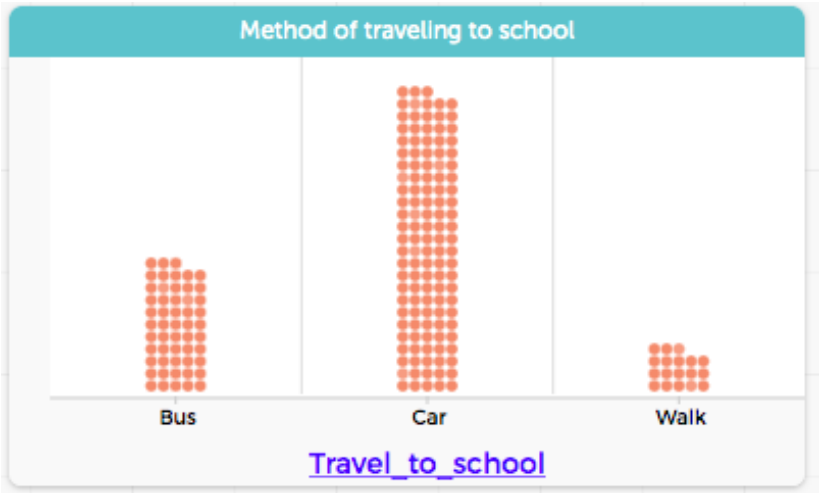
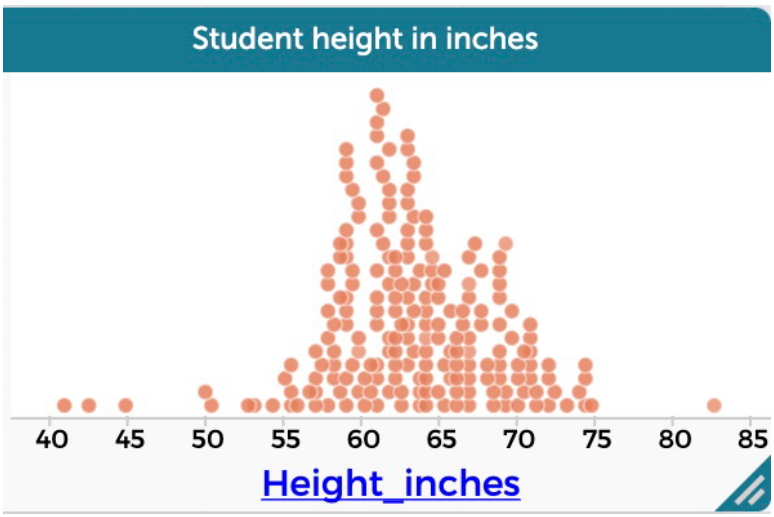
1 Graph one attribute

The Basics

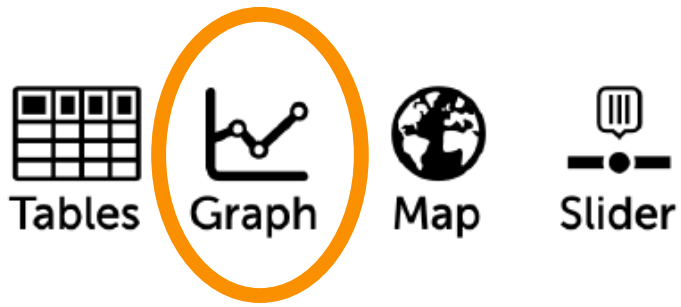
Display the data from one “attribute” in order to see all the values for that attribute.





HINT

Click on the graph icon on the top left corner of the screen.

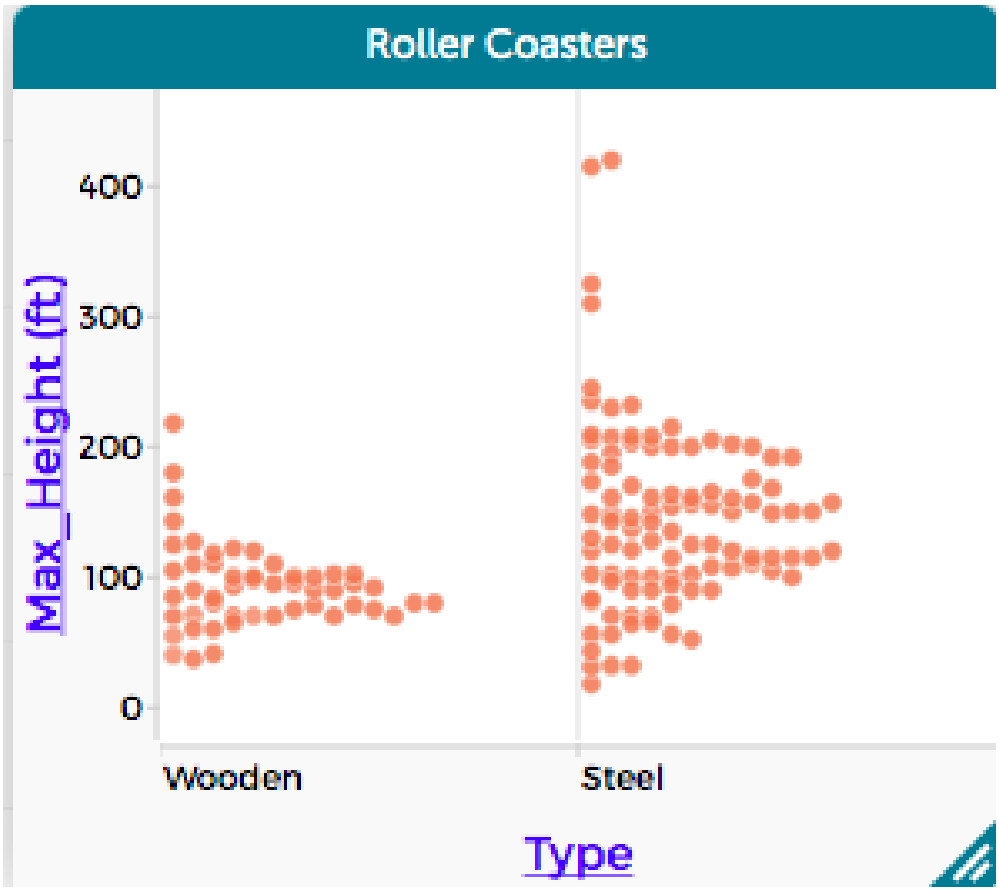


Drag a column heading (called an “attribute”) to the x axis at the bottom of the graph to see how the values are distributed.

2 Graph two attributes

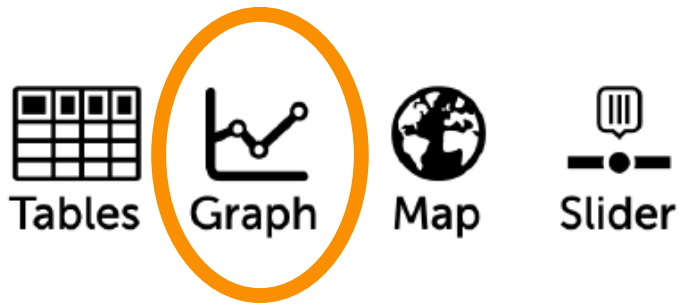
The Basics

Organize the data in a graph with one attribute on the x axis and a different attribute on the y axis to see what you can find out.



HINT

Click on the graph icon on the top left corner of the screen.

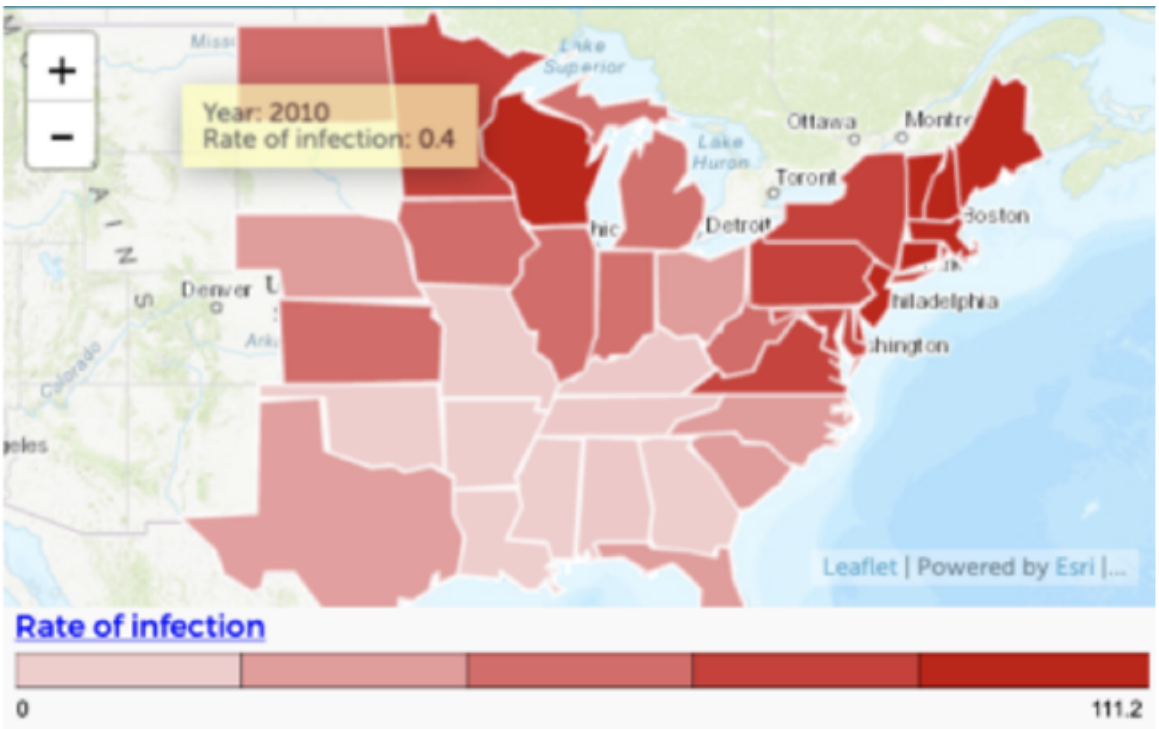


Drag column headings (called “attributes”) to the axes at the bottom (x axis) and left sides of the graph (y axis) to organize the data.

3 Map an attribute

The Basics

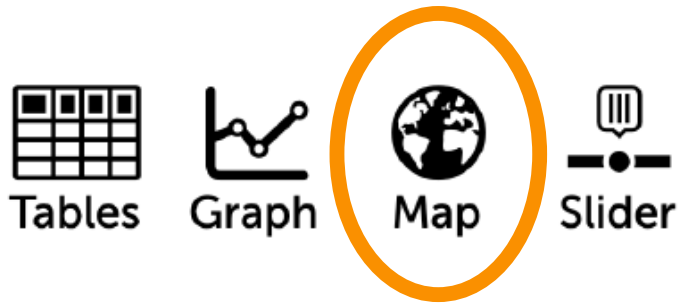
Explore the geographical distribution of the data.



Geographical datasets only

HINT

Click on the map icon at the top left corner of the screen.

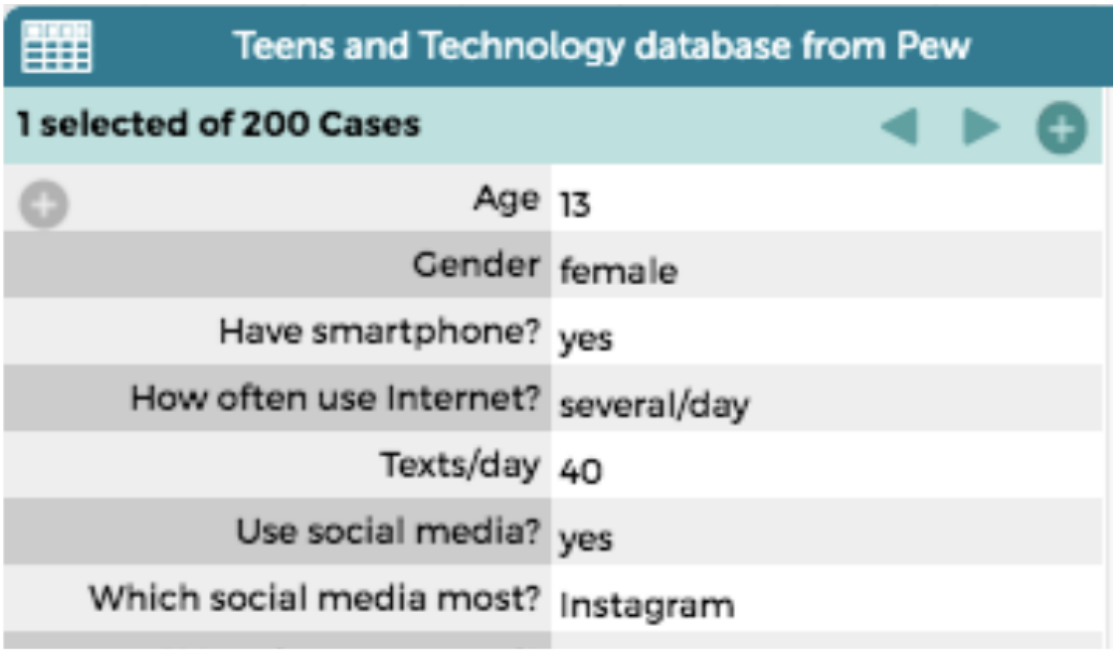


Drag an attribute from your table onto the map.

4 Look at a single case card

The Basics

Display the data from one case in order to see all the attributes for that case.



HINT

Go to the top left corner of the table and click on the card icon

Use the arrows to scroll through different cards.

Click on the top left corner again to go back to the table view.

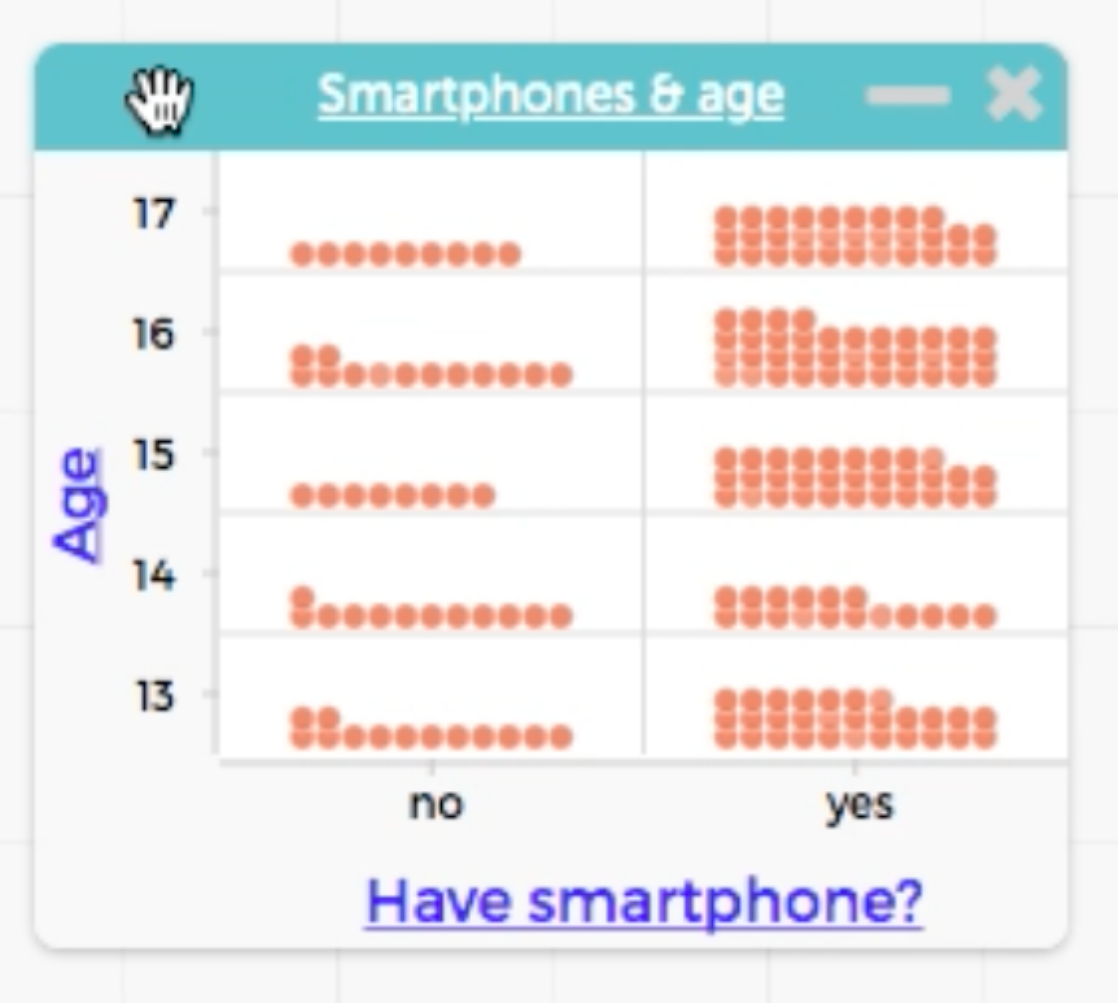
5 Move it

The Basics

Move a graph or a table up, down, or off to the side to give yourself space on the screen to work.

