

# How to choose a data visualization

## If your data has a changing variable

### You can use these visualizations

### Which look like this

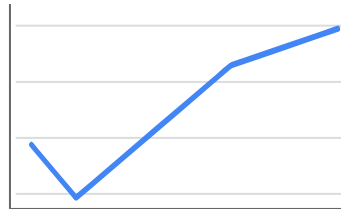
#### Line charts

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

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

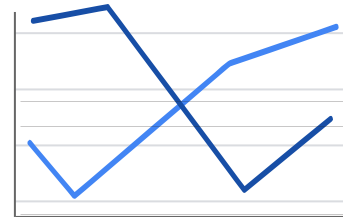
##### Single:

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)

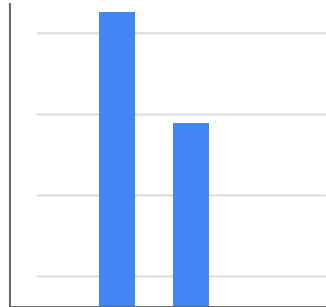
Individual data points for a changing variable are represented as vertical columns

**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

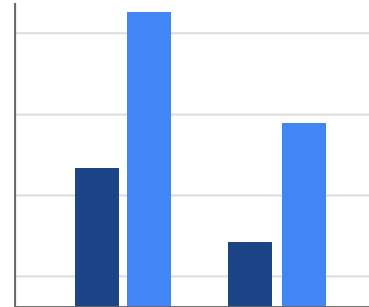
##### Single:

when the changing variable is for a single category



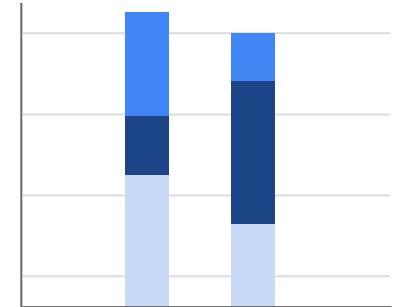
##### Grouped:

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



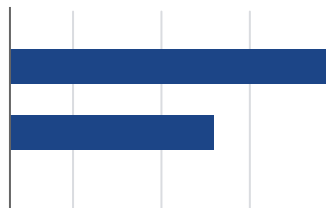
#### Horizontal bar charts

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

Download [examples](#) in Google Sheets

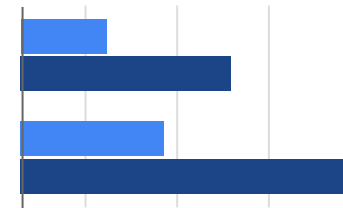
##### Single:

when the changing variable is for a single category



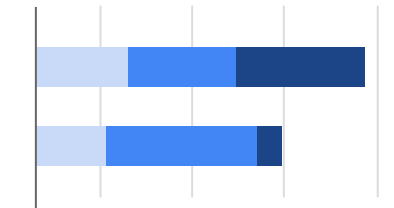
##### Grouped:

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

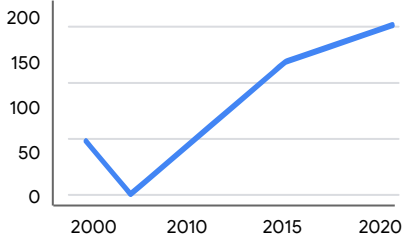
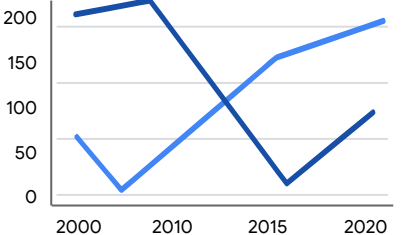
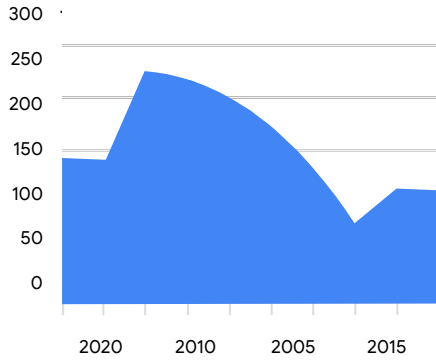
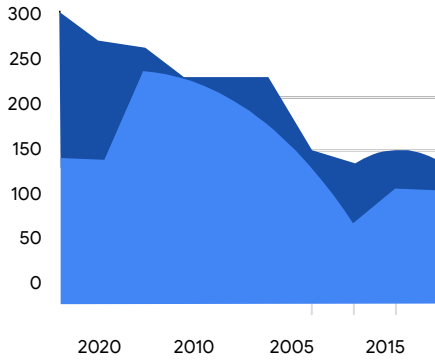
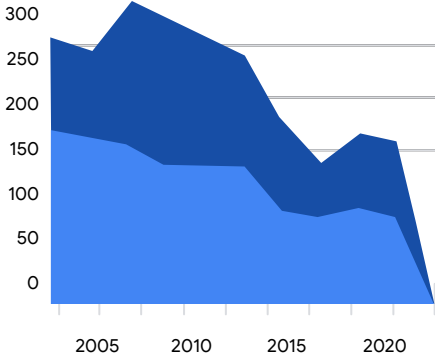


