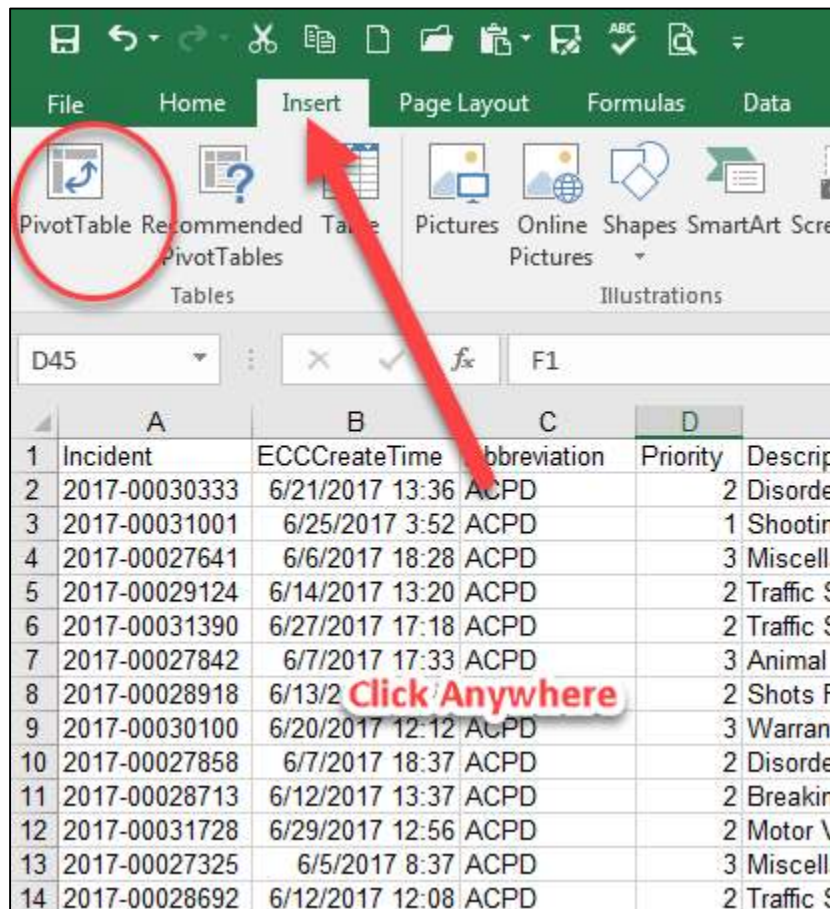


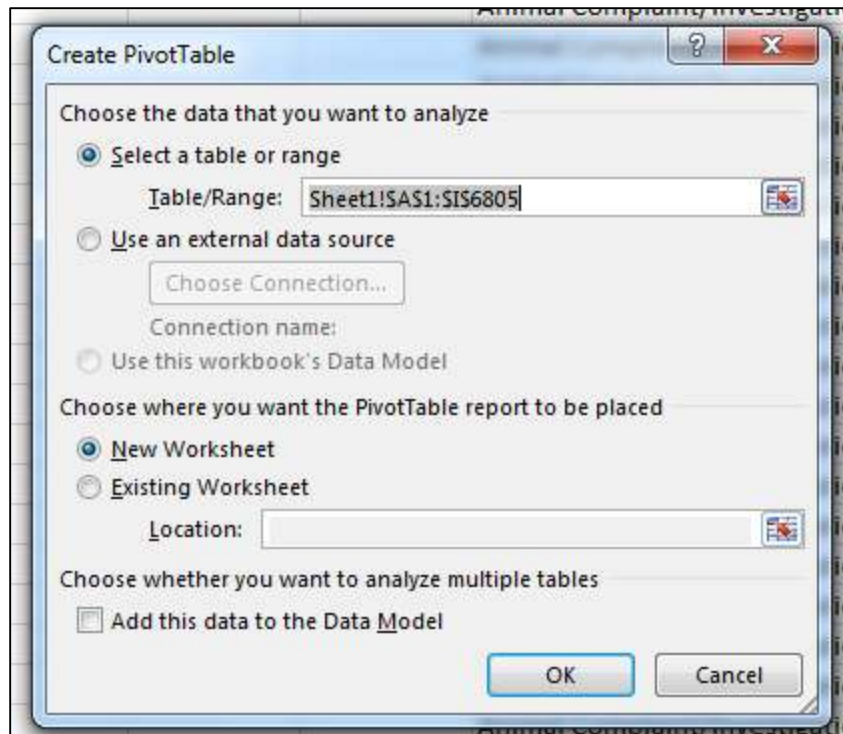
Pivot Tables Cheat Sheet

Purpose: Distilling large amounts of data into manageable categories that can be sorted, filtered, and grouped in an effort to make sense of the information

Creating the Pivot Table

- 1) Click anywhere in the data that you want to Pivot
- 2) Click the Insert tab, and select "Pivot Table".
- 3) A pop-up will open with the following information:
 - a. Table Range. This is usually set, so don't make any changes (discussion below on how to change it later if you want).
 - b. New Worksheet vs. Existing Worksheet. New Worksheet puts the table into a new spreadsheet just before the original data. Existing Worksheet puts the table on top of your data sheet or in a location of your choice. It is recommended to push the table to a New Worksheet for ease of use.
 - c. Add this Data to Data Model – use if you want to analyze multiple tables.
- 4) Click OK.





Working with the Pivot Table

In the lower left corner, you will see the basic elements of the Pivot Table:

- 1) Filters: Filter the entire table
- 2) Columns: put fields that will run horizontally across the top
 - Typically easiest if put category with fewer distinct values here
- 3) Rows: put fields that will run vertically on the left side of the table
 - Typically easiest if put category with More distinct values here
- 4) Values: Choose what you want Excel to perform math on (sum, average, count)