HINT

Click on the blue-green bar at the top of a graph or table and then drag. Don’t click anywhere where there is writing or symbols–just click on the colored part.



6 Remove an attribute from an axis

The Basics

Remove an attribute from either the x or y axis of a graph.

HINT

Make a graph first. Click on the name of the attribute on one axis. Scroll down to the bottom of the list, and select “Remove Y” or “Remove X.”

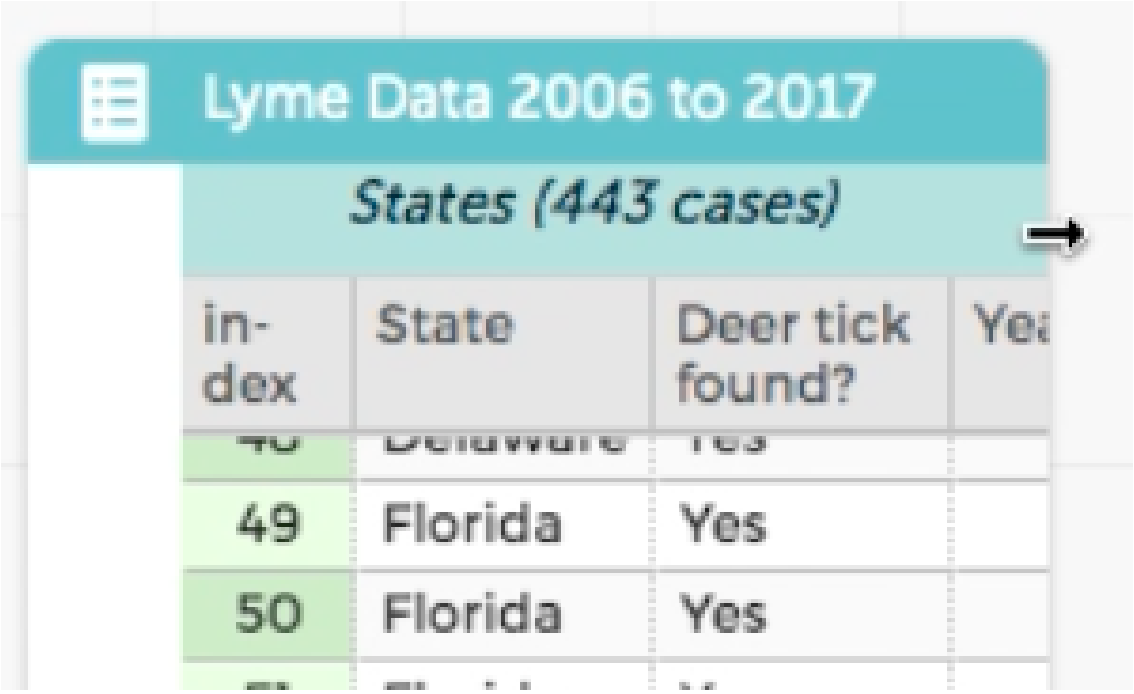
7 Change the size

The Basics

Make your graph or table really big on the screen so you can see lots of detail. Or, make it really small to make space for other things.

HINT

Hover the cursor on the edge or bottom right corner of the graph or table. When you see the arrow, click and drag to resize.



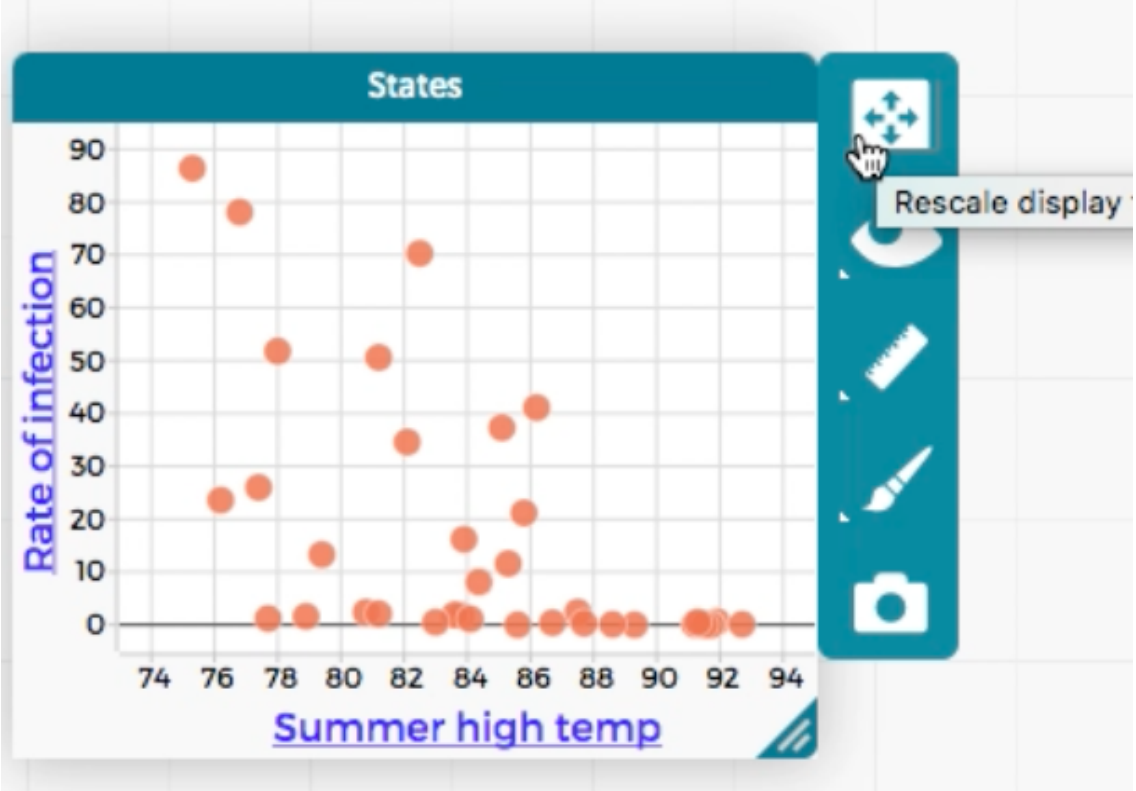
8 Rescale

The Basics

Restore the graph to what it used to look like. Use this move to show all the data after you have scrolled through the axes or changed the scale.

HINT

Click on the graph and find the Rescale button with four arrows right above the eye.



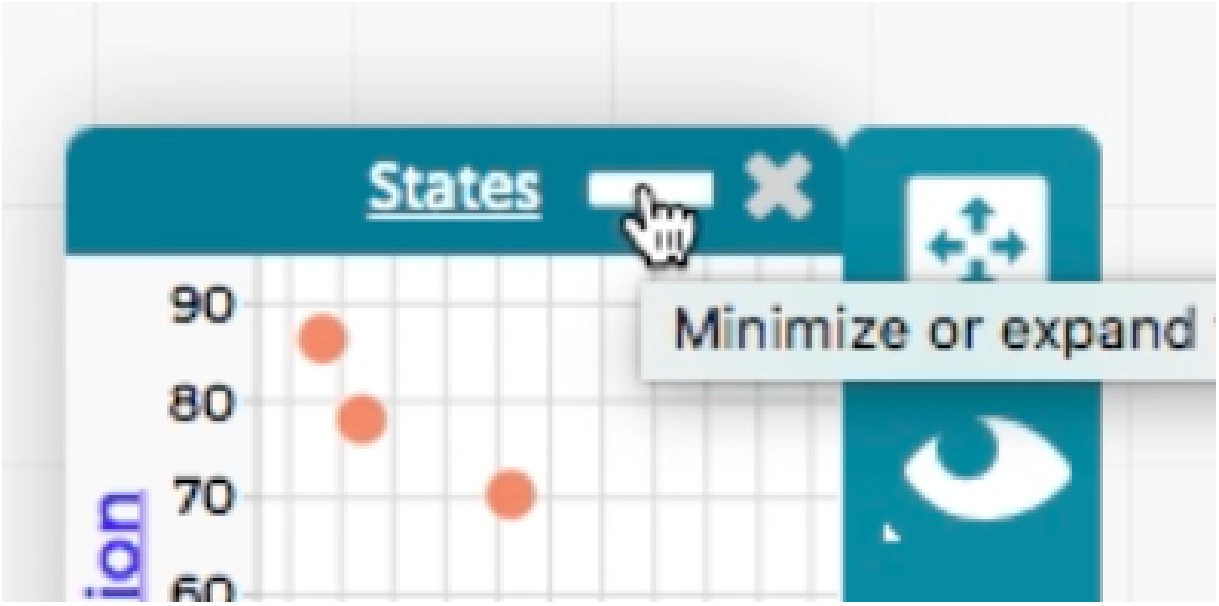
9 Minimize

The Basics

Minimize your graph or table in order to get it out of the way while allowing you to go back to it later.

HINT

Find the minus sign “–” at the top right corner of the graph. Don’t click the “x” or you’ll lose what you were working on!



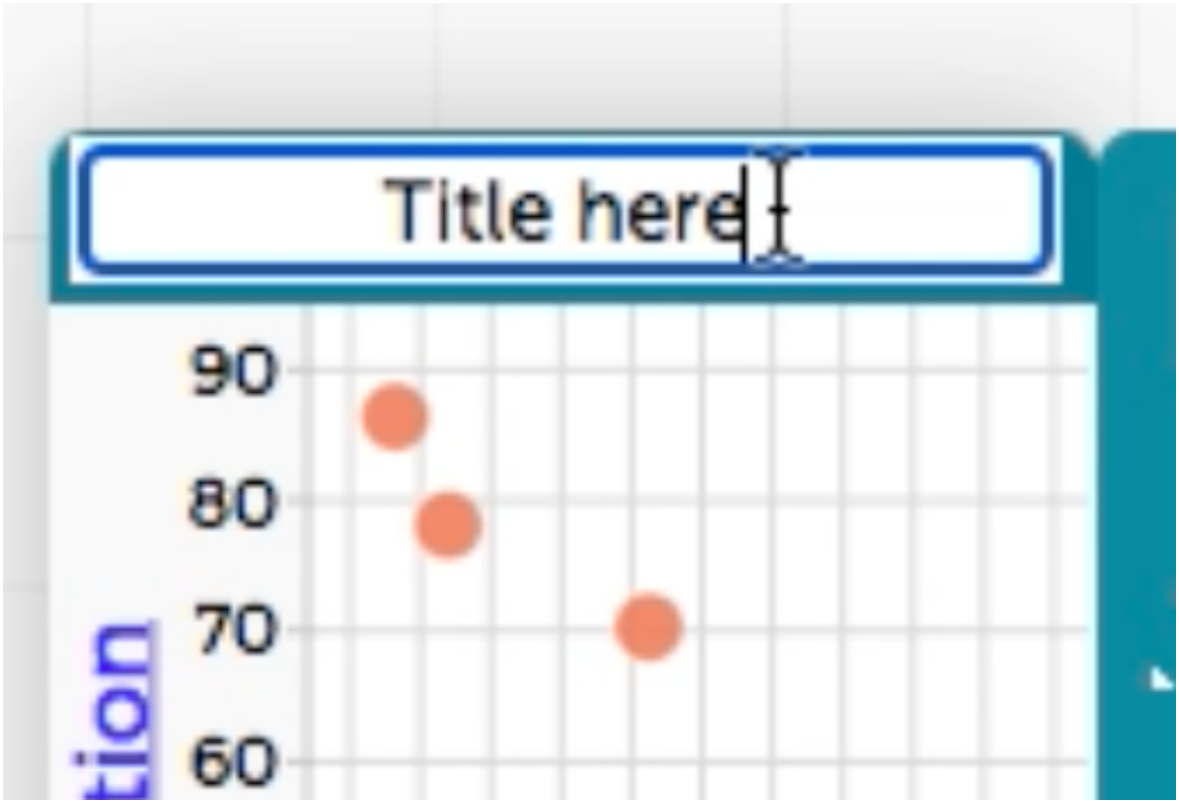
10 Add a title

The Basics

Add a title to a graph that you have made.

HINT

Click on the white writing in the blue-green bar at the top of your graph.



Write a title that helps explain what the graph is showing.

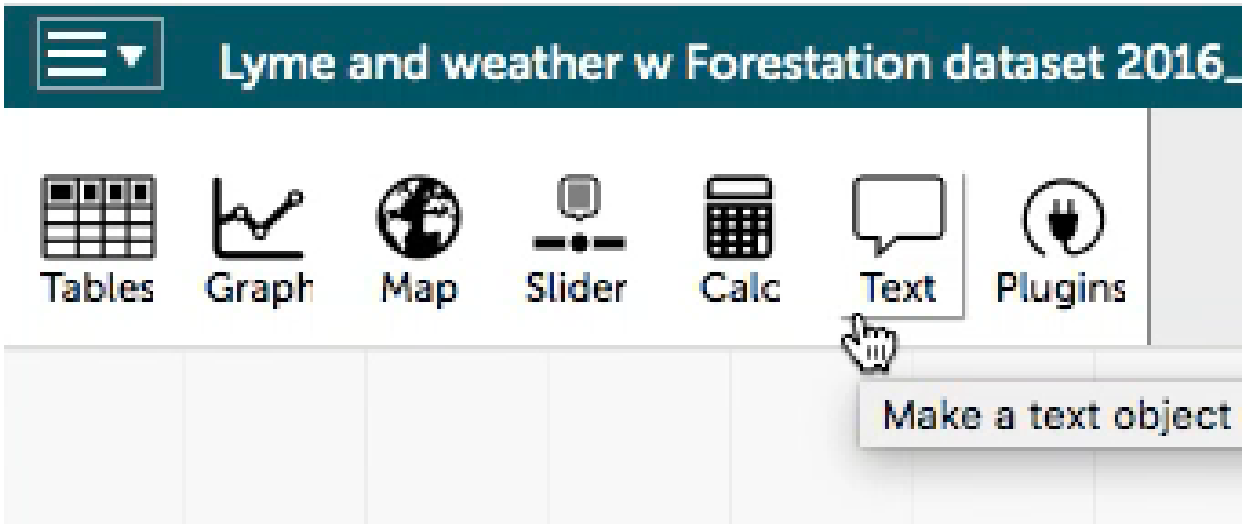
11 Add text

The Basics

Add a text box explaining what a graph or table is showing.

HINT

Click on the text box, drag it where you want it, and type inside the box.