##### Stacked:

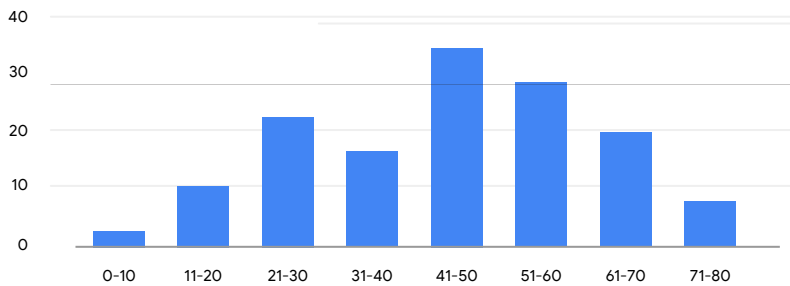
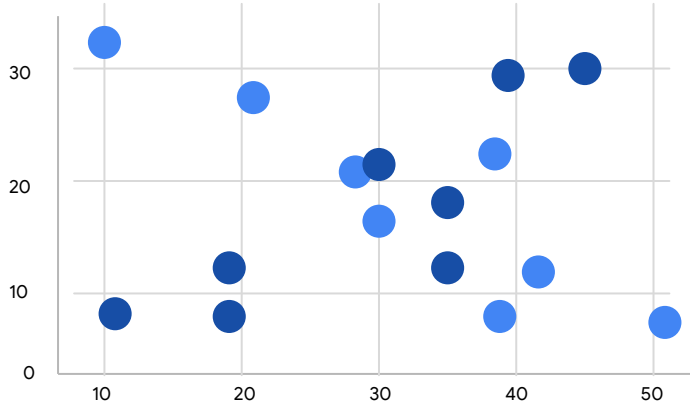
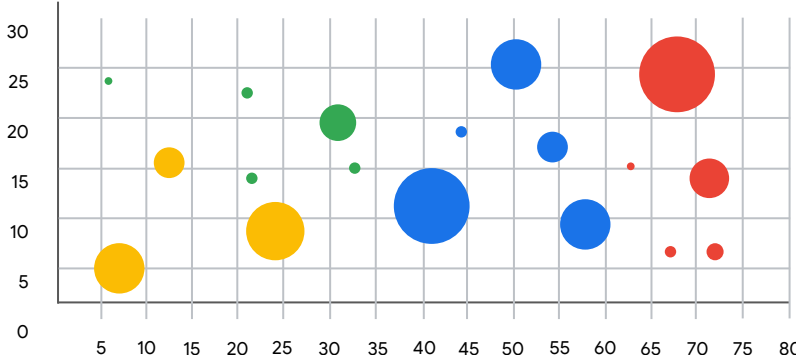
when the variable change applies to more than one category and you want to compare categories without the spread of a group