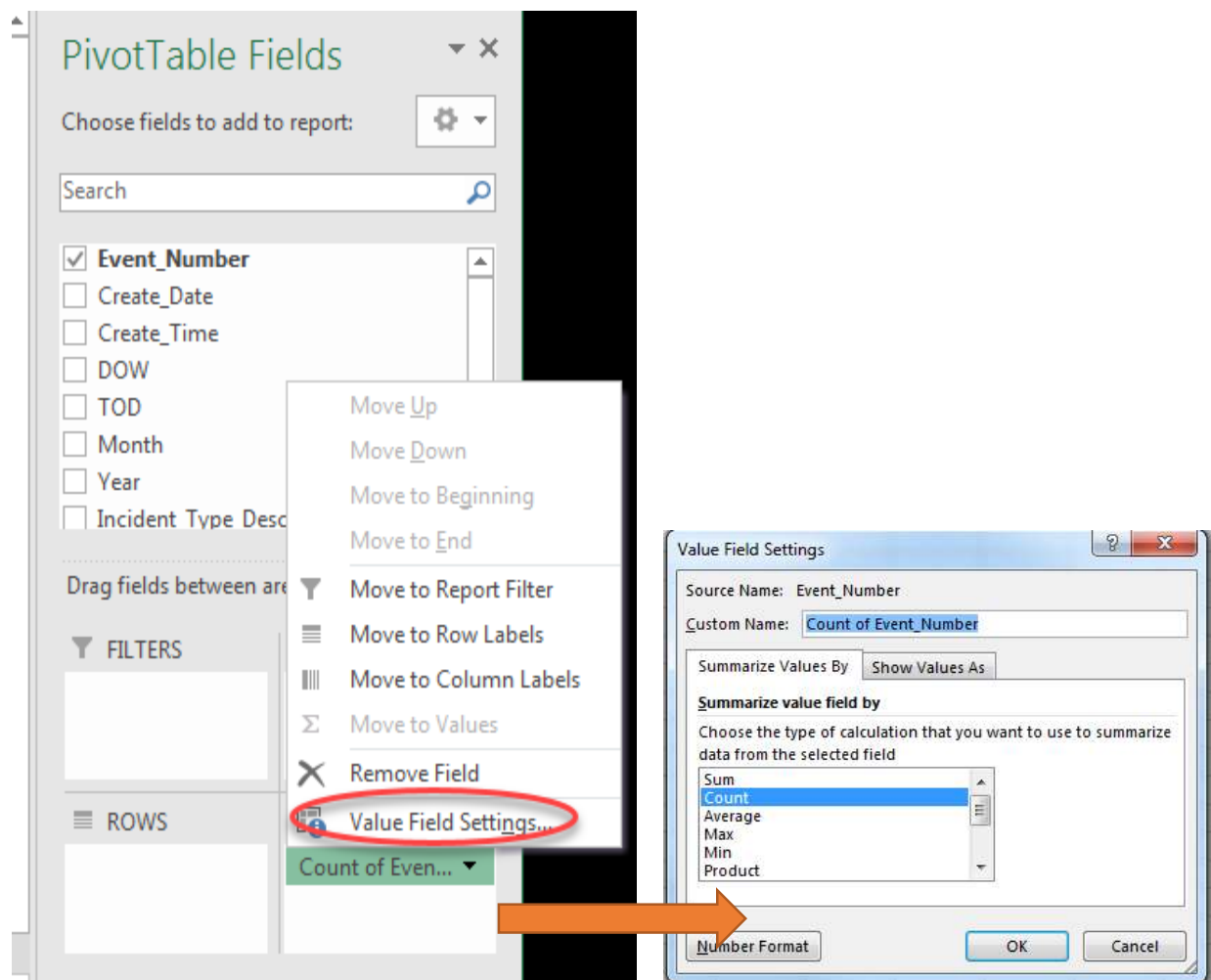


To add a field to each quadrant, left click, hold, and drag it into the location. Continue to move items into the quadrants until your pivot table looks like you would like. Consider your pivot table as a mini-Excel spreadsheet. You can change it repeatedly without any change in your main data.

The **columns** and **rows** function as a normal Excel spreadsheet.

The **values** quadrant is the place where Excel is being told to do something. When you drag your field into that space, it will typically say Count of *field name* or Sum of *field name*. This is telling you what the quadrant is doing – counting is usually the default for nominal data and summing is usually the default for numeric data.

- To change the function that is being performed in Excel, left click on your field, and select Value Field Settings (see photo). This will generate a window that allows you to choose the setting of this field. You can also change the way the values appear by selected 'Show Values As'. This is documented further below.



The **filters** quadrant operates as a normal Excel spreadsheet filter. Select the field you want to use as your filter, and drag it into the Filter quadrant. The filtered field will appear just above your pivot table, and there will be a dropdown arrow. Click the arrow and check any items that you want included.

To change the filter, click the dropdown arrow again, and check or uncheck any items that you want included/excluded. To remove the filter entirely, left click on the field in the filter quadrant. Select "Remove filter", and that will remove the selected filter.

Data can also be filtered directly in rows and columns. After you have dragged your fields to the row and column quadrants, the field titles will appear above your data in your pivot table. Each title will have a dropdown arrow beside it. Click the arrow and check/uncheck any data you want included/excluded.

Miscellaneous Pivot Table Hints

If your pivot table has blank spaces, right click anywhere in the Pivot table, and select Pivot Table Options. On the Layout and Format tab, find the box checked "For empty cells show:". Add a 0 to the box next to this phrase and click "OK".