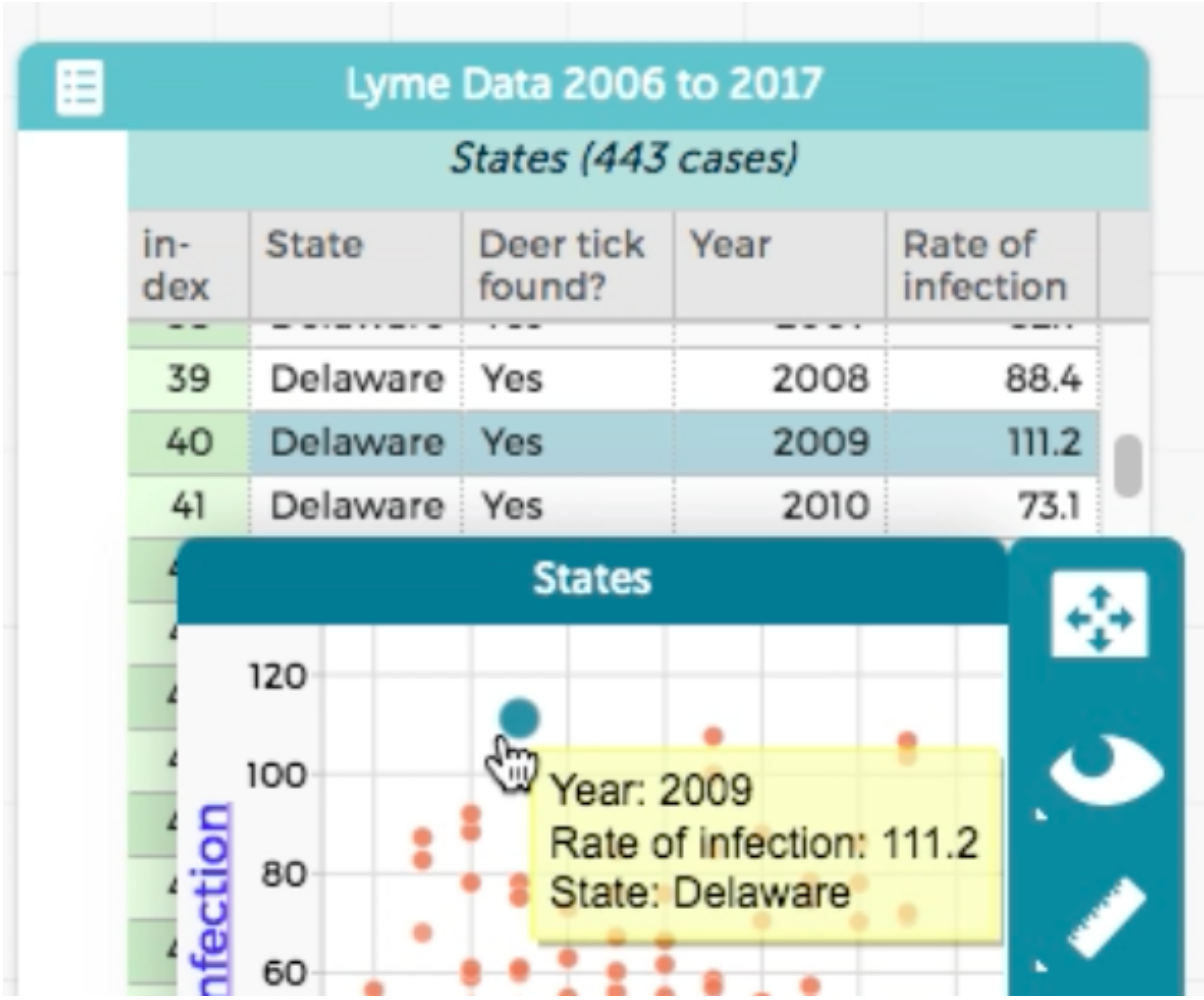
12 Find the same case in two or more visualizations

The Basics

Click on any data point in a graph, table, or map, then find that same case in a different map, table, or graph.

HINT

When you select a case (or data point) that same case will turn blue in any map, table, or graph that you have open.



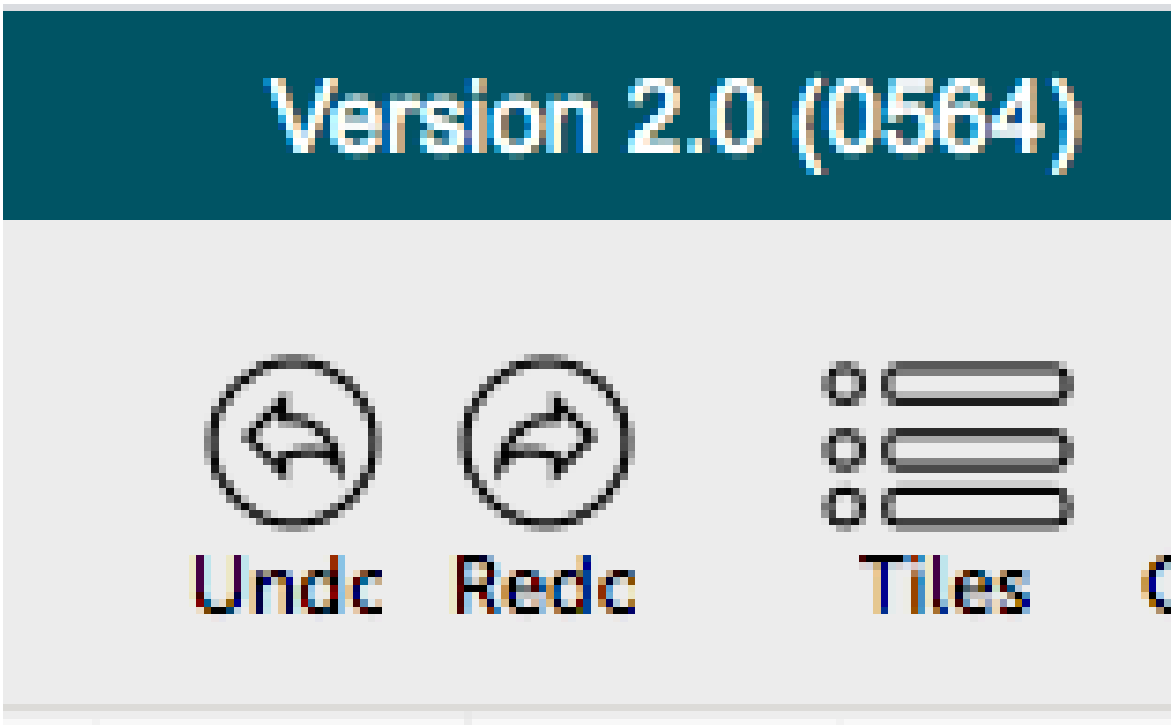
13 Undo and Redo

The Basics

Reverse your most recent action. If you change your mind, you can “redo” to restore it.

HINT

Find the back arrow in the top right corner of the screen. You'll see the "redo" (forward arrow) right next to it.



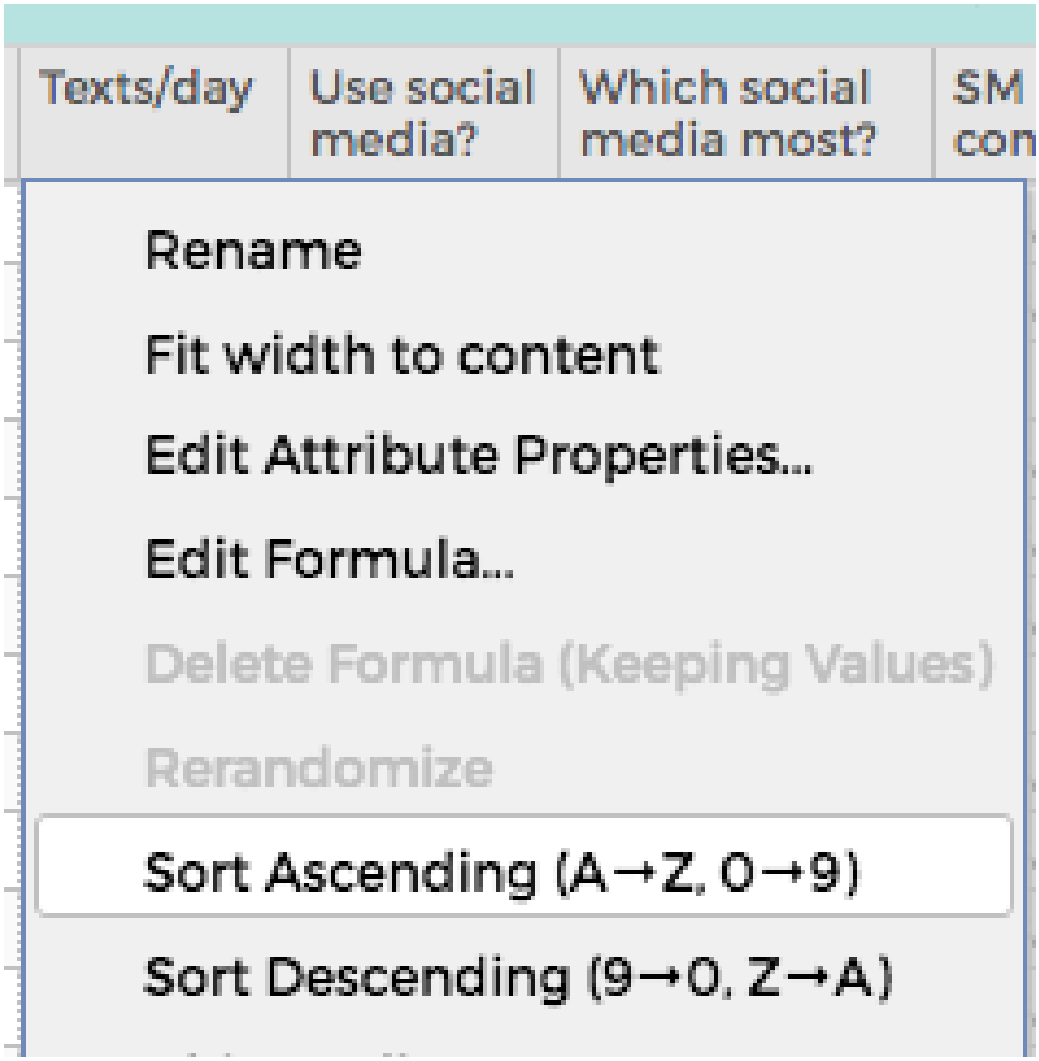
14 Sort in a table

The Basics

Sort data in a table in alphabetical, numeric, or chronological order for a single attribute.

HINT

In the top row of the table, click on the attribute you are interested in. Select “Sort Ascending” or “Sort Descending.”



15 See a list of all your graphs, maps, and tables

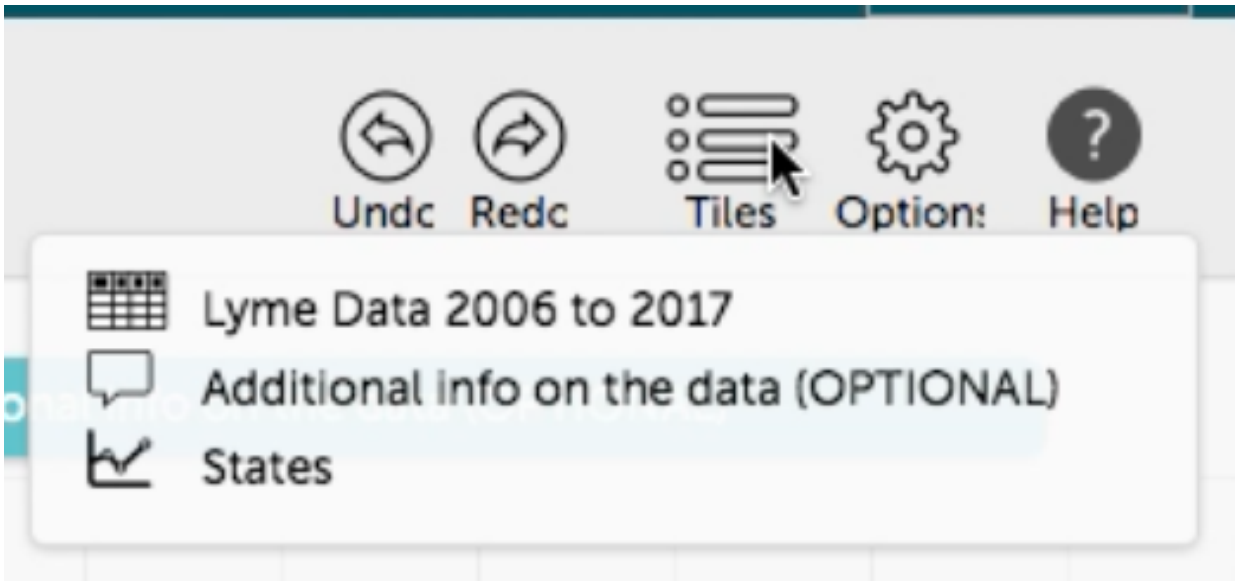
The Basics

Find all the graphs, maps, and tables you made in one place. This can help if you've got a lot open on your screen at once.

HINT

Click on “Tiles” in the top right corner of your screen. Click on any of the items in the list to bring it to the front.

Bonus hint: Make sure to label all of your graphs and maps so you’ll be able to find them in the list.



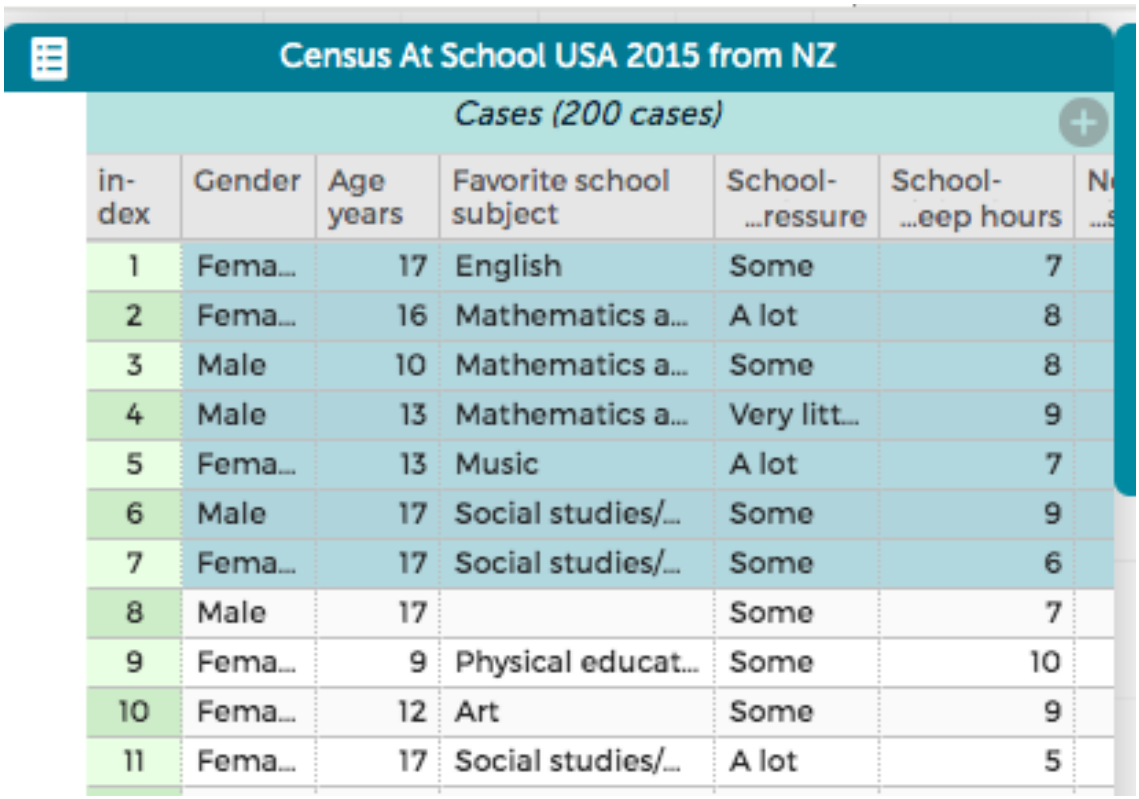
16 Select a group of cases in a table

Filtering and Grouping

Select and highlight a set of cases in a table that you'd like to separate from the others.

HINT

To select multiple rows in a table, hold down the “command” key and then click on each row you want to select (or hold down “shift” to select a group of adjacent rows).



