Charts, Graphs, and Tables in Excel

Data Coordinator’s Conference 2017
Clarity of Purpose

• Clarity of Purpose: a chart or table that you are showing to someone else should exist to do something or show something specific.

• Tip: I like to write a sentence like “Exhibit X shows....” or “As seen in Exhibit X-1,.....” in the report, memo, or email. This not only reminds you of why you created the exhibit, but some people skip charts (and even more so tables) unless they are lead into them by the text.
Clarity of Purpose cont.

• Clarity of Purpose is for the presentation version of the chart or table. When you are starting to look at data, sometimes you just need to know what is there.
  – Charts and tables are good ways to organize data for you to review.

• Once you have seen what is in the data, refine the chart or table for presentation.
Clarity of Design

• Your audience shouldn’t have to look very hard to see what you want them to see.

• Tip: **Bold is good for tables.** If there is a column, row, or even a single cell that you want them to notice, bold it. A little bigger font doesn’t hurt either.

• Tip: **Red** is really good for charts. The closer to stop sign red the better. Not all the columns or lines or pie slices have to be different colors. Unless you are making a pie chart, I recommend making all the other information then your main point (contrast information) the same color; it reduces the chances that your audience will try to find meaning in the color scheme and helps the main point stick out more.
Clarity of Design continued

• Tip: for both charts and tables, don’t be afraid to combine things that aren’t relevant to your purpose. “Other” is a great category as long as it isn’t bigger than the one(s) you care about.

• Tip: Inserting arrows, text boxes, or symbols can draw attention to what you want the audience to see.

Bet you noticed the arrow

Look for Insert on the top of Excel worksheets
Basic Editing in Excel

• Excel will offer you some specific editing features for charts, but you can generally use the features on the home tab to edit:
• Format Cells (under Format) gives you a lot of options in one place.
Does Anyone Want to Practice Formatting?
Summarizing

- You will probably start out with rows or columns of data.
- Tip: To make either a table or chart from something like this, start with a pivot table.
# How to Find a Pivot Table

1. **Recommended Pivot Table**
   - I bet that could be useful.

### Recommended Pivot Table—Juveniles under 18 with Gang Involvement

<table>
<thead>
<tr>
<th>Juvenile Full Name</th>
<th>Juvenile Age</th>
<th>Juvenile Gender</th>
<th>Juvenile Gang Involvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Midland, Runaway from TJJD</td>
<td>16 Male</td>
<td>Hard Core/Professional Gang Member</td>
<td></td>
</tr>
<tr>
<td>Midland, Bench Warrant</td>
<td>17 Male</td>
<td>Hard Core/Professional Gang Member</td>
<td></td>
</tr>
<tr>
<td>Wilbarger, Nicole</td>
<td>16 Female</td>
<td>Hard Core/Professional Gang Member</td>
<td></td>
</tr>
<tr>
<td>Bush, Harry</td>
<td>15 Male</td>
<td>Hard Core/Professional Gang Member</td>
<td></td>
</tr>
<tr>
<td>Allen, Frank</td>
<td>15 Male</td>
<td>Hard Core/Professional Gang Member</td>
<td></td>
</tr>
<tr>
<td>Kid, Fake</td>
<td>12 Male</td>
<td>Hard Core/Professional Gang Member</td>
<td></td>
</tr>
<tr>
<td>Stark, Tony</td>
<td>16 Male</td>
<td>Hard Core/Professional Gang Member</td>
<td></td>
</tr>
<tr>
<td>Tester, Lacey</td>
<td>16 Female</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>TEST, JAMES</td>
<td>18 Male</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Henson, Ashley</td>
<td>16 Female</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Lopez, Lauren</td>
<td>16 Female</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Tester, Promise</td>
<td>18 Female</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Galindo, George</td>
<td>17 Male</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Doe, John</td>
<td>15 Male</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Kantor, Kelsey</td>
<td>16 Female</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Moore, Joshua</td>
<td>12 Male</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>White, Alexix</td>
<td>12 Female</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Martin, Joseph</td>
<td>11 Male</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>White, Andrew</td>
<td>12 Male</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>James, Jessica</td>
<td>12 Female</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Thomas, Sarah</td>
<td>12 Female</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Harris, Samantha</td>
<td>12 Female</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Mouse, Mickey</td>
<td>11 Male</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Johnson, Emily</td>
<td>12 Female</td>
<td>No</td>
<td></td>
</tr>
</tbody>
</table>
Selecting Data

- At the top of the worksheet (the green bar), there is a tab for Insert (1).
- If you click on Pivot Table (2), this pop up will appear.
- You might have to change the table/range—left click in the spreadsheet and drag the mouse to encase the data you are interested in.
Build a Pivot Table part I

• Clicking okay will make half of your screen look like this.

