



## eWReport Practice Group – YJ Referral Report

# Basic Excel Charts: When and How to Use Them

## Getting Started

Charts are very helpful for simplifying complex information, emphasizing key points, and creating a picture of your data. When you are deciding what type of graphic will best illustrate your findings, ask yourself the following:

- What is the **purpose** of this information?
- **Who will use** this information?
- What are the **key messages** for my audience?

You can use the answers to those questions and the chart type summaries below to select the best way to visualize your data.

## General Rules for Data Visualization

Regardless of the type of chart you decide to use, remember these four things:

1. **Every chart should have a title!** Your title should describe what you are illustrating with your chart. Don't make people guess what you are trying to tell them.
2. **Always label your axes.** The way you understand your data may not be the same way someone else does. Labeling your X (horizontal) and Y (vertical) axes is a very helpful clarification strategy.
3. **1 unit per axis.** While it can be tempting to squeeze as much information as possible into one graph, mixing units (ex. years, youth, referrals, etc.) on one axis is very confusing and can ultimately distract from your key messages.
4. **Keep it simple.** If it takes someone more than 5 seconds to figure out what you're trying to share, your chart is too complex!

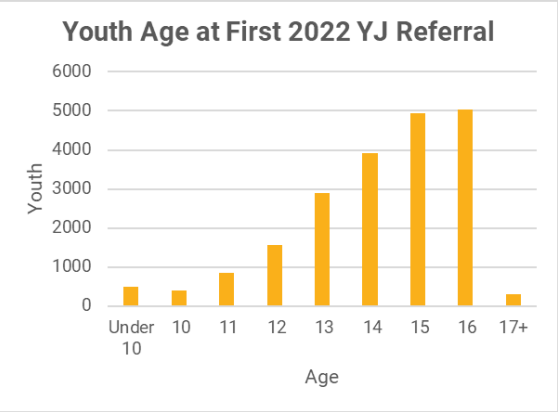
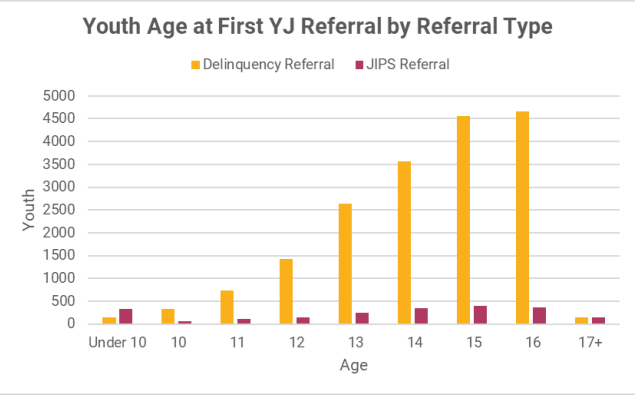
Chart Type	Best For	Limitations	How to Organize in Excel																																	
<p><b>Column Chart</b></p> 	<p>Comparing different groups or tracking large changes over time</p>	<p>Difficult to illustrate small differences with bars.</p>	<table border="1" data-bbox="1520 217 1852 649"> <thead> <tr> <th>Category Names</th> <th>Counts</th> </tr> </thead> <tbody> <tr> <td><b>Age</b></td> <td><b>Youth ID</b></td> </tr> <tr> <td>Under 10</td> <td>486</td> </tr> <tr> <td>10</td> <td>395</td> </tr> <tr> <td>11</td> <td>847</td> </tr> <tr> <td>12</td> <td>1566</td> </tr> <tr> <td>13</td> <td>2884</td> </tr> <tr> <td>14</td> <td>3914</td> </tr> <tr> <td>15</td> <td>4942</td> </tr> <tr> <td>16</td> <td>5047</td> </tr> <tr> <td>17+</td> <td>290</td> </tr> </tbody> </table>	Category Names	Counts	<b>Age</b>	<b>Youth ID</b>	Under 10	486	10	395	11	847	12	1566	13	2884	14	3914	15	4942	16	5047	17+	290											
Category Names	Counts																																			
<b>Age</b>	<b>Youth ID</b>																																			
Under 10	486																																			
10	395																																			
11	847																																			
12	1566																																			
13	2884																																			
14	3914																																			
15	4942																																			
16	5047																																			
17+	290																																			
<p><b>Clustered Column Chart</b></p> 	<p>Comparing different groups or tracking large changes over time with multiple criteria</p>	<p>Difficult to illustrate small differences with bars. Too many categories can be difficult to interpret.</p>	<table border="1" data-bbox="1440 753 1932 1182"> <thead> <tr> <th>Category Names</th> <th colspan="2">Counts</th> </tr> </thead> <tbody> <tr> <td><b>Age</b></td> <td><b>Delinq.</b></td> <td><b>JIPS</b></td> </tr> <tr> <td>Under 10</td> <td>153</td> <td>338</td> </tr> <tr> <td>10</td> <td>332</td> <td>63</td> </tr> <tr> <td>11</td> <td>743</td> <td>104</td> </tr> <tr> <td>12</td> <td>1419</td> <td>140</td> </tr> <tr> <td>13</td> <td>2640</td> <td>248</td> </tr> <tr> <td>14</td> <td>3570</td> <td>350</td> </tr> <tr> <td>15</td> <td>4557</td> <td>398</td> </tr> <tr> <td>16</td> <td>4666</td> <td>362</td> </tr> <tr> <td>17+</td> <td>145</td> <td>143</td> </tr> </tbody> </table>	Category Names	Counts		<b>Age</b>	<b>Delinq.</b>	<b>JIPS</b>	Under 10	153	338	10	332	63	11	743	104	12	1419	140	13	2640	248	14	3570	350	15	4557	398	16	4666	362	17+	145	143
Category Names	Counts																																			
<b>Age</b>	<b>Delinq.</b>	<b>JIPS</b>																																		
Under 10	153	338																																		
10	332	63																																		
11	743	104																																		
12	1419	140																																		
13	2640	248																																		
14	3570	350																																		
15	4557	398																																		
16	4666	362																																		
17+	145	143																																		

