the changing variable is for a single category



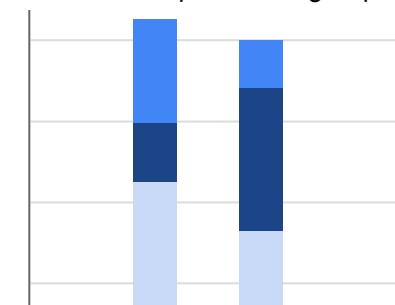
Grouped:

when the variable change applies to more than one category and you want to compare categories



Stacked:

when the variable change applies to more than one category and you want to compare categories without the spread of a group



Horizontal bar charts

Individual data points for a changing variable for one or more categories; these appear like rotated column charts

Download [examples](#) in Google Sheets

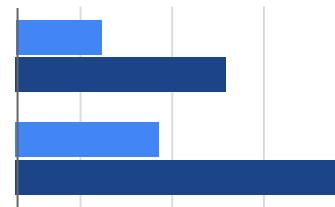
Single:

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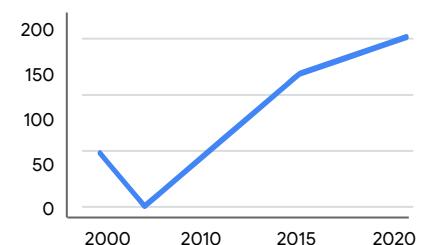
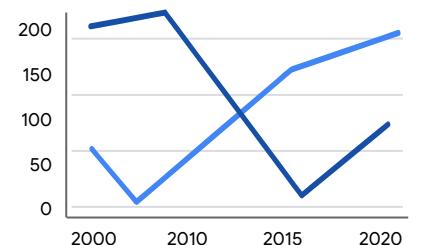
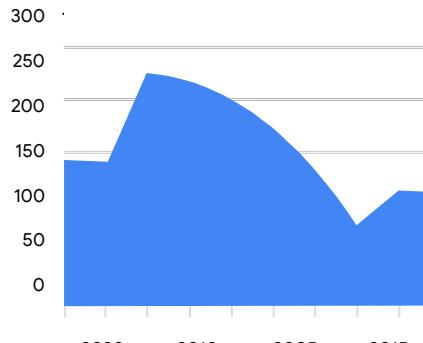
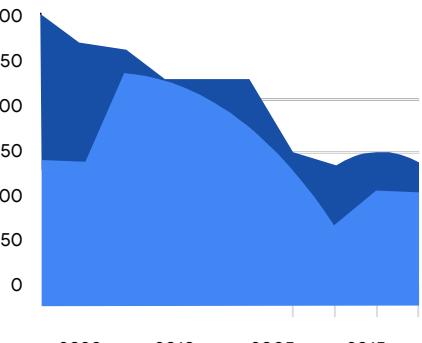
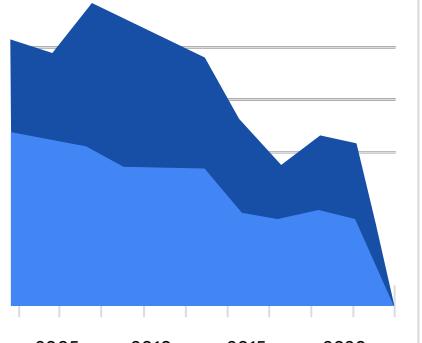


Stacked:

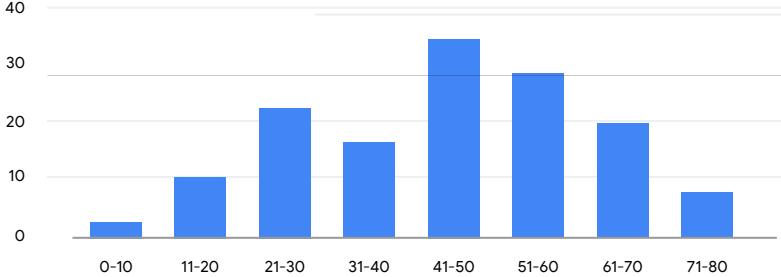
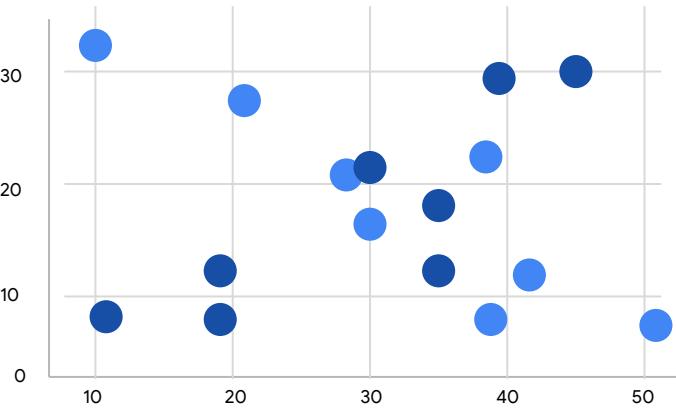
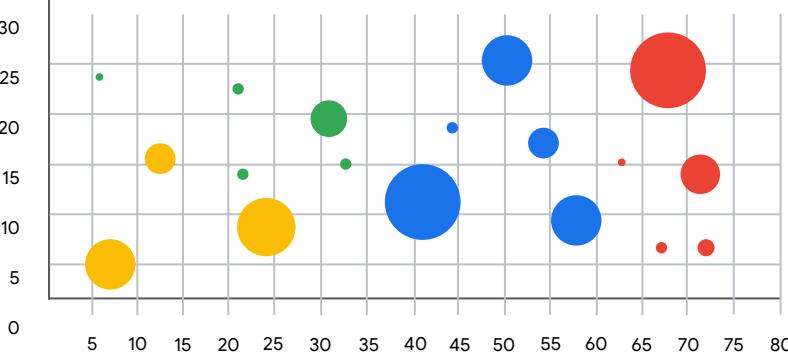
when the variable change applies to more than one category and you want to compare categories without the spread of a group



How to choose a data visualization

If your data has a changing variable measured over time			
You can use these visualizations	Which look like this		
Line charts Individual data points for a changing variable are connected with a continuous line Download a stacked line chart in Google Sheets	The line charts are similar to those for a changing variable but time is shown on the x-axis	Single: when the change over time is for a single item or classification 	Stacked: when the change over time is for multiple items or classifications 
Area charts Individual data points for a changing variable are connected with a continuous line and the area under the line is filled in Download a stacked area chart in Google Sheets	Single: when the variable change is for a single category over time 	Unstacked: when data doesn't align on the x-axis (data is from different time points) 	Stacked: when data aligns on the x-axis (data is from the same time points) 