Census At School USA 2015 from NZ

Cases (200 cases)

in-dex	Gender	Age years	Favorite school subject	School- ...ressure	School- ...eep hours	N...
1	Fema...	17	English	Some	7	
2	Fema...	16	Mathematics a...	A lot	8	
3	Male	10	Mathematics a...	Some	8	
4	Male	13	Mathematics a...	Very litt...	9	
5	Fema...	13	Music	A lot	7	
6	Male	17	Social studies/...	Some	9	
7	Fema...	17	Social studies/...	Some	6	
8	Male	17		Some	7	
9	Fema...	9	Physical educat...	Some	10	
10	Fema...	12	Art	Some	9	
11	Fema...	17	Social studies/...	A lot	5	

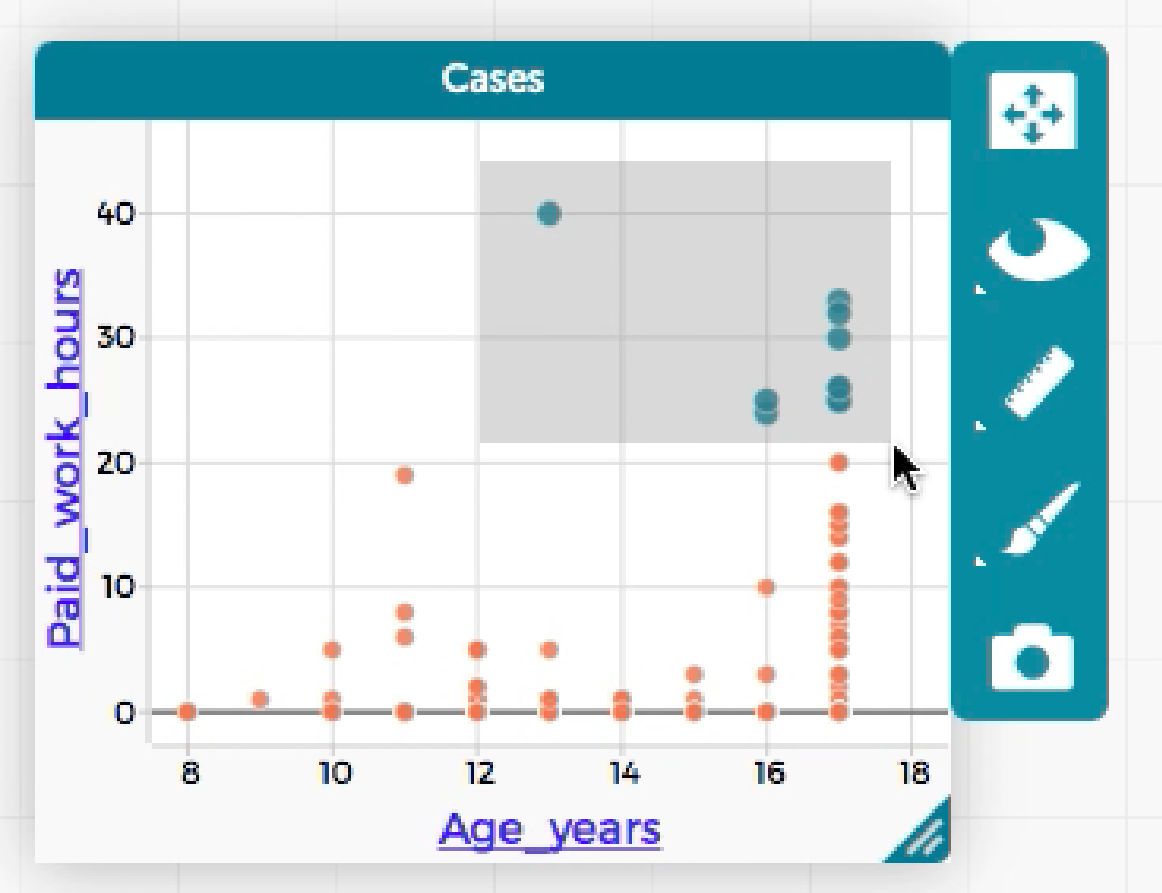
17 Select a group of cases in a graph

Filtering and Grouping

Select and highlight a set of cases in a graph that you'd like to separate from the others.

HINT

To select multiple points on a graph, hold down the “command” key and then click on each point you want to select. You can also click and drag across a group of points to highlight them all.



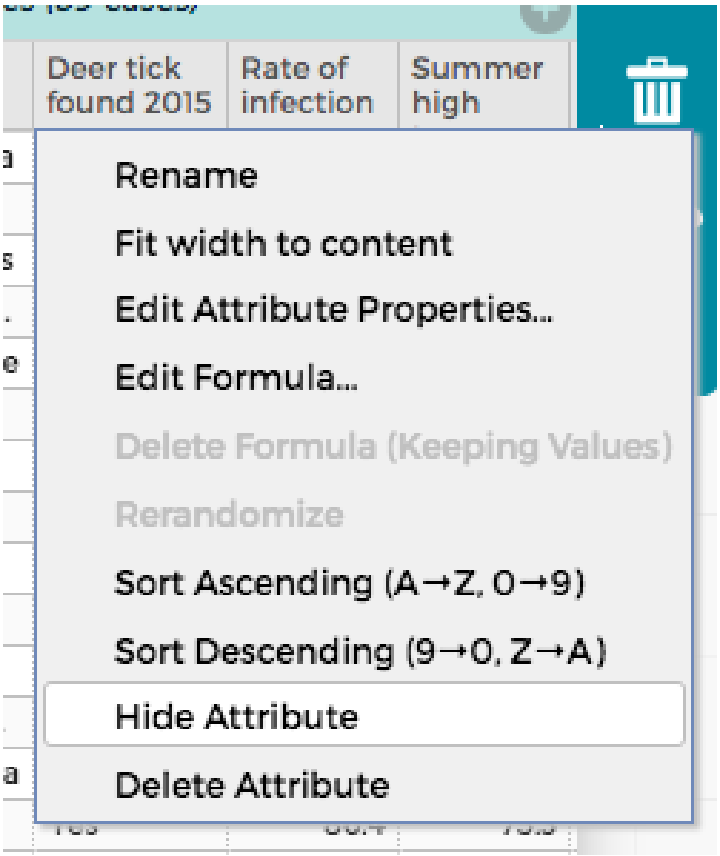
18 Hide an attribute in a table

Filtering and Grouping

Temporarily hide an attribute (column) in a table so you no longer see that attribute or its values.

HINT

Click on the name of the attribute in the top row of the table, scroll down in the menu that appears and select “hide attribute.” To make hidden attributes reappear, click on the eye menu and select “show hidden attributes.”



19 Hide cases in a graph or map

Filtering and Grouping

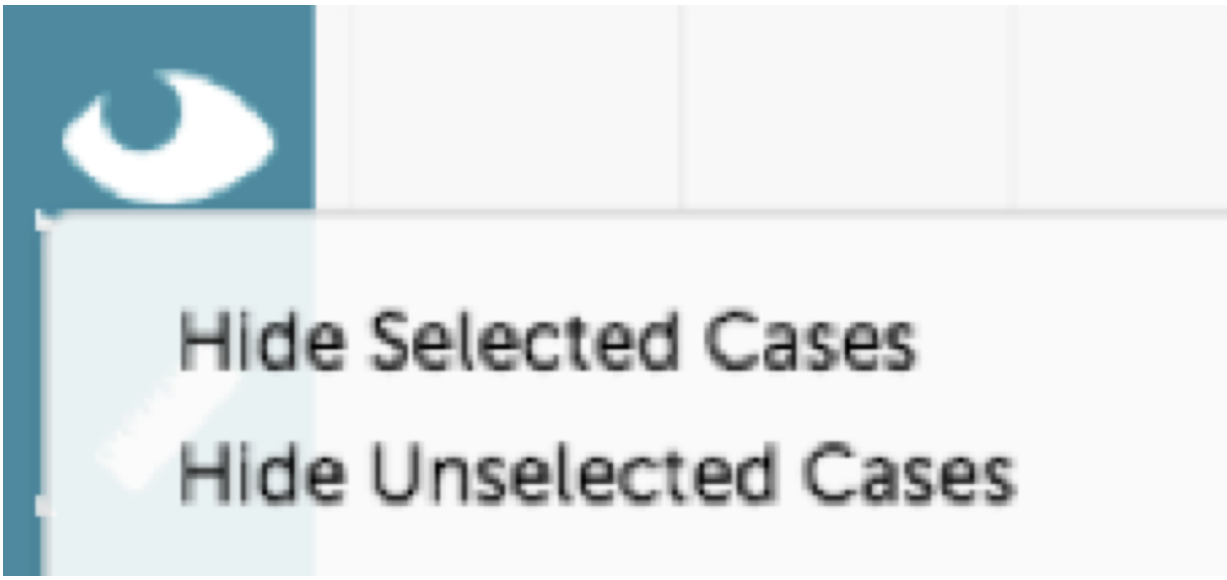
Hide some of the data on your map or graph so you can focus on only the data you want to see.

HINT

Select data points either on the table, map, or graph.

Click on the eye on the sidebar of the map or graph.

Select “hide selected” and watch them disappear. Try hiding “unselected” cases, too!



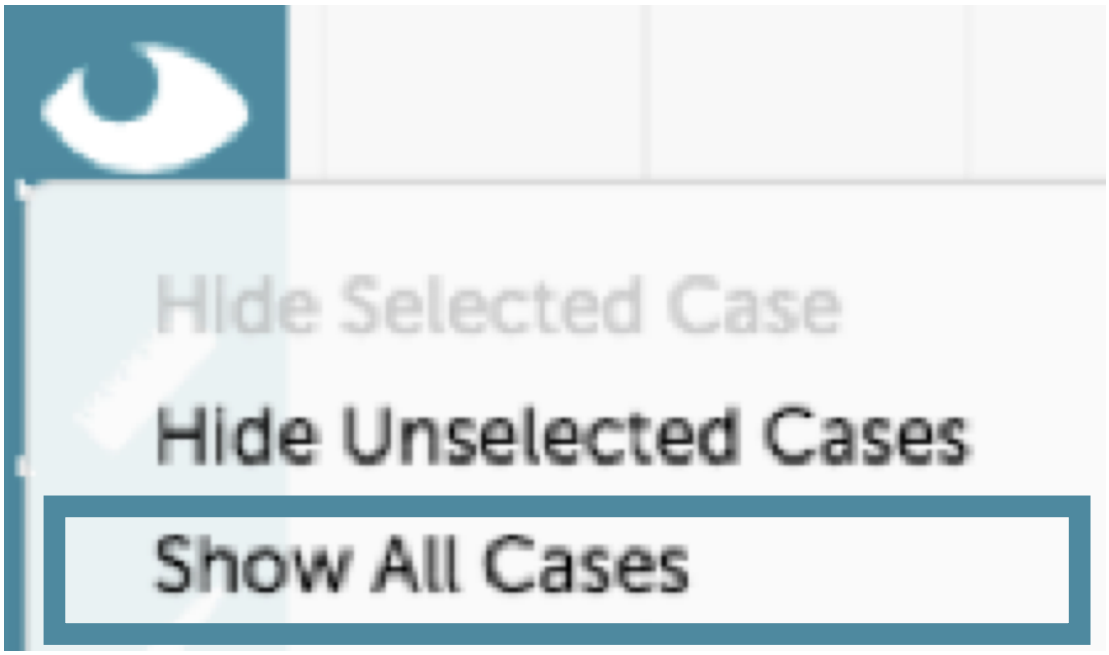
20 Reveal hidden data

Filtering and Grouping

Bring back the data you've hidden so you can see everything again.

HINT

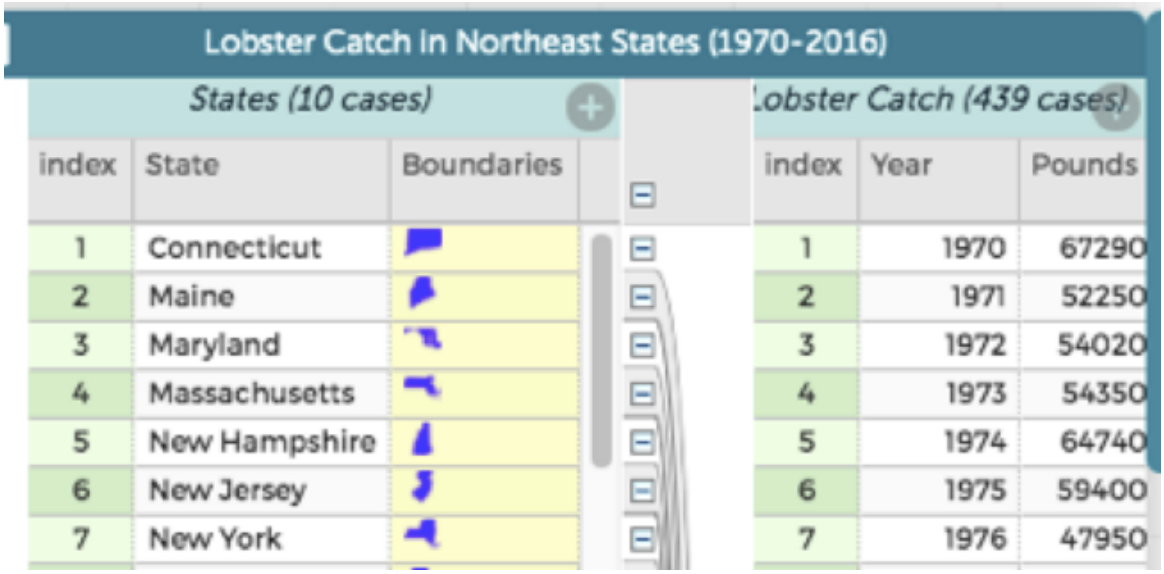
Using the “eye” menu, choose “show all cases.”



21 Reorganize a table

Filtering and Grouping

Organize the data in the table according to an attribute that you are interested in.



Lobster Catch in Northeast States (1970-2016)

States (10 cases)

index	State	Boundaries
1	Connecticut	
2	Maine	
3	Maryland	
4	Massachusetts	
5	New Hampshire	
6	New Jersey	
7	New York	

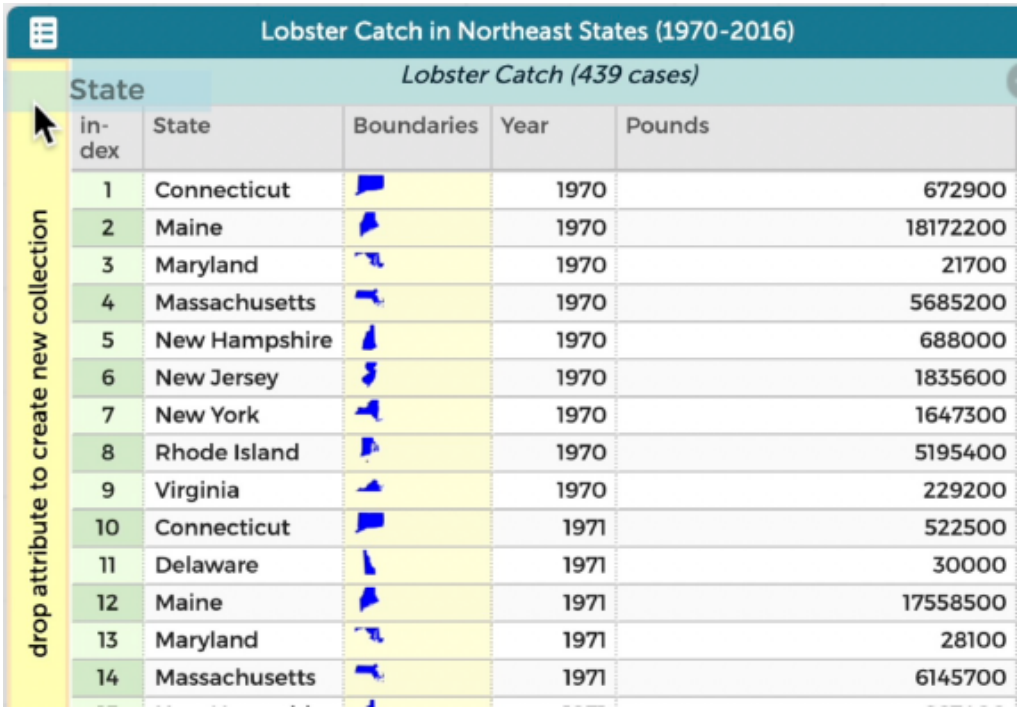
Lobster Catch (439 cases)

index	Year	Pounds
1	1970	67290
2	1971	52250
3	1972	54020
4	1973	54350
5	1974	64740
6	1975	59400
7	1976	47950

HINT

Drag the attribute you are interested in all the way to the left side of the table. You will see an instruction to "Drop attribute to create a new collection."