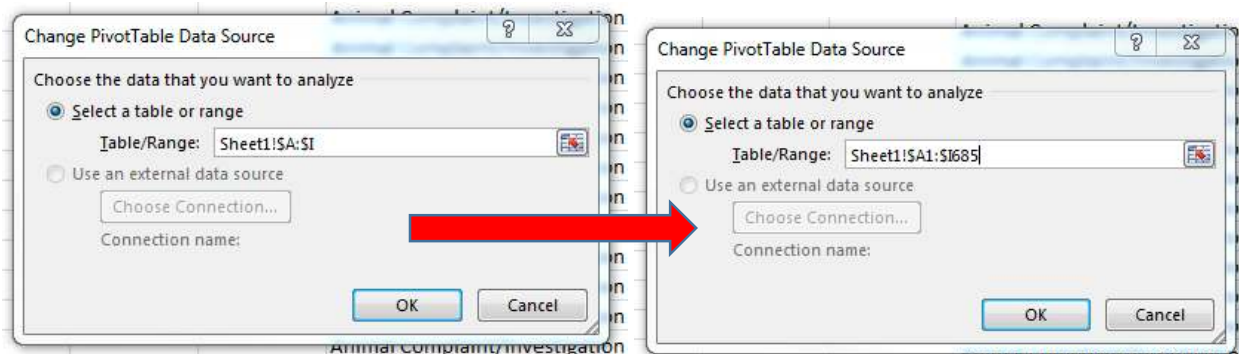
The screenshot shows an Excel spreadsheet with a pivot table. The pivot table has columns for 2016, 2017, and Grand Total. A right-click context menu is open over the cell containing 223, with 'PivotTable Options...' highlighted. The dialog box is open to the 'Layout & Format' tab, showing options for layout and format, with 'For empty cells show:' set to '0'.

	2016	2017	Grand Total
195	197		
177	205		
206	214		
250	207	223	680
235	233		
239	246		
256	229		
218	232		
205	191		
211	231		
201	200		
180	209		
2573	2594	16	

Changing the Data Being Pivoted

Data in the pivot table can be added or removed without much difficulty. There are two options to add data to your pivot tables:

- 1) Adding Data Within the Original Data being Pivoted
 - a. In your original data spreadsheet, insert a column within you original data set (ex: if your pivot table includes data in columns A-G, insert a column in any spot before column G).
 - b. Add your data as needed. Make sure you have a column header
 - c. Return to your pivot table, right click and select “Refresh”
 - d. Your new column header will appear in the PivotTable fields list.
 - e. This option also applies to adding new rows of data. The rows MUST be within your original pivoted data.
- 2) Adding Data Outside the Original Data being Pivoted
 - a. Left click anywhere in your pivot table. At the top of the page, an Analyze tab should appear.
 - b. Click the Analyze tab and select “Change Data Source”.
 - c. This will generate a text box in your original data sheet that lists the range for your pivot table (may look like Sheet1!\$A:\$I). Note the I is the capital letter “I” not the number “1”.
 - d. On your table range, add the number 1 beside \$A, and the row number of your last cell of data beside the \$I. Your Table/Range should now look like this: Sheet1!\$A1:\$I685.
 - e. Click OK, and refresh your pivot table (see above for refresh instructions).



Showing Percentage of the Total or Percent Change in Your Pivot Table

- 1) Right click anywhere in your pivot table
- 2) Click “Show Values As”
- 3) % of Grand Total will give you the percentage of the grand total for each cell.
- 4) % of Column Total will give you the percentage of each cell as compared to the column total.
The same hold true of % of Row Total
- 5) Percent change can be found as % Difference From. When you click this, a box will appear asking you for your Base Field and your Base Item.
 - a. Base Field determines if you are comparing the data in your rows or the data in your columns.
 - b. Base Item is the data to which you are comparing all of your other data. If you want to compare the current year to the previous year, you would select “previous”. If you want to compare all years to 2014, you would select “2014” as your Base Item.
- 6) There are multiple other options, but these are a few examples of changing the appearance of your data.