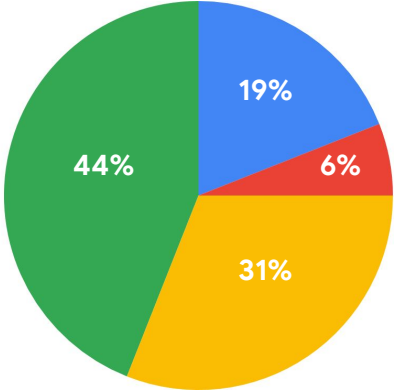
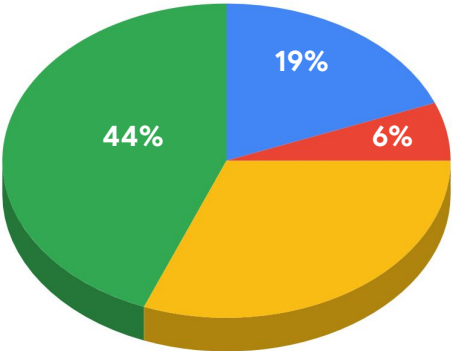
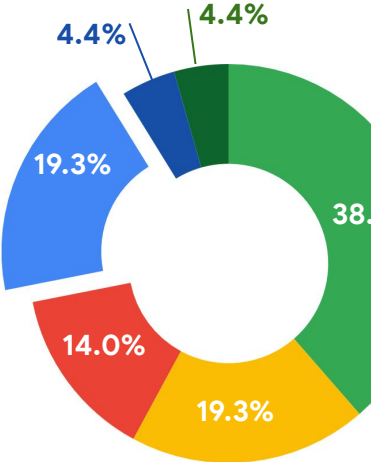
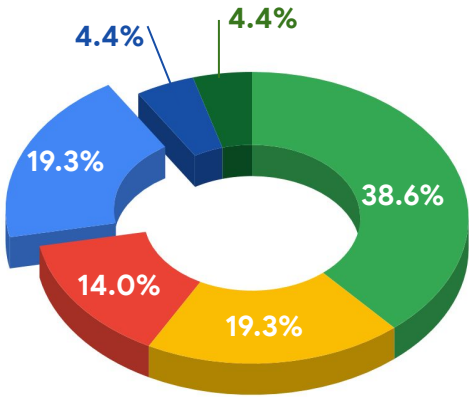
# How to choose a data visualization

If your data has a changing variable measured over time		
You can use these visualizations	Which look like this	
<h3>Line charts</h3> <p>Individual data points for a changing variable are connected with a continuous line</p> <p>Download a <a href="#">stacked line chart</a> in Google Sheets</p>	<p>The line charts are similar to those for a changing variable but <b>time</b> is shown on the x-axis</p>	<div><p><b>Single:</b> when the change over time is for a single item or classification</p></div> <div><p><b>Stacked:</b> when the change over time is for multiple items or classifications</p></div>
<h3>Area charts</h3> <p>Individual data points for a changing variable are connected with a continuous line and the area under the line is filled in</p> <p>Download a <a href="#">stacked area chart</a> in Google Sheets</p>	<p><b>Single:</b> when the variable change is for a single category over time</p> 	<div><p><b>Unstacked:</b> when data doesn't align on the x-axis (data is from different time points)</p></div> <div><p><b>Stacked:</b> when data aligns on the x-axis (data is from the same time points)</p></div>