This will "collect" the data together that share the same values for your attribute.



index	State	Boundaries	Year	Pounds
1	Connecticut		1970	672900
2	Maine		1970	18172200
3	Maryland		1970	21700
4	Massachusetts		1970	5685200
5	New Hampshire		1970	688000
6	New Jersey		1970	1835600
7	New York		1970	1647300
8	Rhode Island		1970	5195400
9	Virginia		1970	229200
10	Connecticut		1971	522500
11	Delaware		1971	30000
12	Maine		1971	17558500
13	Maryland		1971	28100
14	Massachusetts		1971	6145700

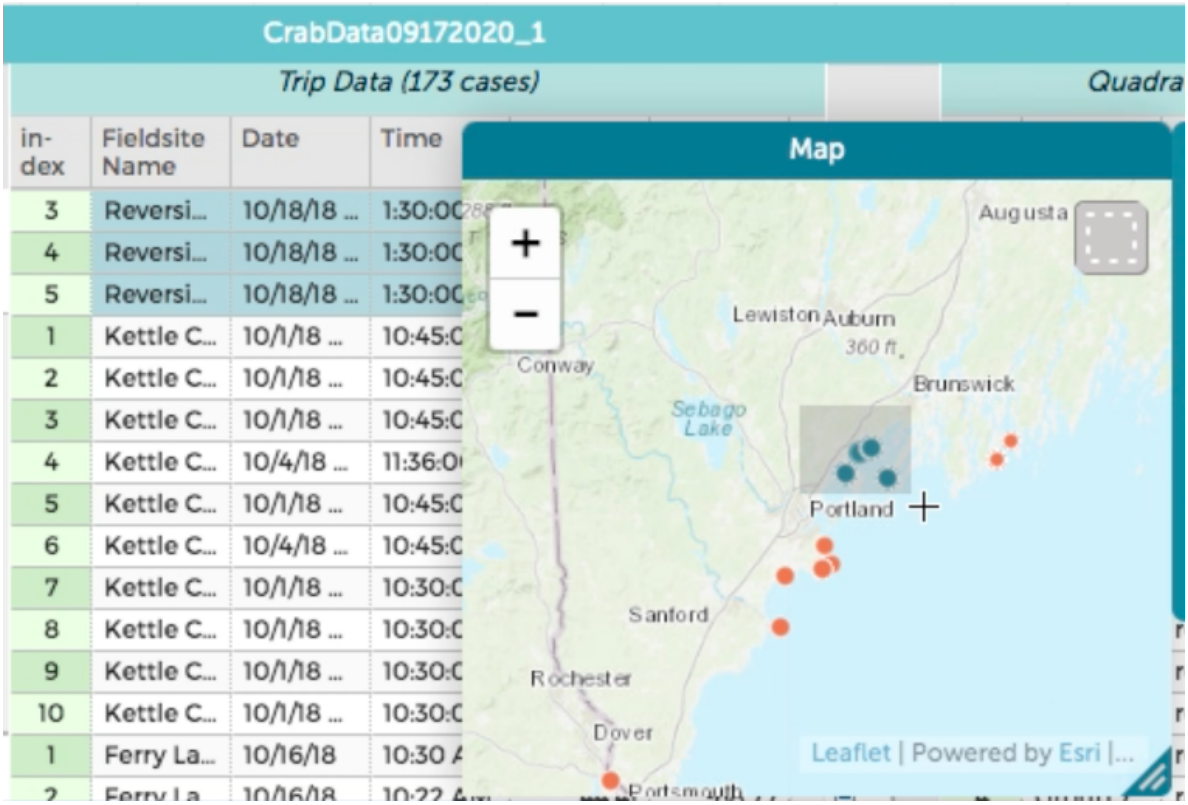
22 Select all the data from an area on the map

Filtering and Grouping

Select all the data from an area on the map, including multiple cases of data from the same point.

HINT

Click on the box in the top right corner of the map, then drag the cursor over the area you want to select. This only works on data that shows up as points on a map.



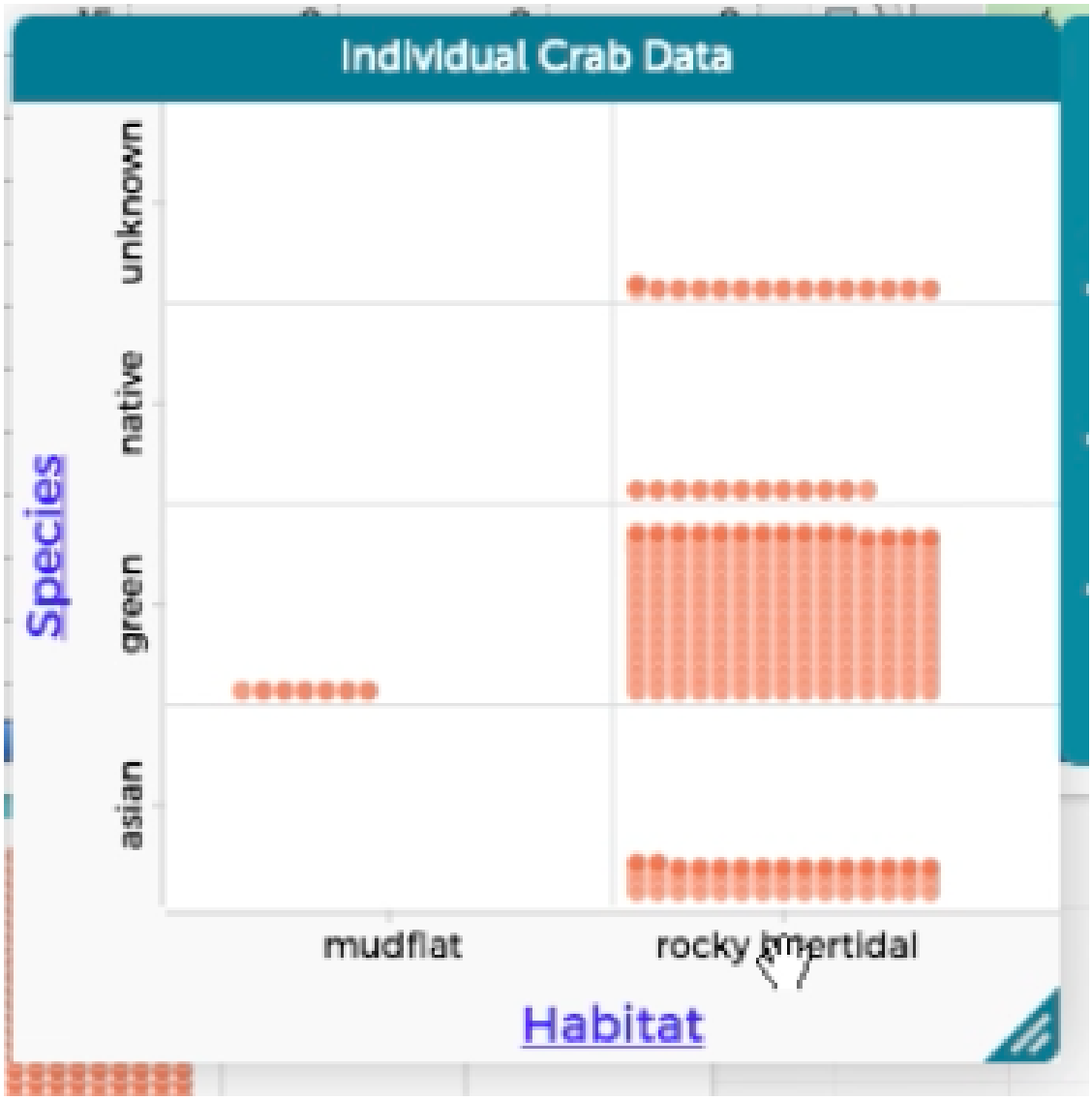
23 Reordering categories in a graph along the axis

Visualizing the Data

Change the order in which categories are displayed on the x axis of a graph.

HINT

Click on the name of category below the axis and drag it where you want it to be along the axis.



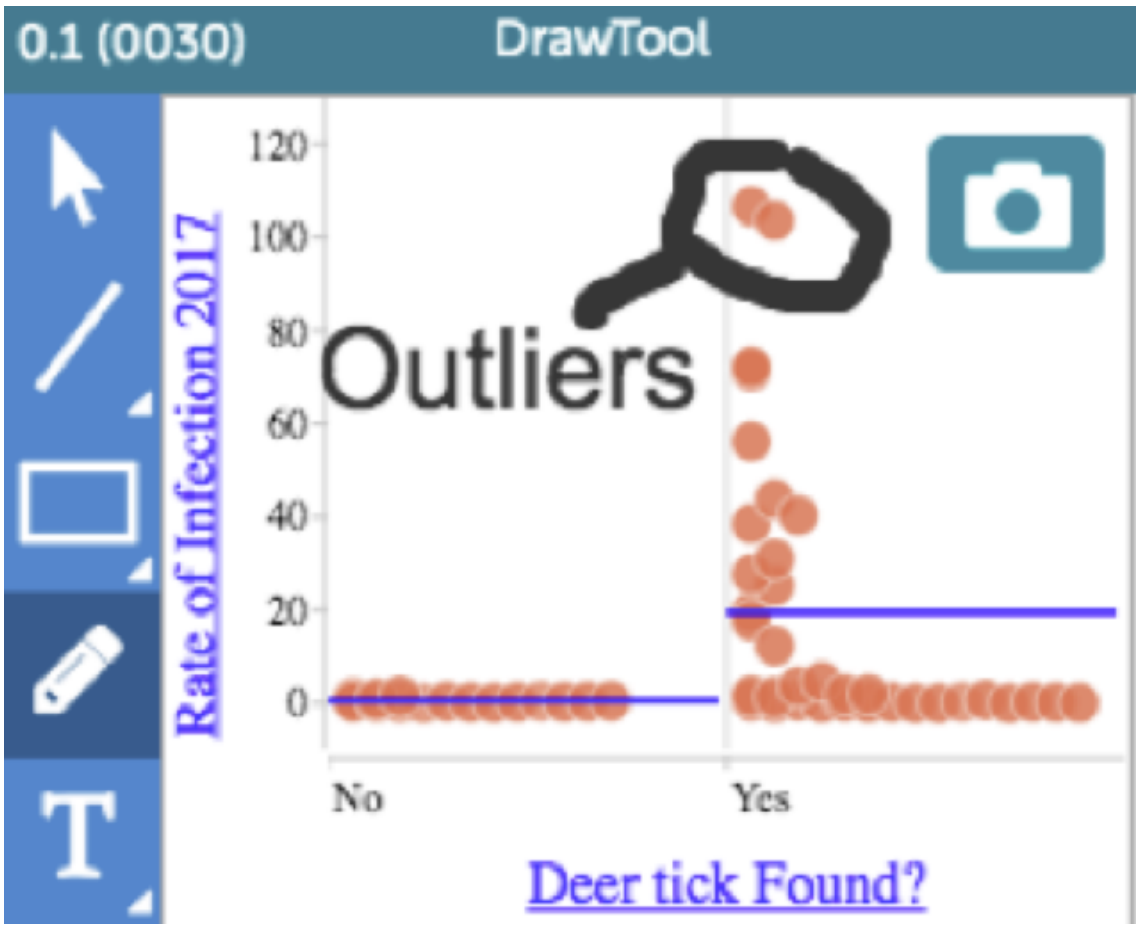
24 Annotate (label) a graph or map

Visualizing the Data

Take a snapshot of your graph and then circle or underline interesting data points. Add text to give meaning, too.

HINT

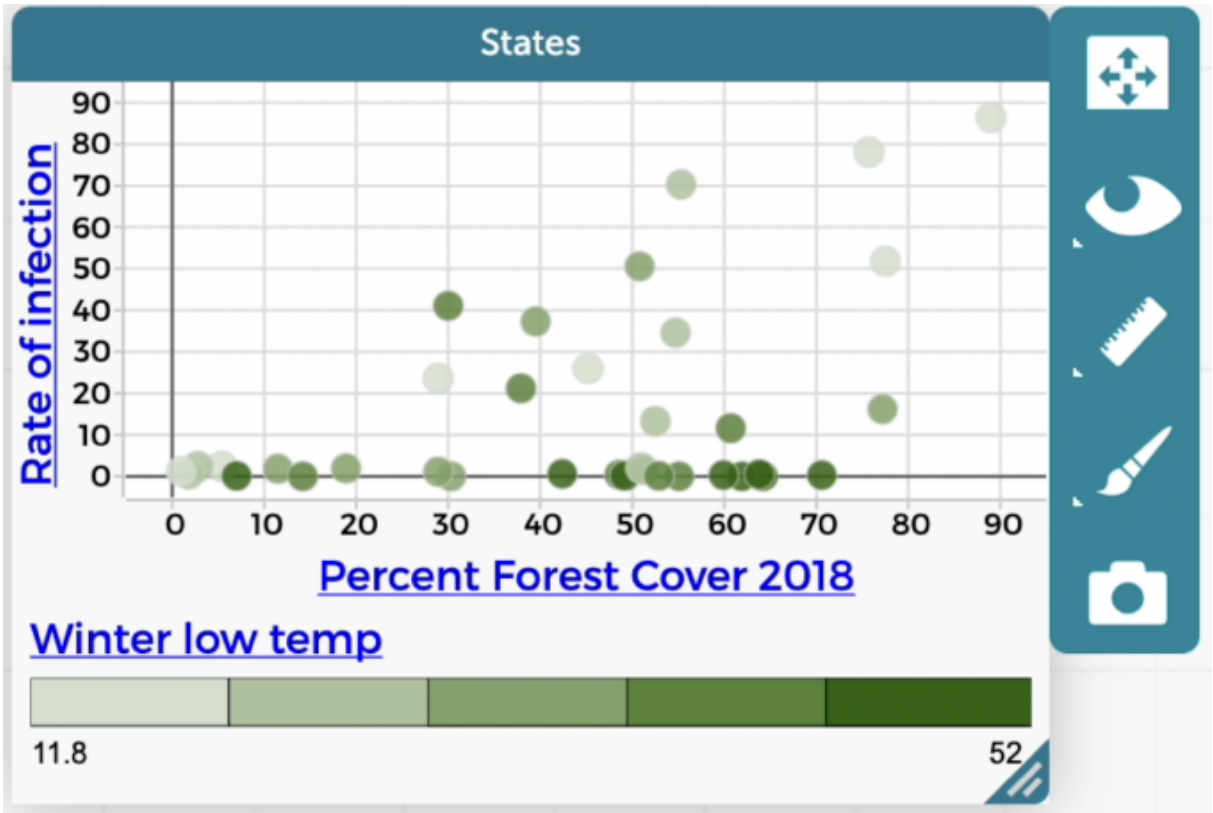
Go to the camera icon and select “open in draw tool.” Click on the pencil icon in the draw tool and then annotate away!