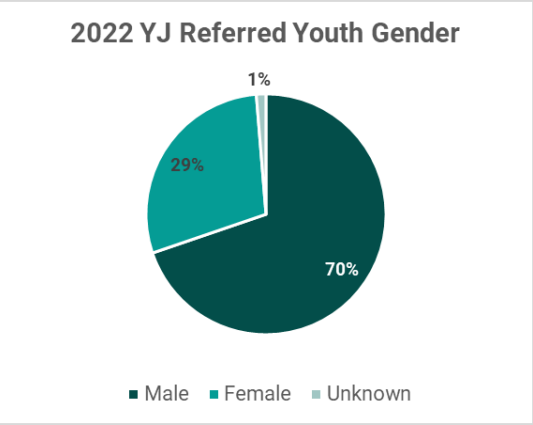
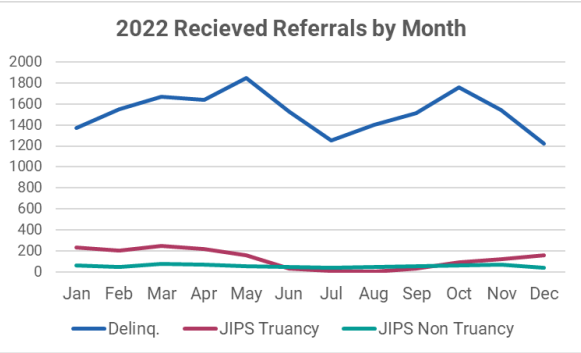
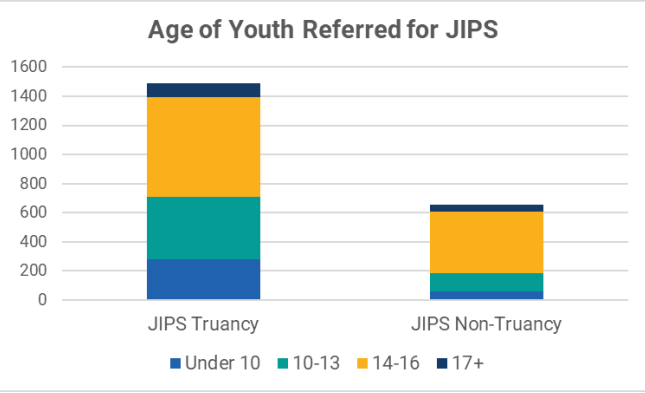
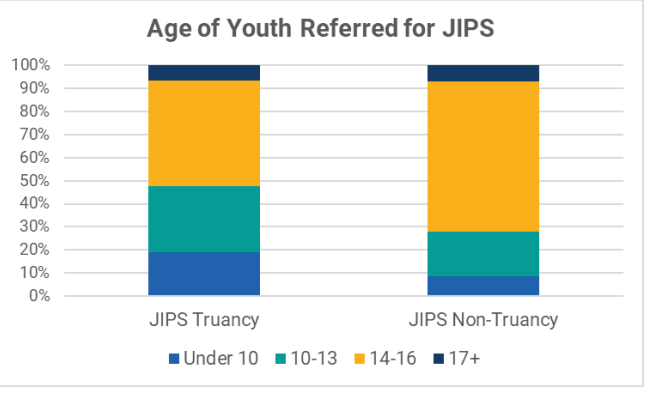
Chart Type	Best For	Limitations	How to Organize in Excel																																																									
<p><b>Pie Chart</b></p>  <p>2022 YJ Referred Youth Gender</p> <p>70% Male, 29% Female, 1% Unknown</p>	<p>Illustrating how parts relate to the whole</p>	<p>Can be difficult to interpret when more than two categories are included in the chart. Not ideal for showing trends over time.</p>	<table border="1" data-bbox="1457 264 1913 444"> <thead> <tr> <th>Category Names</th> <th>Counts</th> </tr> </thead> <tbody> <tr> <td><b>Gender</b></td> <td><b>Youth ID</b></td> </tr> <tr> <td>Male</td> <td>14,281</td> </tr> <tr> <td>Female</td> <td>5,918</td> </tr> <tr> <td>Gender Unknown</td> <td>266</td> </tr> </tbody> </table> <ul style="list-style-type: none"> <li>* To help with interpretation, make sure you add data labels to the pie slices in your chart</li> <li>* You can select to display values as a percentage in the data labels menu</li> </ul>	Category Names	Counts	<b>Gender</b>	<b>Youth ID</b>	Male	14,281	Female	5,918	Gender Unknown	266																																															
Category Names	Counts																																																											
<b>Gender</b>	<b>Youth ID</b>																																																											
Male	14,281																																																											
Female	5,918																																																											
Gender Unknown	266																																																											
<p><b>Line Chart</b></p>  <p>2022 Recieved Referrals by Month</p> <p>Delinq., JIPS Truancy, JIPS Non Truancy</p>	<p>Tracking changes over time – especially small changes that are difficult to see with a bar graph, or comparing changes over the same period of time for more than one group</p>	<p>Too many data lines can be confusing. When magnitudes are different (like example chart left), it can be difficult to observe details (both JIPS referral lines appear almost flat because there are significantly more Delinquency referrals received each month).