• Click on something you want to make a chart about (here we will do juvenile gender).

• Click on anything (including juvenile age) and drag it into the box under Σ VALUES.
# Build a Pivot Table part II

![Image of Excel Pivot Table]

1. Drag **Juvenile Gender** to the **Columns** section.
2. Drag **Count of Juvenile Gender** to the **Values** section.
3. Ensure the count is correctly calculated in the Pivot Table.
Editing the Pivot Table

• Clicking on the pivot table will allow you to access a new tab, Design, that gives you some formatting options.

• Tip: It is often easier to edit a pivot table if you copy and paste (values) the table.

• If you want to change the order of your table in any other way than alphabetical (or reverse alphabetical) or greatest to smallest (or smallest to greatest), it is best to do it early in the process.
The Table Function

- Next to Recommended Pivot Tables, there is an icon for Table.
- It will impose this format on a block of data.
- Tip: the more columns in your table, the better it is to have this “zebra style” format, particularly if you think your audience will print out the table.
- Tip: The table button doesn’t work on pivot tables, but it does work on tables copied and pasted from pivot tables.
- You can add/change formatting to this table, or you can skip the table icon and just format it yourself using format cells. You can also go to the design tab and pick a different format.
Does Anyone Want to Practice Building a Table?
Build a Chart from Pivot Table

- Clicking on Pivot Chart causes this screen to pop up.
- Clicking anything under All Charts will show you what the chart would look like with your data.
• Clicking on the graph opens up 2 new tabs on the top: Design and Format.

• Format is shown, and with it you can change the colors of the bar or the table, and add shapes or lines to your chart.
Design

- Design is more about changing the entire chart.
- You can add labels, data table, and trend lines by clicking on Add Chart Element.
- You can even add a table at the bottom of the chart using Chart Element Data Table.
Click on the Chart

- Clicking on an element in the chart also gives you some direct editing options.
- For example, we could click on “total” and type in a new title for the chart.
Build a Chart from a Non Pivot Table

• Much like pivot tables, charts built from pivot tables are relatively hard to edit.
• You can make a chart from any block of data.
• Tip: If you copied and pasted (values) the pivot table to make your own table, that makes a really good source for a chart.
• Tip: You can make charts from non-summarized data (not from a table), but they are often hard to interpret.
Where to Find Charts

Recommended Charts—I bet that could be useful
Types of Charts

• There are many types of charts, but the three main ones are:
  – Bar or column charts (bars are horizontal and columns are vertical) are good at showing how 1 or 2 things change over time or geography.
  – Line charts are good for showing how more than 2 things change over time or geography (I recommend limiting it to 3-6 things).
  – Pie charts show the internal breakdown of things (I recommend limiting it to 2-6 things).
Line and Pie Chart Examples
Last Thoughts

• It is best to practice playing around with tables and charts before you need to build one.
• If you find things you like, write them down (and, as necessary, use the snipping tool or PrtScn to save pictures).
• Remember clarity of design and don’t make things too complicated, and remember clarity of purpose, if the audience loves the style of your chart but can’t remember what the chart was about, that isn’t a win.
Additional Resources

• Ten Chart Design Principles: Guest Post at https://peltiertech.com/ten-chart-design-principles-guest-post/
• Evergreen Data at http://stephanieevergreen.com/category/blog/
• Excel Table Design Principles at http://www.dummies.com/software/microsoft-office/excel/excel-table-design-principles/
• Places with Reports to Get Ideas from:
  – Bureau of Justice Statistics at https://www.bjs.gov/
Does Anyone Want to Practice Building a Chart?