25 Add a third attribute to a graph

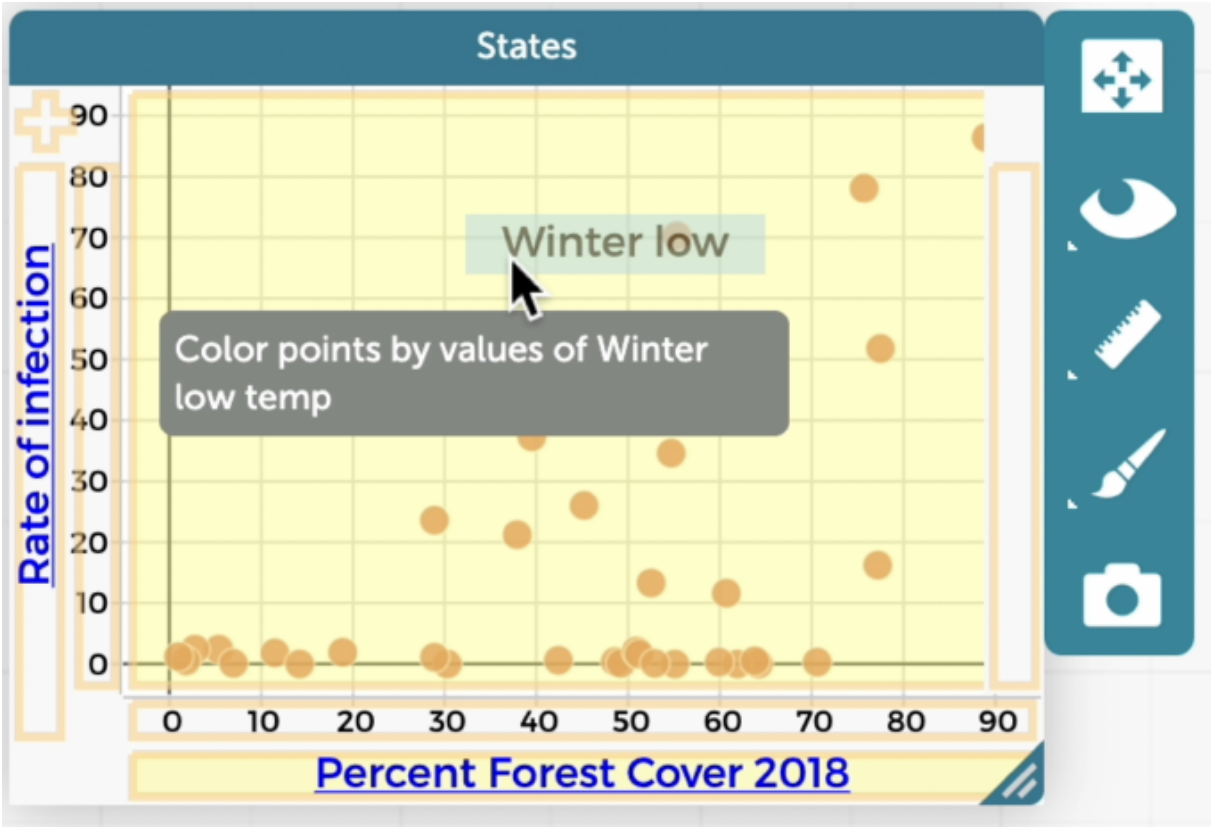
Visualizing the Data

Add a third attribute to a graph to color code the data.



HINT

Drag the attribute that you want to add to the middle of your graph. Now you can look for patterns involving 3 attributes.



26 Scroll through an axis on a graph

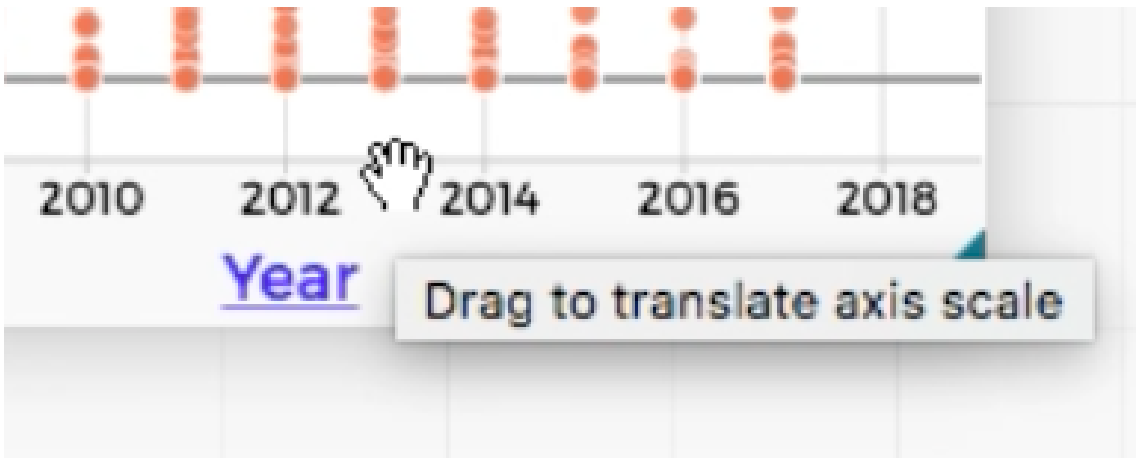
Visualizing the Data

Move either the x or y axis without changing the scale. This helps you see all the data in a graph.

Numerical attributes only

HINT

Hover the cursor over the axis until the hand is pointing toward the middle of the graph. Click and drag from side to side.



27 Change the scale of an axis on a graph

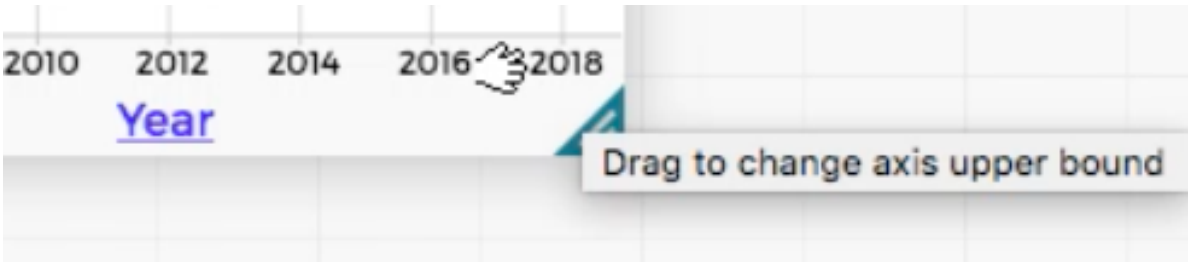
Visualizing the Data

Change the range of values shown along an axis in your graph. This makes the data look either more squished together or more spread apart.

Numerical attributes only

HINT

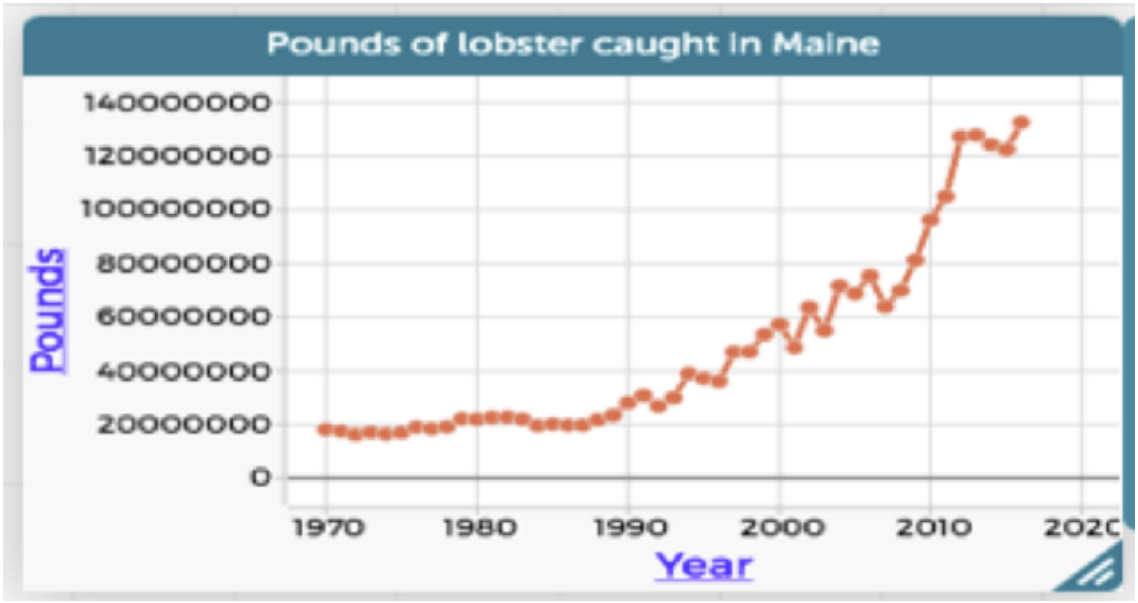
Hover the cursor over the axis until the hand is pointing in the direction you want to drag the numbers. Click and drag.



28 Connect the dots

Visualizing the Data

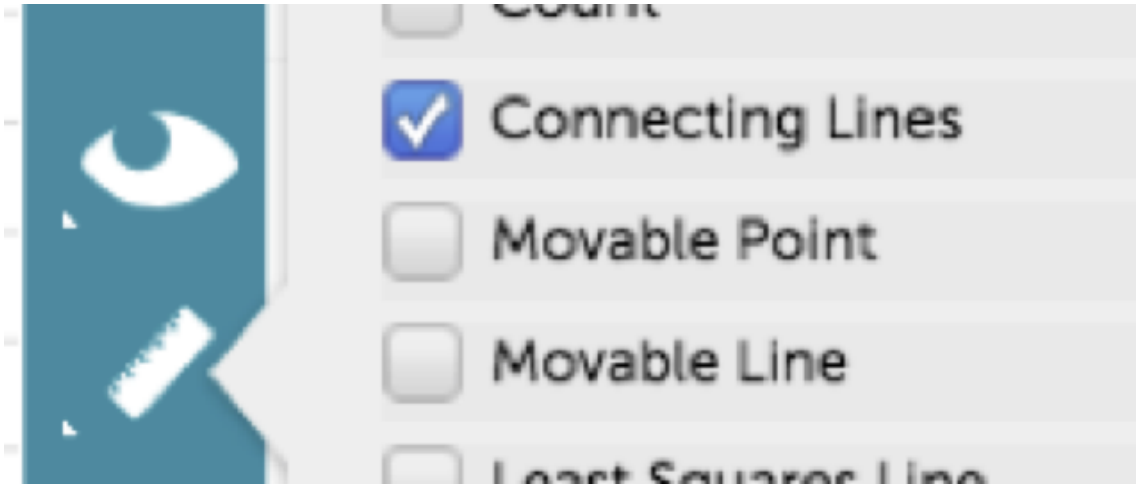
Add connecting lines between data points.



Two numerical attributes only

HINT

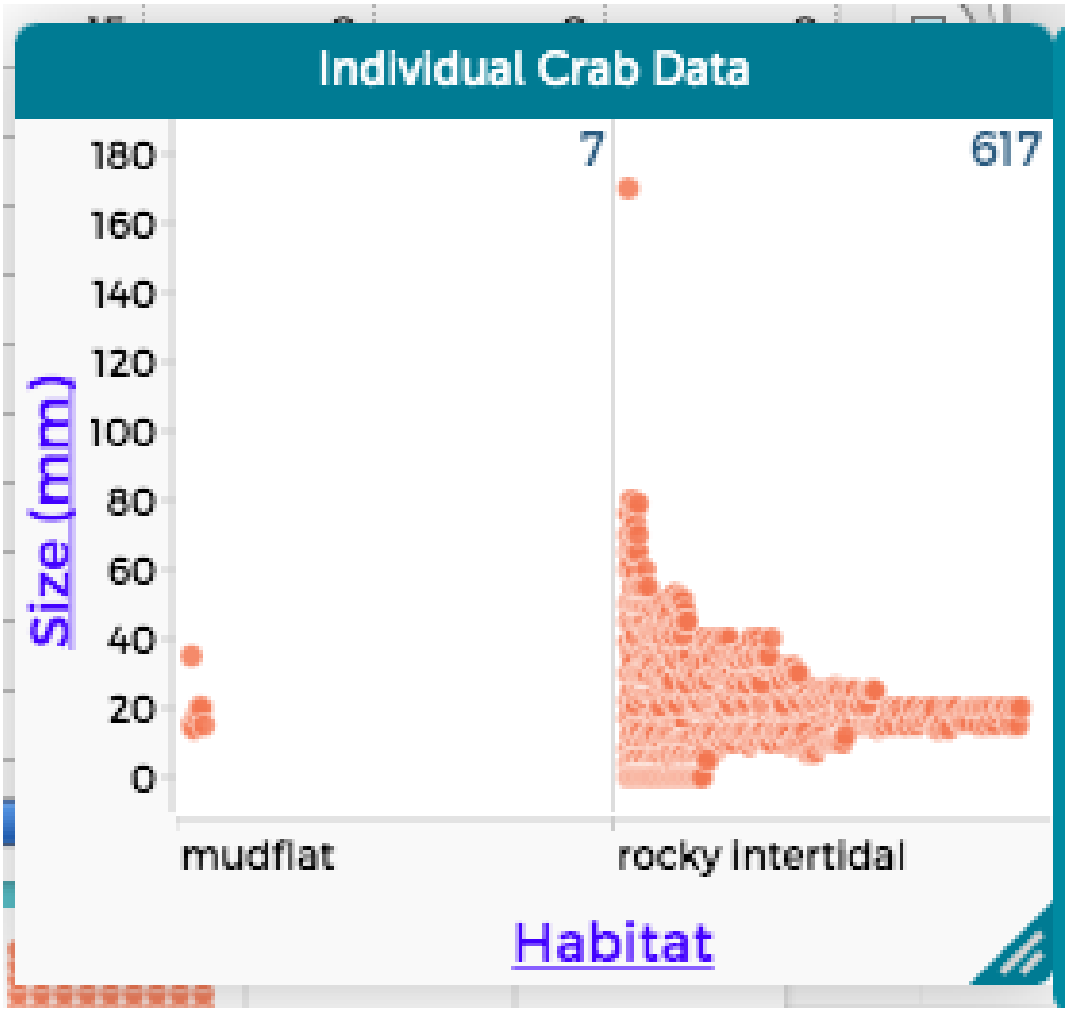
Start by making a graph with a numeric attribute in the x axis (like year). Go to the graph tools and find “Connecting Lines.”



29 Get a count of the data

Statistical Tools

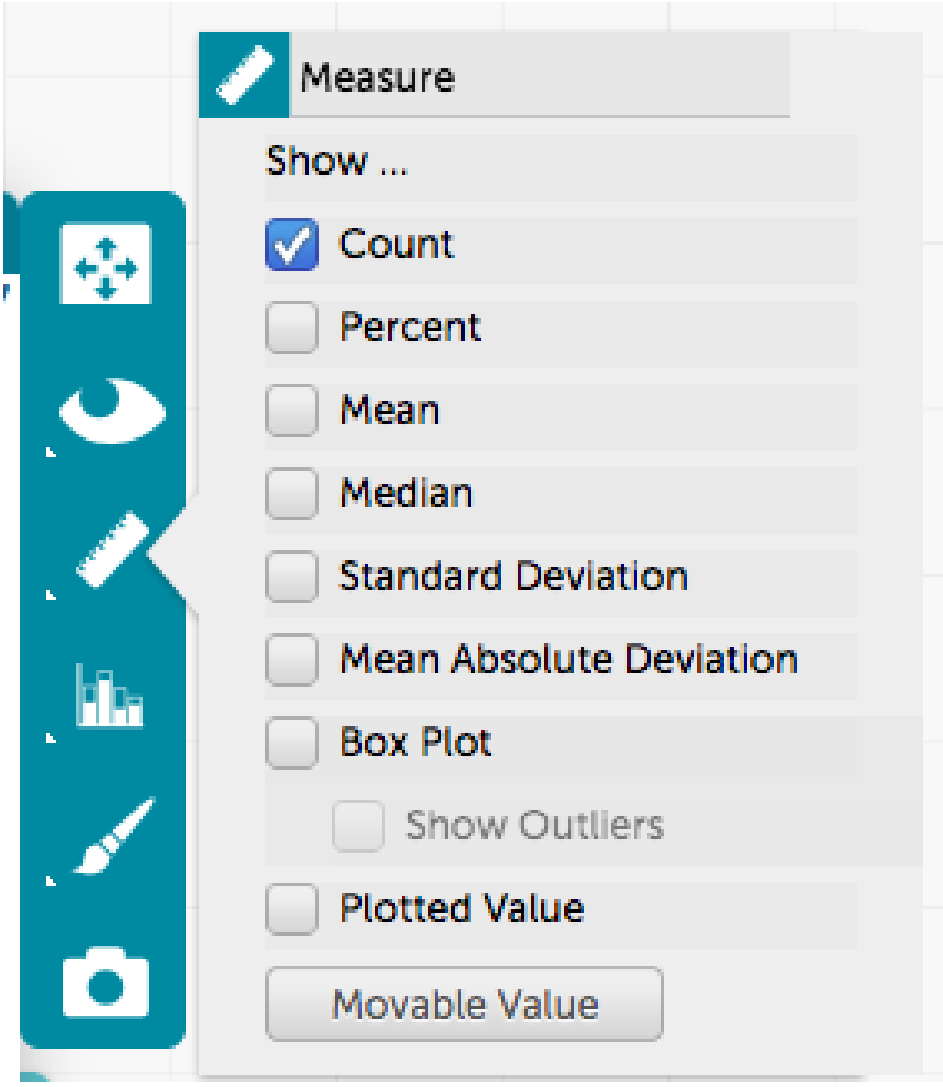
Show the number of cases on a graph.