Conditional Formatting

- Conditional Formatting is found under the “Home” tab and operates in the same manner as it does on an Excel spreadsheet.
- To turn on a filter, select the data to which you wish to apply the formatting. Then click the Conditional Formatting button.
- The most frequently used format is “Color Scales”. To preview how your data will appear, hover over each option in color scales before selecting one.
- You can create custom formats by selecting the data to which you wish to apply the formatting, and then selecting “New Rule”. There are multiple options under this tab.
- To edit rules, select the data you wish to edit, and click the Conditional Formatting button. Select the “Manage Rules” option. Select the rule you wish to edit and click “Edit Rule”.
- To remove conditional formatting, select the data from which you want to remove the formatting. Click the Conditional Formatting button and select “Clear Rules”. Options will appear for you to remove the rules from the selected cells or remove the rules from the entire spreadsheet. Choose the option that is most helpful for you.
- To apply Conditional Formatting to multiple columns or rows, select a column/row and apply the conditional formatting. Then go to the Home tab and select Format Painter or the paintbrush icon. Single left click this and click the column/row to which you want to apply the formatting. This will apply the formatting to the column/row. To apply to more than one column/row, double click the Format Painter or paintbrush icon. Then click on any column/row to which you want to apply the formatting. This will allow you to apply the same formatting repeatedly. To “turn off” the formatting, hit the Escape key on your keyboard or single click the Format Painter/paintbrush icon again.
- Note that you want to exclude the Grand Total column and row from your conditional formatting (unless you only have a grand total column/row). If you apply it to these rows in addition to your data, your grand totals will always show up as your “hot spots”.

Count of Event_Number	Column Labels			
Row Labels	2015	2016	2017	Grand Total
Jan	195	197	203	595
Feb	177	205	200	582
Mar	206	214	210	630
Apr	250	207	223	680
May	235	233	278	746
Jun	239	240	221	706
Jul	256	229	203	688
Aug	218	232	99	549
Sep	205	191		396
Oct	211	231		442
Nov	201	200		401
Dec	180	209		389
Grand Total	2573	2594	1637	6804

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Moving Columns or Rows (note – what applies to columns applies to rows in this section)

- 1) Left click on the cell that contains your column header that you want to move (likely found in row 4). Example: if your headers are years, click on the year you want to move – 2015.
- 2) Hover over the left or right side of the cell until you see the black four pointed arrow (resembles a map compass).
- 3) Left click, hold, and drag the column header to the location you want. If you have done this correct, you will see a green line that indicates the location that the column will be moved.
- 4) When you find the location within the pivot table that you want to move the column, release the mouse button. You can do this repeatedly until your columns/rows are as you would like them.
- 5) Similar to an Excel spreadsheet, you can also sort your data to have it order itself in the way you want. Left click on the column/row that you want to sort. Then right click and select Sort. This will provide you with options to sort your data.

Pivot Table Charts and Graphs

- 1) Click anywhere in your Pivot Table and click the Insert tab.
- 2) Choose a chart and proceed as you would in a normal Excel spreadsheet.
- 3) To remove the gray boxes that show your pivot table labels, right click on one of the boxes. Select Hide Legend/Axis/Value Field Button from the Chart to remove the specific button you are selecting. Select Hide All Field Buttons on the Chart to remove all buttons from the chart.
- 4) To add items, click on the chart and choose the Design tab. Proceed as you would in a normal Excel spreadsheet.

Adding Missing Column Headers for Dates

- 1) Create your Pivot Table
- 2) Drag your data into the Row quadrant
- 3) Click on your data in your pivot table and select “Group”
- 4) When the Group options come up, select “month” or “date” or whatever you are trying to document.
- 5) Right click on your pivot table and select ‘Field Settings’
- 6) In the Layout & Print tab, select “Show items with no data”
- 7) Click OK
- 8) You may have something that looks like “>01/01/2007”. Click your filter, and uncheck that option.
- 9) You will also need to go to your pivot table, right click, and select Pivot Table Options, then click the Layout and Format tab and add a 0 in the box next to For Empty Cells Show.
- 10) If you are just missing a month or a year, skip steps 3 and 4.

For illustrations see link: <http://www.excel-university.com/show-pivottable-months-without-data/>