</p>	<table border="1" data-bbox="1383 724 1995 1305"> <thead> <tr> <th colspan="2" rowspan="2"></th> <th colspan="3">Counts</th> </tr> <tr> <th>Delinq.</th> <th>JIPS Truancy</th> <th>JIPS Non-Truancy</th> </tr> </thead> <tbody> <tr> <th rowspan="12">Time Frame</th> <th>Jan</th> <td>1374</td> <td>236</td> <td>62</td> </tr> <tr> <th>Feb</th> <td>1551</td> <td>200</td> <td>50</td> </tr> <tr> <th>Mar</th> <td>1668</td> <td>246</td> <td>74</td> </tr> <tr> <th>Apr</th> <td>1639</td> <td>220</td> <td>67</td> </tr> <tr> <th>May</th> <td>1851</td> <td>157</td> <td>57</td> </tr> <tr> <th>Jun</th> <td>1530</td> <td>31</td> <td>44</td> </tr> <tr> <th>Jul</th> <td>1250</td> <td>8</td> <td>38</td> </tr> <tr> <th>Aug</th> <td>1404</td> <td>2</td> <td>45</td> </tr> <tr> <th>Sep</th> <td>1514</td> <td>33</td> <td>55</td> </tr> <tr> <th>Oct</th> <td>1760</td> <td>89</td> <td>59</td> </tr> <tr> <th>Nov</th> <td>1540</td> <td>119</td> <td>68</td> </tr> <tr> <th>Dec</th> <td>1225</td> <td>161</td> <td>38</td> </tr> </tbody> </table>			Counts			Delinq.	JIPS Truancy	JIPS Non-Truancy	Time Frame	Jan	1374	236	62	Feb	1551	200	50	Mar	1668	246	74	Apr	1639	220	67	May	1851	157	57	Jun	1530	31	44	Jul	1250	8	38	Aug	1404	2	45	Sep	1514	33	55	Oct	1760	89	59	Nov	1540	119	68	Dec	1225	161	38
		Counts																																																										
		Delinq.	JIPS Truancy	JIPS Non-Truancy																																																								
Time Frame	Jan	1374	236	62																																																								
	Feb	1551	200	50																																																								
	Mar	1668	246	74																																																								
	Apr	1639	220	67																																																								
	May	1851	157	57																																																								
	Jun	1530	31	44																																																								
	Jul	1250	8	38																																																								
	Aug	1404	2	45																																																								
	Sep	1514	33	55																																																								
	Oct	1760	89	59																																																								
	Nov	1540	119	68																																																								
	Dec	1225	161	38																																																								