At least one categorical variable

HINT

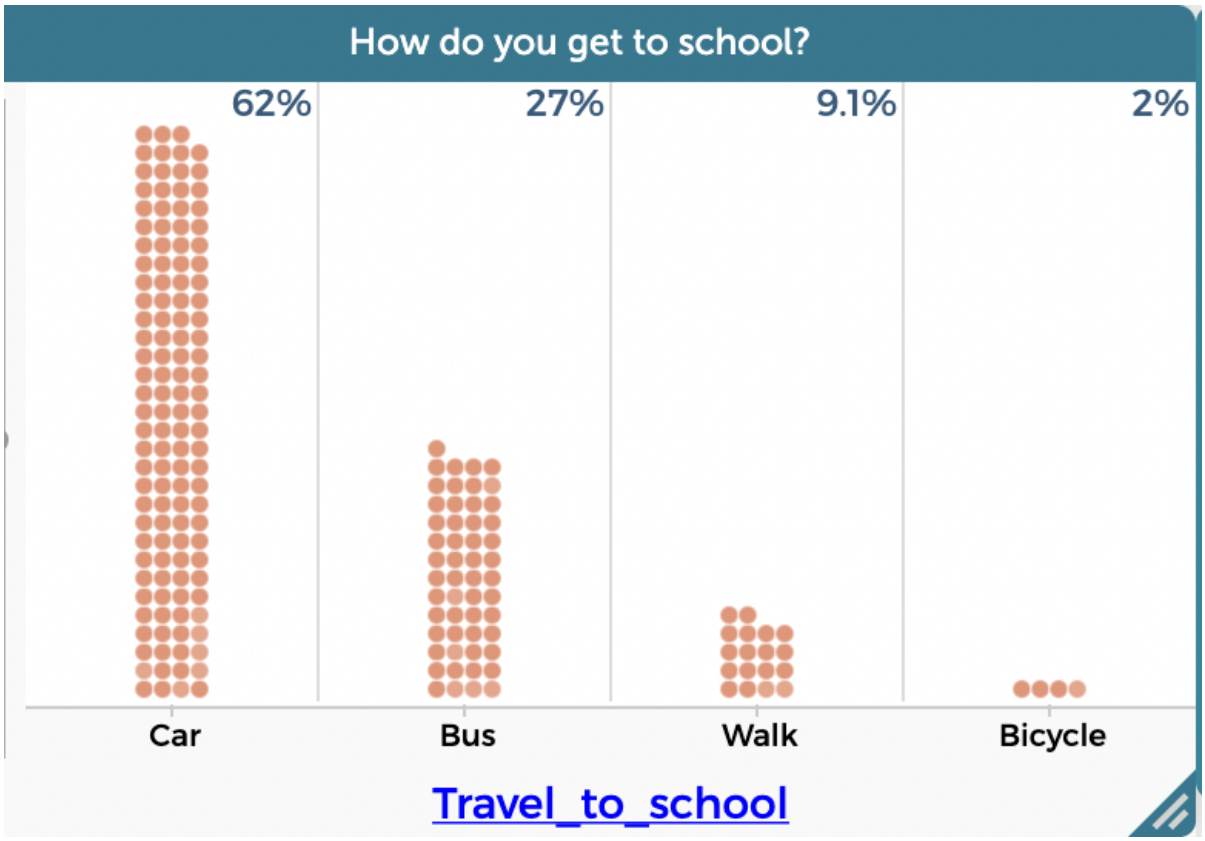
Click on the ruler to the right of the graph and select “Count.” Note that for this to work, one or both of the attributes on the x or y axes must be categorical.



30 Find the percentage in each category

Statistical Tools

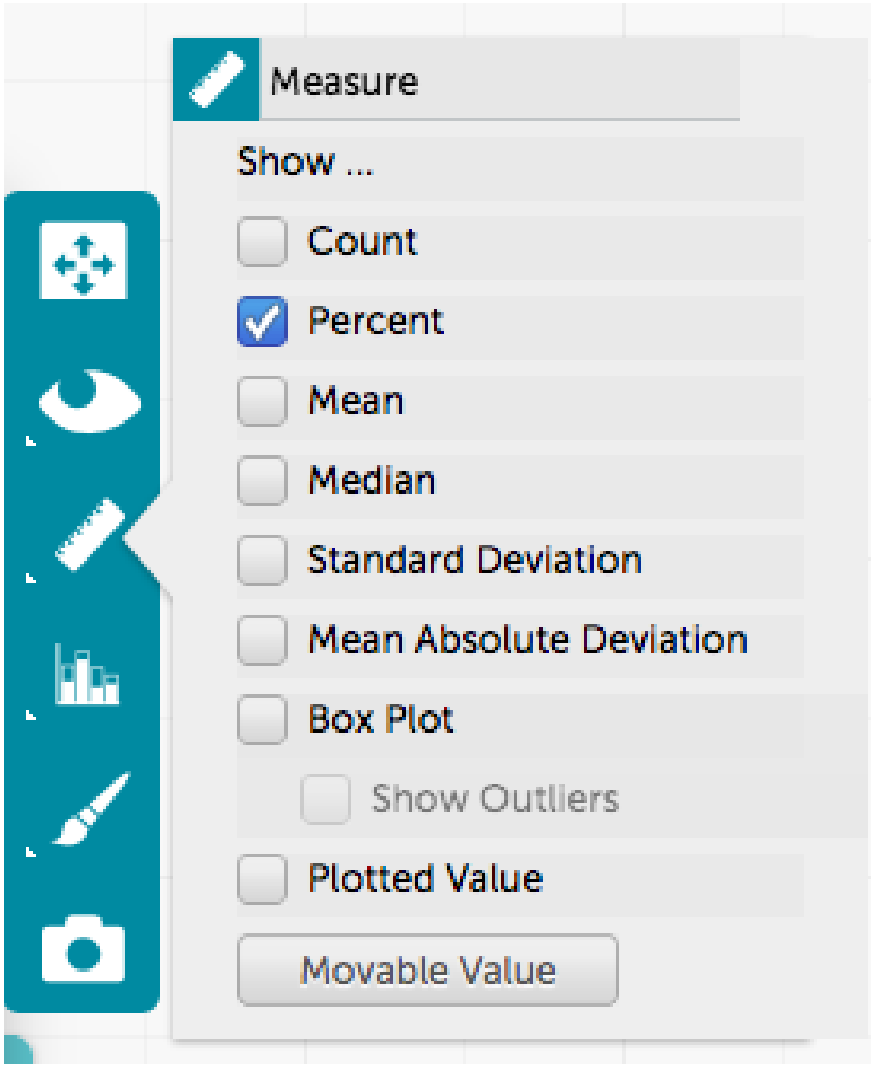
Show the percentage of cases in each portion of the graph.



At least one categorical variable

HINT

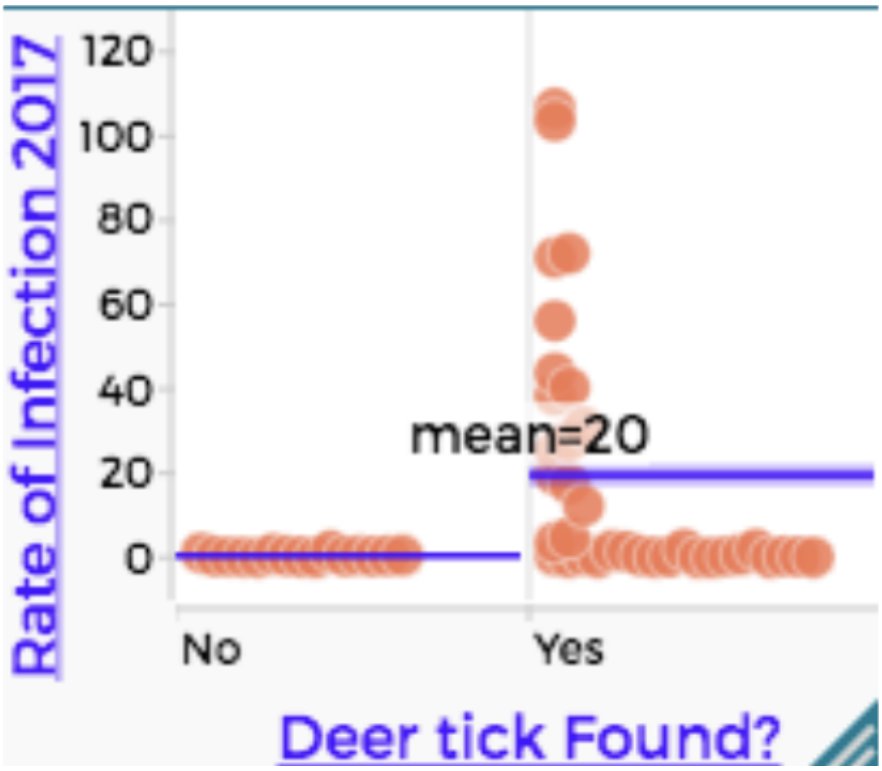
Click on the ruler to the right of the graph and select “Percent.” You can specify the type of percent: by row, by column, or by cell.



31 Find the mean or median

Statistical Tools

Create a graph of a numeric attribute. What is the middle value (median) of the distribution? What is the average value (mean)?

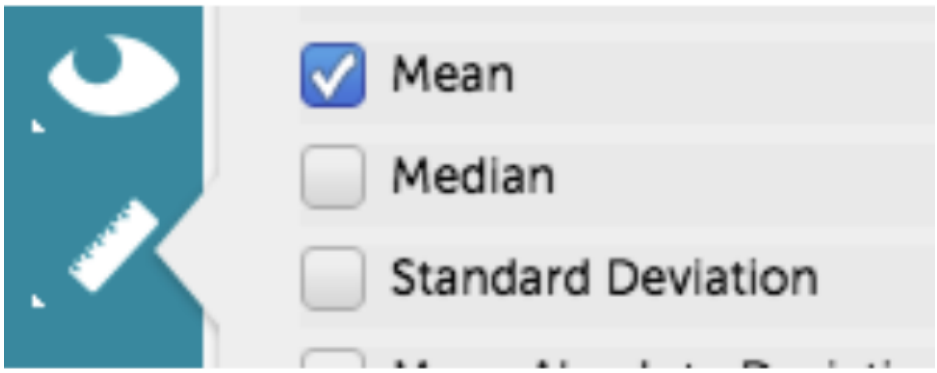


[One numerical] OR [one numerical and one categorical attribute]

HINT

Click on the ruler icon. Select “Median” or “Mean.” It tells you what value is in the median or mean for the distribution and draws a line to show you where that value falls on the graph. Hover over the line to find the exact value.

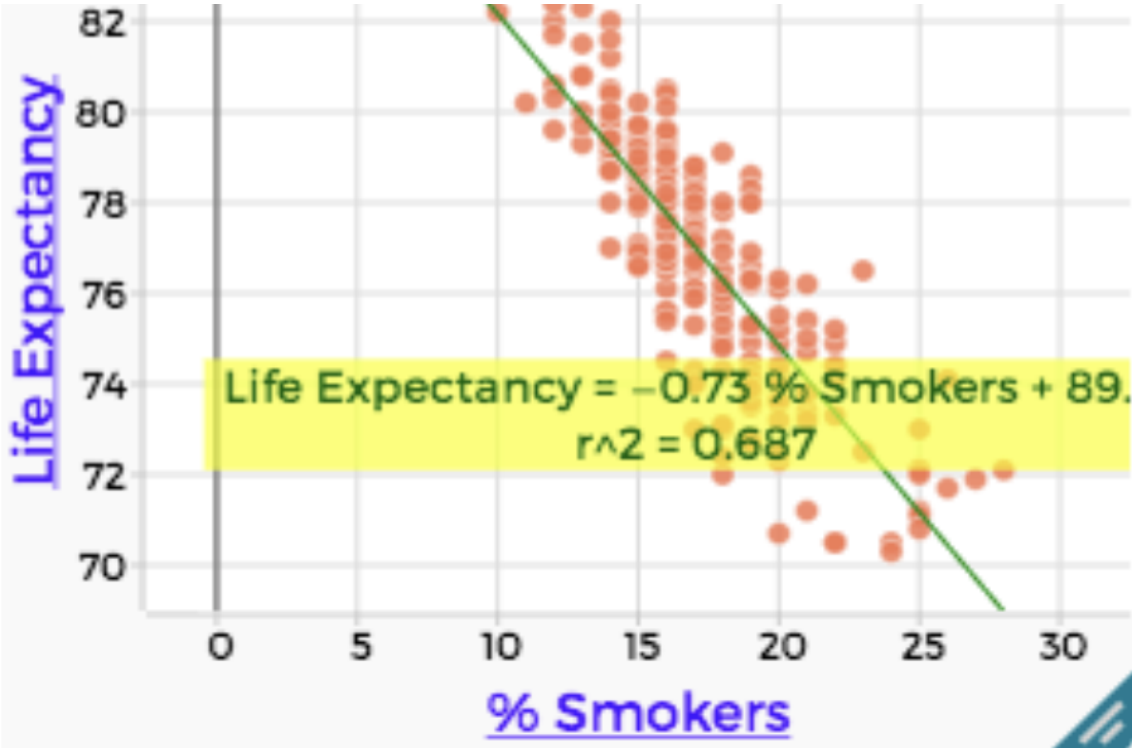
Note that for this to work, the attributes on the x and y axes cannot both be numeric attributes



32 Visualize a trend

Statistical Tools

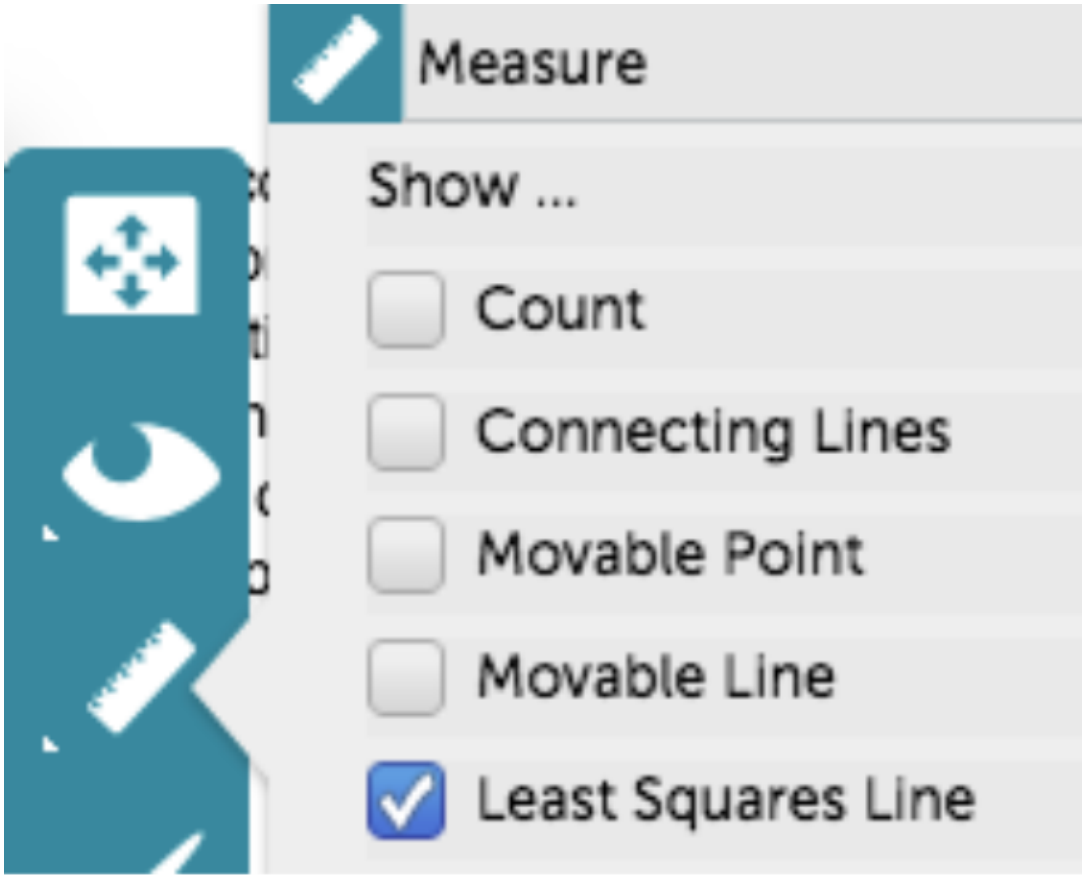
Add a least squares line to a graph to see how strong a correlation or a trend there is between two attributes.