How to choose a data visualization

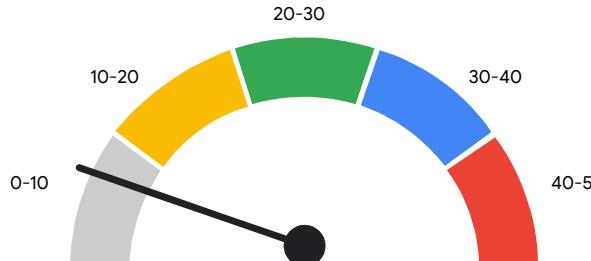
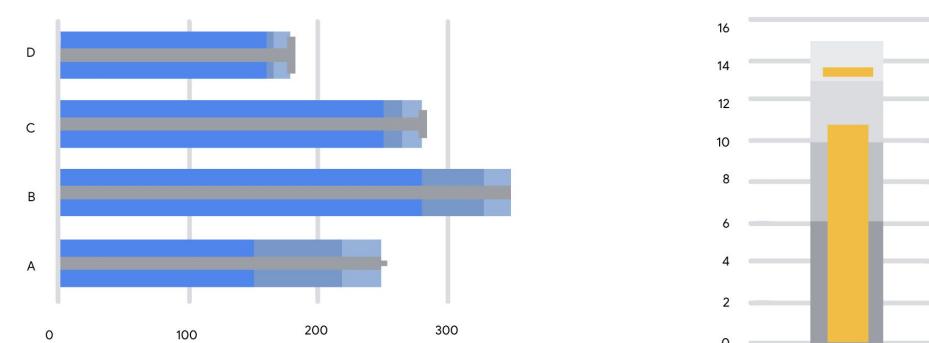
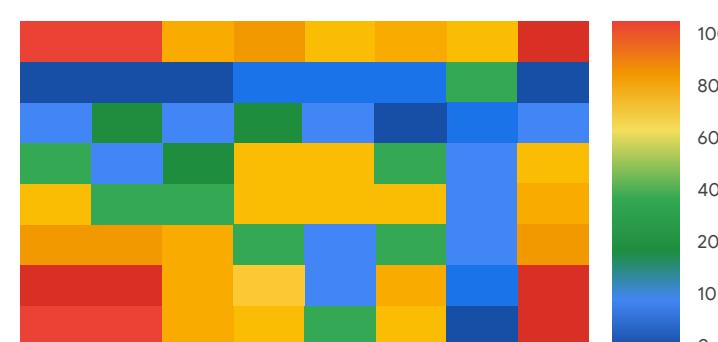
If your data has a numeric trend																																																													
You can use these visualizations	Which look like this																																																												
Histograms Individual data points are categorized into columns that each represent a different range of values Download a histogram in Google Sheets	 <p>A histogram with 8 bars representing age ranges from 0-10 to 71-80. The y-axis ranges from 0 to 40. The distribution is skewed right, with the highest frequency in the 41-50 range (approx. 35) and the lowest in the 0-10 range (approx. 3).</p> <table border="1"><thead><tr><th>Age Range</th><th>Frequency</th></tr></thead><tbody><tr><td>0-10</td><td>3</td></tr><tr><td>11-20</td><td>10</td></tr><tr><td>21-30</td><td>22</td></tr><tr><td>31-40</td><td>17</td></tr><tr><td>41-50</td><td>35</td></tr><tr><td>51-60</td><td>28</td></tr><tr><td>61-70</td><td>20</td></tr><tr><td>71-80</td><td>8</td></tr></tbody></table>	Age Range	Frequency	0-10	3	11-20	10	21-30	22	31-40	17	41-50	35	51-60	28	61-70	20	71-80	8																																										
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Scatter charts Individual data points are displayed, but without a connecting line like in a line chart Download a scatter chart in Google Sheets	 <p>A scatter plot with x-axis values from 10 to 50 and y-axis values from 0 to 35. The data points are scattered without a clear trend.</p> <table border="1"><thead><tr><th>X</th><th>Y</th></tr></thead><tbody><tr><td>10</td><td>32</td></tr><tr><td>10</td><td>8</td></tr><tr><td>15</td><td>28</td></tr><tr><td>18</td><td>13</td></tr><tr><td>20</td><td>13</td></tr><tr><td>20</td><td>7</td></tr><tr><td>25</td><td>22</td></tr><tr><td>30</td><td>17</td></tr><tr><td>30</td><td>22</td></tr><tr><td>32</td><td>21</td></tr><tr><td>35</td><td>18</td></tr><tr><td>35</td><td>22</td></tr><tr><td>38</td><td>12</td></tr><tr><td>40</td><td>8</td></tr><tr><td>40</td><td>30</td></tr><tr><td>42</td><td>23</td></tr><tr><td>45</td><td>13</td></tr><tr><td>48</td><td>12</td></tr><tr><td>50</td><td>7</td></tr><tr><td>50</td><td>30</td></tr></tbody></table>	X	Y	10	32	10	8	15	28	18	13	20	13	20	7	25	22	30	17	30	22	32	21	35	18	35	22	38	12	40	8	40	30	42	23	45	13	48	12	50	7	50	30																		
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Bubble charts Individual data points are displayed as bubbles like in a scatter plot, but numeric values are compared relative size of the bubbles Download a bubble chart in Google Sheets	 <p>A bubble chart with x-axis values from 5 to 80 and y-axis values from 0 to 30. The bubbles vary in size and color (green, yellow, blue, red), representing relative values.</p> <table border="1"><thead><tr><th>X</th><th>Y</th><th>Size</th><th>Color</th></tr></thead><tbody><tr><td>5</td><td>25</td><td>Large</td><td>Green</td></tr><tr><td>10</td><td>17</td><td>Medium</td><td>Yellow</td></tr><tr><td>20</td><td>23</td><td>Small</td><td>Green</td></tr><tr><td>25</td><td>16</td><td>Medium</td><td>Yellow</td></tr><tr><td>30</td><td>21</td><td>Large</td><td>Green</td></tr><tr><td>35</td><td>16</td><td>Medium</td><td>Green</td></tr><tr><td>40</td><td>12</td><td>Very Large</td><td>Blue</td></tr><tr><td>45</td><td>20</td><td>Medium</td><td>Blue</td></tr><tr><td>50</td><td>27</td><td>Large</td><td>Blue</td></tr><tr><td>55</td><td>18</td><td>Medium</td><td>Blue</td></tr><tr><td>60</td><td>10</td><td>Medium</td><td>Blue</td></tr><tr><td>65</td><td>8</td><td>Small</td><td>Red</td></tr><tr><td>70</td><td>15</td><td>Medium</td><td>Red</td></tr><tr><td>70</td><td>8</td><td>Small</td><td>Red</td></tr></tbody></table>	X	Y	Size	Color	5	25	Large	Green	10	17	Medium	Yellow	20	23	Small	Green	25	16	Medium	Yellow	30	21	Large	Green	35	16	Medium	Green	40	12	Very Large	Blue	45	20	Medium	Blue	50	27	Large	Blue	55	18	Medium	Blue	60	10	Medium	Blue	65	8	Small	Red	70	15	Medium	Red	70	8	Small	Red
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How to choose a data visualization