Chart Type	Best For	Limitations	How to Organize in Excel																			
<h3 data-bbox="107 175 541 215">Stacked Column Chart</h3> 	<p data-bbox="810 375 1041 472">Illustrating how parts relate to the whole</p>	<p data-bbox="1096 342 1327 505">Too many categories can be misleading. Not ideal for showing trends over time.</p>	<table border="1" data-bbox="1381 269 1976 558"> <thead> <tr> <th colspan="2" rowspan="2"></th> <th colspan="2">Categories</th> </tr> <tr> <th>JIPS Truancy</th> <th>JIPS Non-Truancy</th> </tr> </thead> <tbody> <tr> <th rowspan="4">Category Counts</th> <th>Under 10</th> <td>281</td> <td>57</td> </tr> <tr> <th>10-13</th> <td>429</td> <td>126</td> </tr> <tr> <th>14-16</th> <td>683</td> <td>427</td> </tr> <tr> <th>17+</th> <td>97</td> <td>46</td> </tr> </tbody> </table>			Categories		JIPS Truancy	JIPS Non-Truancy	Category Counts	Under 10	281	57	10-13	429	126	14-16	683	427	17+	97	46
		Categories																				
		JIPS Truancy	JIPS Non-Truancy																			
Category Counts	Under 10	281	57																			
	10-13	429	126																			
	14-16	683	427																			
	17+	97	46																			
<h3 data-bbox="107 686 695 727">Stacked Column – 100% Chart</h3> 	<p data-bbox="810 878 1041 1008">Illustrating how parts relate to the whole (when the whole is 100%)</p>	<p data-bbox="1096 862 1327 1024">Too many categories can be misleading. Not ideal for showing trends over time.</p>	<table border="1" data-bbox="1381 784 1976 1073"> <thead> <tr> <th colspan="2" rowspan="2"></th> <th colspan="2">Categories</th> </tr> <tr> <th>JIPS Truancy</th> <th>JIPS Non-Truancy</th> </tr> </thead> <tbody> <tr> <th rowspan="4">Category Counts</th> <th>Under 10</th> <td>281</td> <td>57</td> </tr> <tr> <th>10-13</th> <td>429</td> <td>126</td> </tr> <tr> <th>14-16</th> <td>683</td> <td>427</td> </tr> <tr> <th>17+</th> <td>97</td> <td>46</td> </tr> </tbody> </table> <p data-bbox="1430 1109 1955 1206">* Selecting the 100% Chart option will automatically transform your counts into percentages</p>			Categories		JIPS Truancy	JIPS Non-Truancy	Category Counts	Under 10	281	57	10-13	429	126	14-16	683	427	17+	97	46
		Categories																				
		JIPS Truancy	JIPS Non-Truancy																			
Category Counts	Under 10	281	57																			
	10-13	429	126																			
	14-16	683	427																			
	17+	97	46																			

## Finding More Chart Help

There are resources online with additional info about data visualization in Excel. If you have questions that were not answered with the information above, the links below include more detail about summary information included above:

- [University of Minnesota Libraries, \*Data Visualization: General Best Practices\*](#)
- [University of Wisconsin Design Lab, \*Infographics and Data Visualization\*](#)
- [Ed Minter & Mary Michaud, \*Using Graphics to Report Evaluation Results\*](#)
- [Centers for Disease Control and Prevention, \*Evaluation Brief #12 – Using Graphs and Charts to Illustrate Quantitative Data\*](#)

If you'd like help creating a more advanced visualization (like a map), please reach out to [DCFCWRA@wisconsin.gov](mailto:DCFCWRA@wisconsin.gov) or [DCFYJ@wisconsin.gov](mailto:DCFYJ@wisconsin.gov)

The Department of Children and Families is an equal opportunity employer and service provider. If you have a disability and need to access services, receive information in an alternate format, or need information translated to another language, please call the Division of Safety and Permanence at (608) 266-8787. Individuals who are deaf, hard of hearing, deaf-blind or speech disabled can use the free Wisconsin Relay Service (WRS) – 711 to contact the department.