Two numerical attributes only

HINT

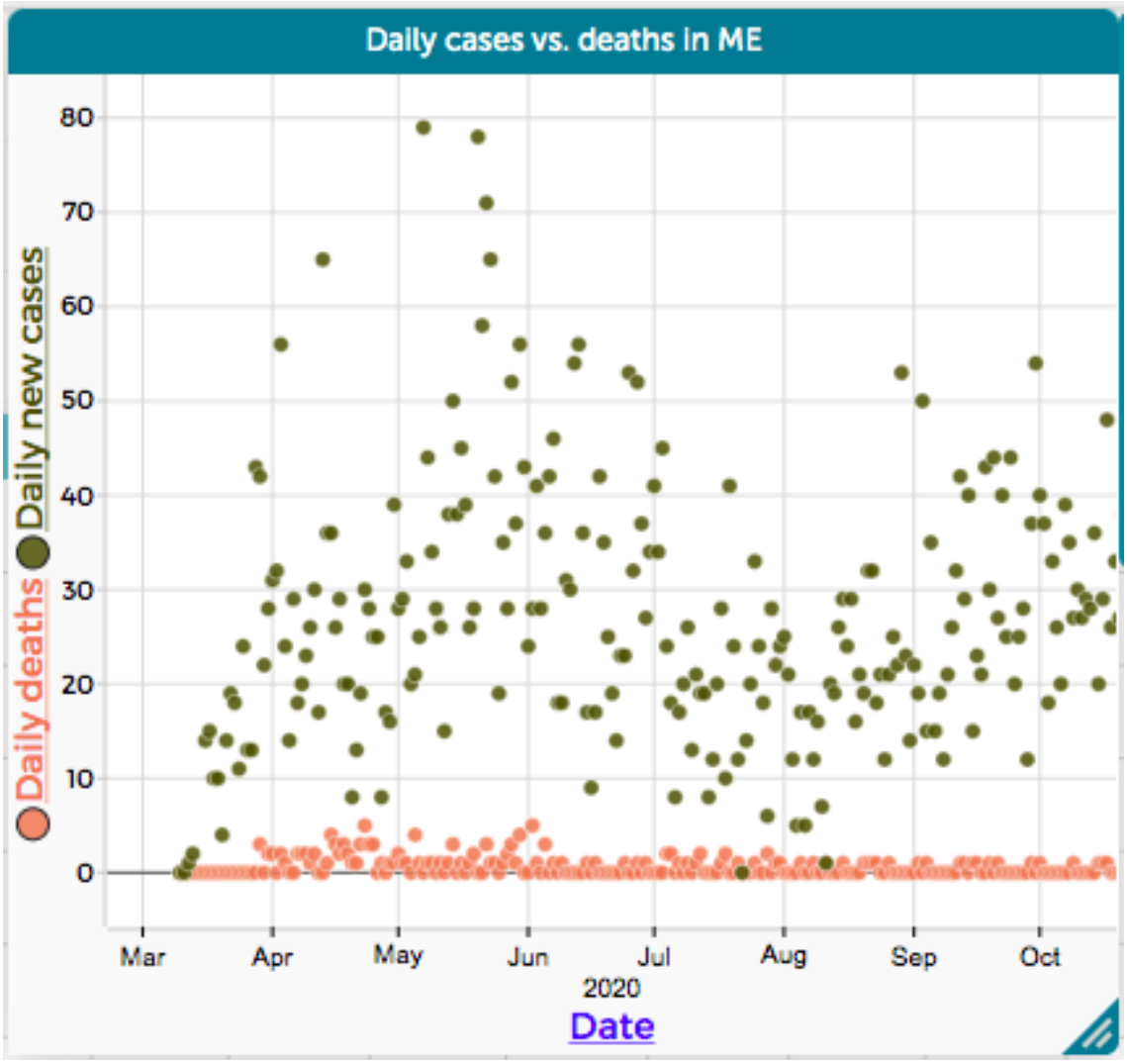
Click on the ruler icon. Select “least squares line.” For this to work, both axes of the graph must have numeric data.



33 Graph multiple attributes on the y axis

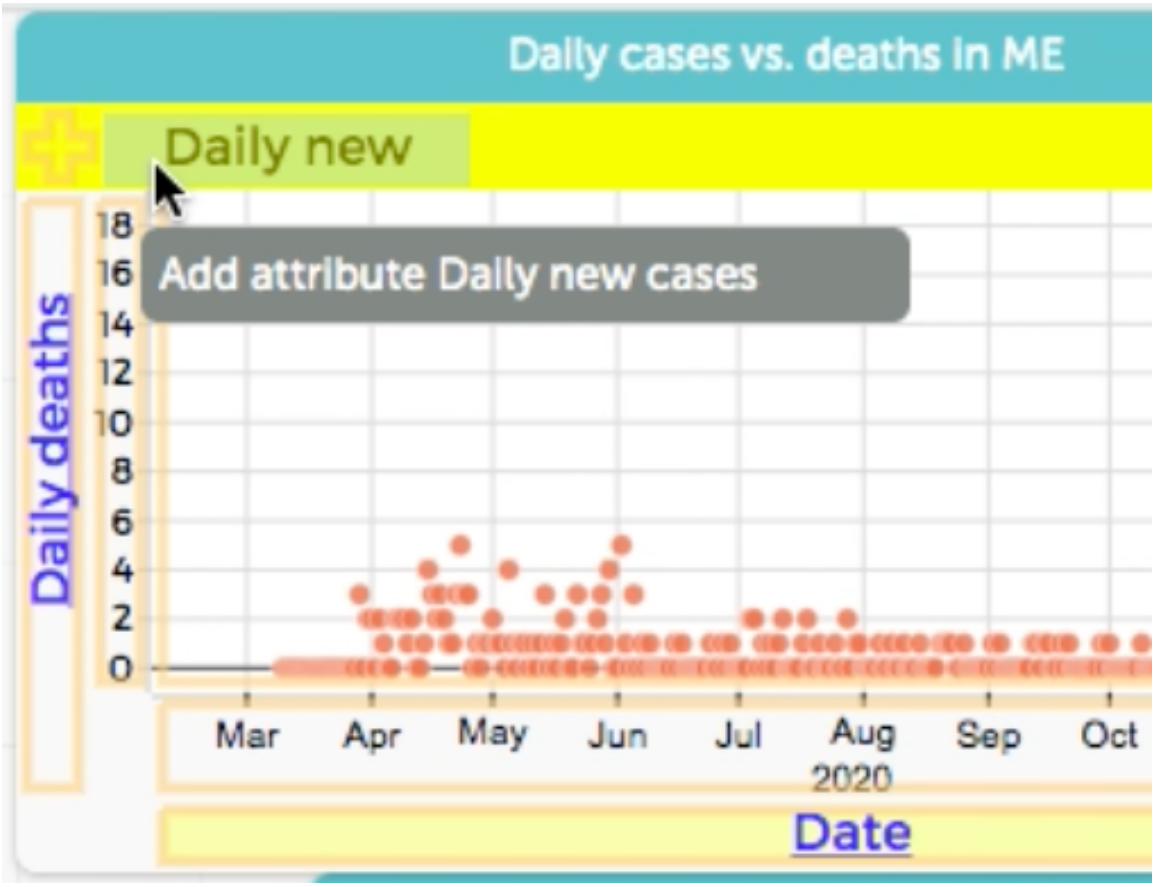
Advanced Data Moves

Compare two or more attributes by graphing them on the same y axis.



HINT

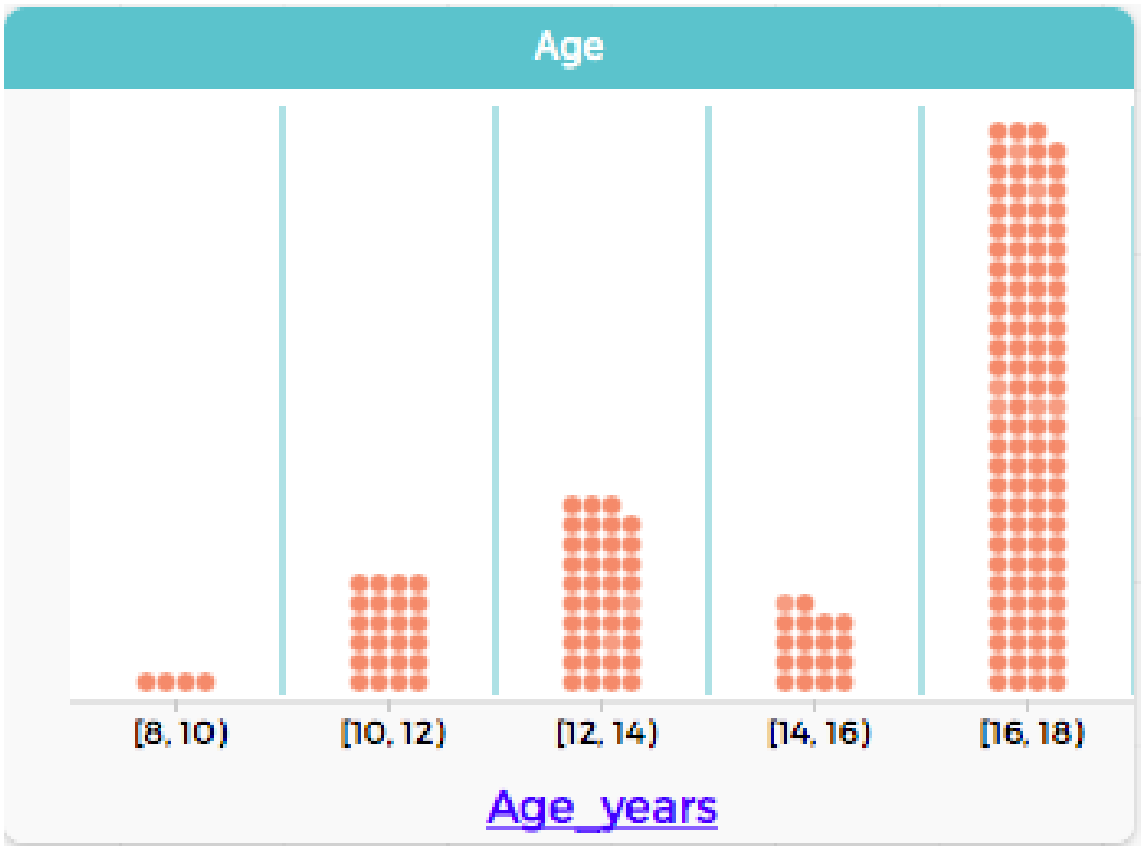
After you've graphed one or more attributes on the y axis, grab the name of the new attribute you want to graph and move it to the top of the y axis. Drop it where the yellow bar appears.



34 Group numerical data into bins

Advanced Data Moves

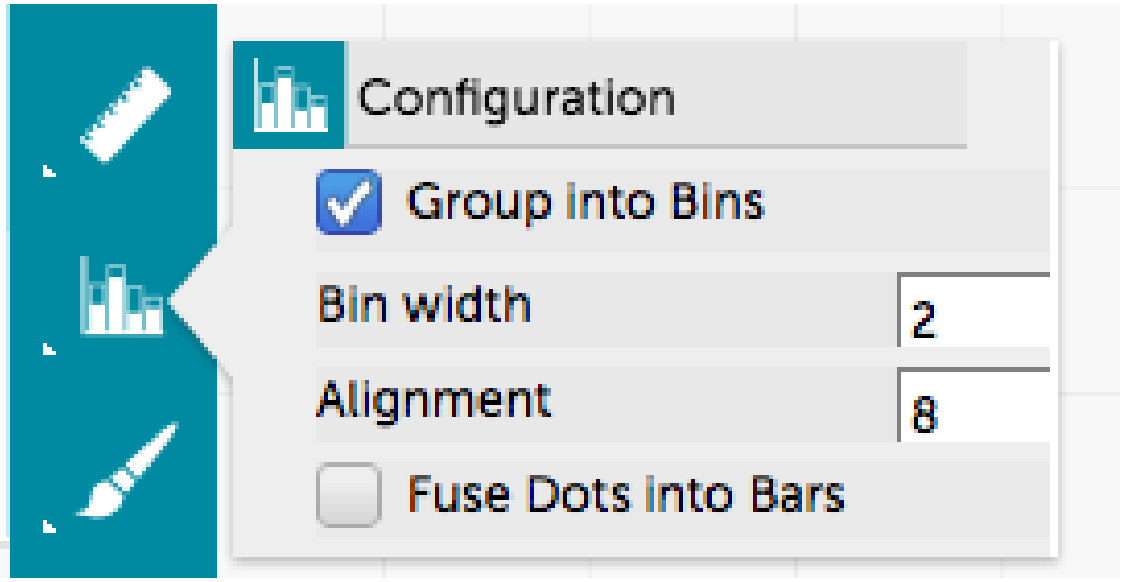
Group numerical data on a graph into multiple bins representing different numeric ranges.



Numerical attributes only

HINT

Click on the bar chart icon to the right of the graph. Select “Group into Bins.” Note that you can change the bin width. Note that for this to work, the atttributes on the X and Y axes cannot both be numeric attributes



35 Create formula to calculate or convert values in a table

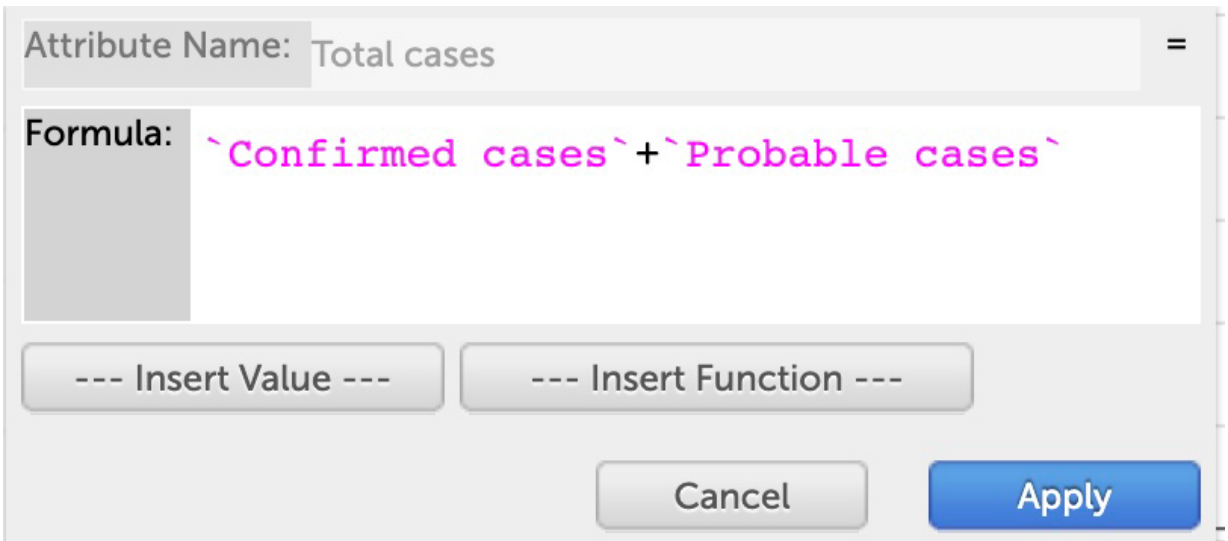
Advanced Data Moves

Create a formula to calculate new values or convert values to a new format and put them in a new column in a CODAP table.

HINT

Create a new column. Click on the name of the new column and select “Edit Formula.”

To add an attribute already in the table to the formula, click “Insert Value.” “Insert Function” allows you to do more advanced built-in functions, including statistical analyses.



DataClubs

CODAP Challenge Cards

These CODAP Challenge Cards were developed by the Data Clubs project, a collaboration of TERC, Inc., Science Education Solutions, and the Gulf of Maine Research Institute, funded by the National Science Foundation under grants DRL-1742255 and 1741989.

For more information on the Data Clubs project, visit www.terc.edu/dataclubs

©TERC 2021