If your data has partial and whole results

You can use these visualizations	Which look like this													
Pie charts 2D or 3D proportions (slices) are shown adding up to a whole or 100% Download a 2D pie chart in Google Sheets	Two-dimensional: A 2D pie chart divided into four segments. The largest segment is green at 44%, followed by yellow at 31%, blue at 19%, and the smallest is red at 6%. Each segment is labeled with its percentage value. <table><tr><td>44%</td><td>31%</td><td>19%</td><td>6%</td></tr></table>	44%	31%	19%	6%	Three-dimensional: A 3D pie chart showing the same proportions as the 2D version. The green segment is the largest at 44%, followed by yellow at 31%, blue at 19%, and red at 6%. Each segment is labeled with its percentage value. <table><tr><td>44%</td><td>31%</td><td>19%</td><td>6%</td></tr></table>	44%	31%	19%	6%				
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Donut charts 2D or 3D proportions (segments) adding up to a whole or 100% Download a 2D donut chart in Google Sheets	Two-dimensional: A 2D donut chart with a hole in the center, divided into six segments. The segments are labeled with their percentages: 4.4%, 4.4%, 19.3%, 19.3%, 14.0%, and 38.0%. The segments are colored green, blue, yellow, red, blue, and green respectively. <table><tr><td>4.4%</td><td>4.4%</td><td>19.3%</td><td>19.3%</td><td>14.0%</td><td>38.0%</td></tr></table>	4.4%	4.4%	19.3%	19.3%	14.0%	38.0%	Three-dimensional: A 3D donut chart showing the same proportions as the 2D version. The segments are labeled with their percentages: 4.4%, 4.4%, 19.3%, 19.3%, 14.0%, and 38.6%. The segments are colored green, blue, yellow, red, blue, and green respectively. <table><tr><td>4.4%</td><td>4.4%</td><td>19.3%</td><td>19.3%</td><td>14.0%</td><td>38.6%</td></tr></table>	4.4%	4.4%	19.3%	19.3%	14.0%	38.6%
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How to choose a data visualization

If your data is progressive	
You can use these visualizations	Which look like this
Gauge charts Single result is shown within a progressive range of values allowed Download gauge charts in Google Sheets	
Bullet charts Progressive result is shown as a horizontal or vertical bar chart moving towards a desired value	
If your data has intensity or frequency	
You can use these visualizations	Which look like this
Heat maps Results are shown by color gradations representing the strength or frequency of values; higher or more frequent values have more intense color	

How to choose a data visualization

If your data has intensity or frequency (continued)	
You can use these visualizations	Which look like this
Density maps Results are shown by color representing the number or frequency of data points in a given area on a map	