# How to choose a data visualization

If your data has a numeric trend																																																																					
You can use these visualizations	Which look like this																																																																				
<h3>Histograms</h3> <p>Individual data points are categorized into columns that each represent a different range of values</p> <p>Download a <a href="#">histogram</a> in Google Sheets</p>	 <table><tr><th>Age Range</th><th>Frequency</th></tr><tr><td>0-10</td><td>2</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>16</td></tr><tr><td>41-50</td><td>34</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></table>	Age Range	Frequency	0-10	2	11-20	10	21-30	22	31-40	16	41-50	34	51-60	28	61-70	20	71-80	8																																																		
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<h3>Scatter charts</h3> <p>Individual data points are displayed, but without a connecting line like in a line chart</p> <p>Download a <a href="#">scatter chart</a> in Google Sheets</p>	 <table><tr><th>X-axis Value</th><th>Y-axis Value</th></tr><tr><td>10</td><td>33</td></tr><tr><td>10</td><td>8</td></tr><tr><td>20</td><td>28</td></tr><tr><td>20</td><td>12</td></tr><tr><td>20</td><td>7</td></tr><tr><td>30</td><td>21</td></tr><tr><td>30</td><td>17</td></tr><tr><td>30</td><td>22</td></tr><tr><td>35</td><td>18</td></tr><tr><td>35</td><td>12</td></tr><tr><td>40</td><td>30</td></tr><tr><td>40</td><td>23</td></tr><tr><td>40</td><td>7</td></tr><tr><td>45</td><td>30</td></tr><tr><td>45</td><td>12</td></tr><tr><td>50</td><td>7</td></tr></table>	X-axis Value	Y-axis Value	10	33	10	8	20	28	20	12	20	7	30	21	30	17	30	22	35	18	35	12	40	30	40	23	40	7	45	30	45	12	50	7																																		
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<h3>Bubble charts</h3> <p>Individual data points are displayed as bubbles like in a scatter plot, but numeric values are compared relative size of the bubbles</p> <p>Download a <a href="#">bubble chart</a> in Google Sheets</p>	 <table><tr><th>X-axis Value</th><th>Y-axis Value</th><th>Relative Size</th><th>Color</th></tr><tr><td>5</td><td>6</td><td>Large</td><td>Yellow</td></tr><tr><td>10</td><td>17</td><td>Medium</td><td>Yellow</td></tr><tr><td>20</td><td>10</td><td>Large</td><td>Yellow</td></tr><tr><td>20</td><td>24</td><td>Small</td><td>Green</td></tr><tr><td>25</td><td>15</td><td>Small</td><td>Green</td></tr><tr><td>30</td><td>21</td><td>Medium</td><td>Green</td></tr><tr><td>35</td><td>16</td><td>Small</td><td>Green</td></tr><tr><td>40</td><td>12</td><td>Large</td><td>Blue</td></tr><tr><td>45</td><td>20</td><td>Small</td><td>Blue</td></tr><tr><td>50</td><td>27</td><td>Medium</td><td>Blue</td></tr><tr><td>55</td><td>18</td><td>Medium</td><td>Blue</td></tr><tr><td>60</td><td>11</td><td>Medium</td><td>Blue</td></tr><tr><td>65</td><td>16</td><td>Small</td><td>Red</td></tr><tr><td>70</td><td>28</td><td>Large</td><td>Red</td></tr><tr><td>70</td><td>15</td><td>Medium</td><td>Red</td></tr><tr><td>75</td><td>8</td><td>Small</td><td>Red</td></tr></table>	X-axis Value	Y-axis Value	Relative Size	Color	5	6	Large	Yellow	10	17	Medium	Yellow	20	10	Large	Yellow	20	24	Small	Green	25	15	Small	Green	30	21	Medium	Green	35	16	Small	Green	40	12	Large	Blue	45	20	Small	Blue	50	27	Medium	Blue	55	18	Medium	Blue	60	11	Medium	Blue	65	16	Small	Red	70	28	Large	Red	70	15	Medium	Red	75	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
<p><b>Pie charts</b></p> <p>2D or 3D proportions (slices) are shown adding up to a whole or 100%</p> <p>Download a <a href="#">2D pie chart</a> in Google Sheets</p>	<div><p>Two-dimensional:</p></div> <div><p>Three-dimensional:</p></div>
<p><b>Donut charts</b></p> <p>2D or 3D proportions (segments) adding up to a whole or 100%</p> <p>Download a <a href="#">2D donut chart</a> in Google Sheets</p>	<div><p>Two-dimensional:</p></div> <div><p>Three-dimensional:</p></div>

## How to choose a data visualization

If your data is progressive	
You can use these visualizations	Which look like this
<b>Gauge charts</b> Single result is shown within a progressive range of values allowed  Download <a href="#">gauge charts</a> in Google Sheets	
<b>Bullet charts</b> 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
<b>Heat maps</b> 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
<b>Density maps</b> Results are shown by color representing the number or frequency of data points in a given area on a map	