

Chapter 7

Making Choropleth Maps in ArcGIS Desktop

Skills you will learn: How to create categorical and choropleth maps using ArcMap.

If you are unsure about how to use the ArcMap user interface, you should read the tutorial *A Quick Tour of ArcGIS Desktop* before using this tutorial.

Getting started

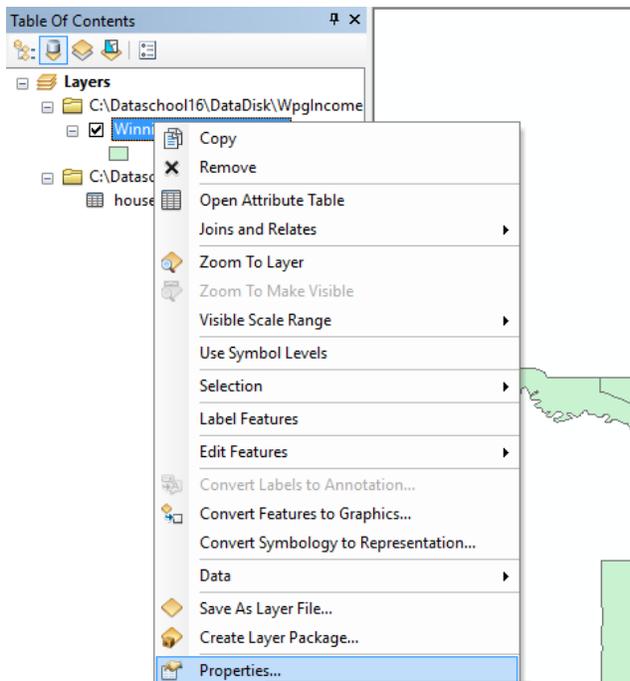
You will either need a map layer that already has the attributes you would like to display, or a map layer and a separate data table with the attributes. Make sure the map layer and the data table have a matching field for making the join, and that there is only one record on either side of the join.

To begin, add the data file(s) you would like to use for your map to the data frame. If the map layer already has the attributes you would like to display on the choropleth map, jump to the section *Making the Map*, below. We will demonstrate this skill using a map of census tracts in Winnipeg, Manitoba, Canada and a data file of median household incomes from the census.

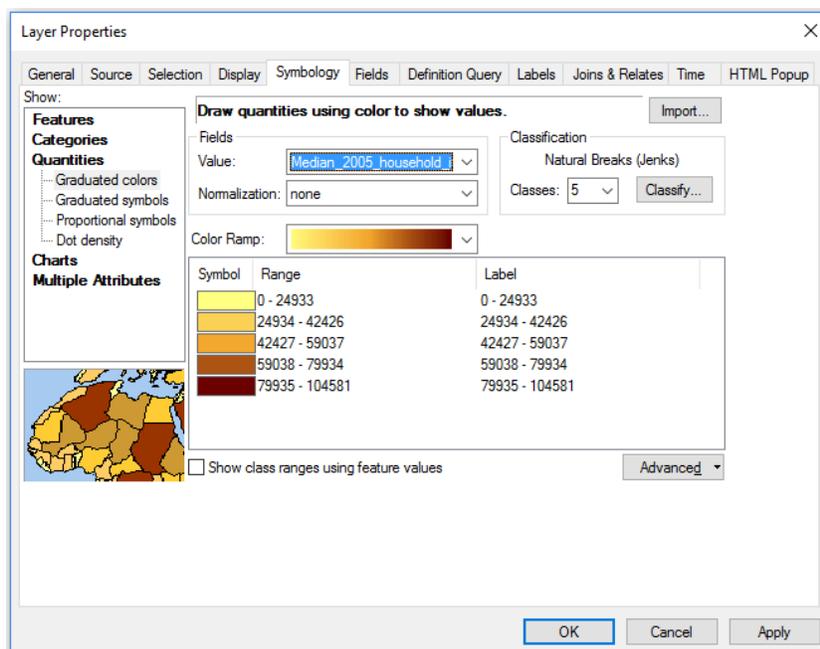
Create a join from the map layer to the layer that contains the related data. If you are unsure how to join layers, see the tutorial **Joining Maps to Other Datasets in ArcGIS**.

Making the map

Right click on the name of the map layer in the table of contents and in the menu choose Properties.



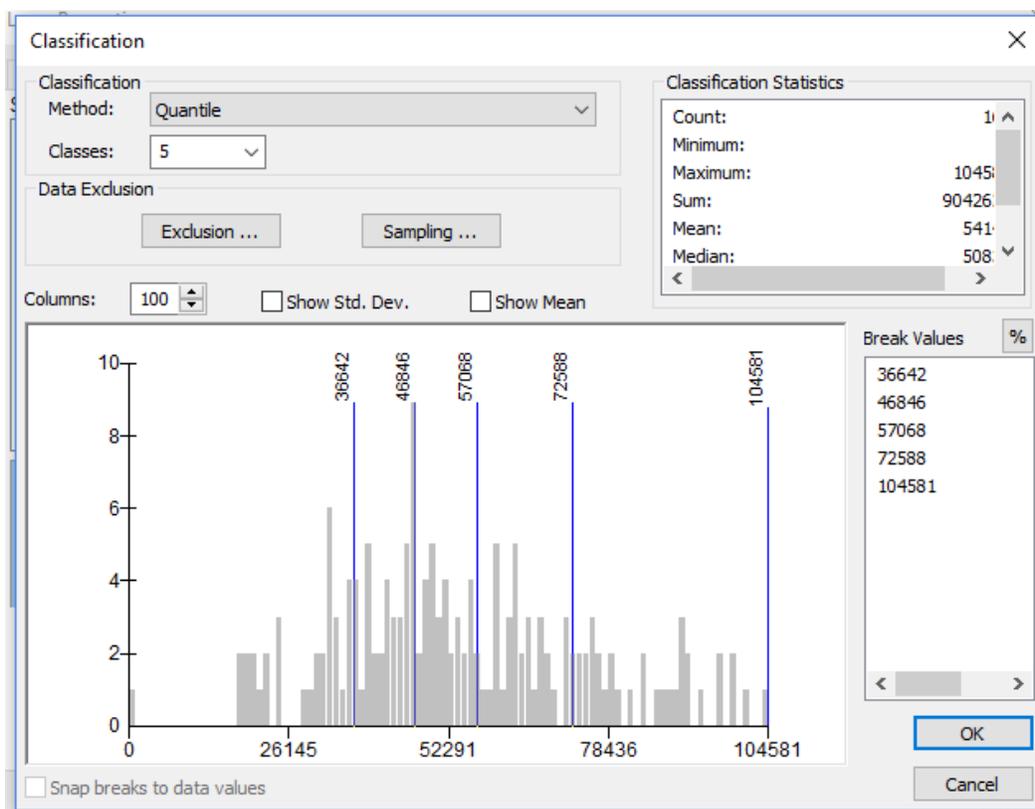
Next, choose the Symbology tab and Quantities. Set the value field to the field from the joined data table that you want to display.



ArcMap defaults to classifying the data using the Natural Breaks method, which aims to create breaks in the data that describe natural groupings in the data. (For more on classification systems see <http://blog.cartographica.com/blog/2010/8/16/gis-data-classifications-in-cartographica.html>). The values are calculated on the fly by ArcMap.

For demographic data such as income data, quantiles can be a straightforward way to display the data as people can see at a glance areas that are in each 20 per cent (quintiles) or each 25 per cent (quartiles) tranche of the total range of values. For our demonstration map, we will use quintiles.

Click Classify, then Quantile.



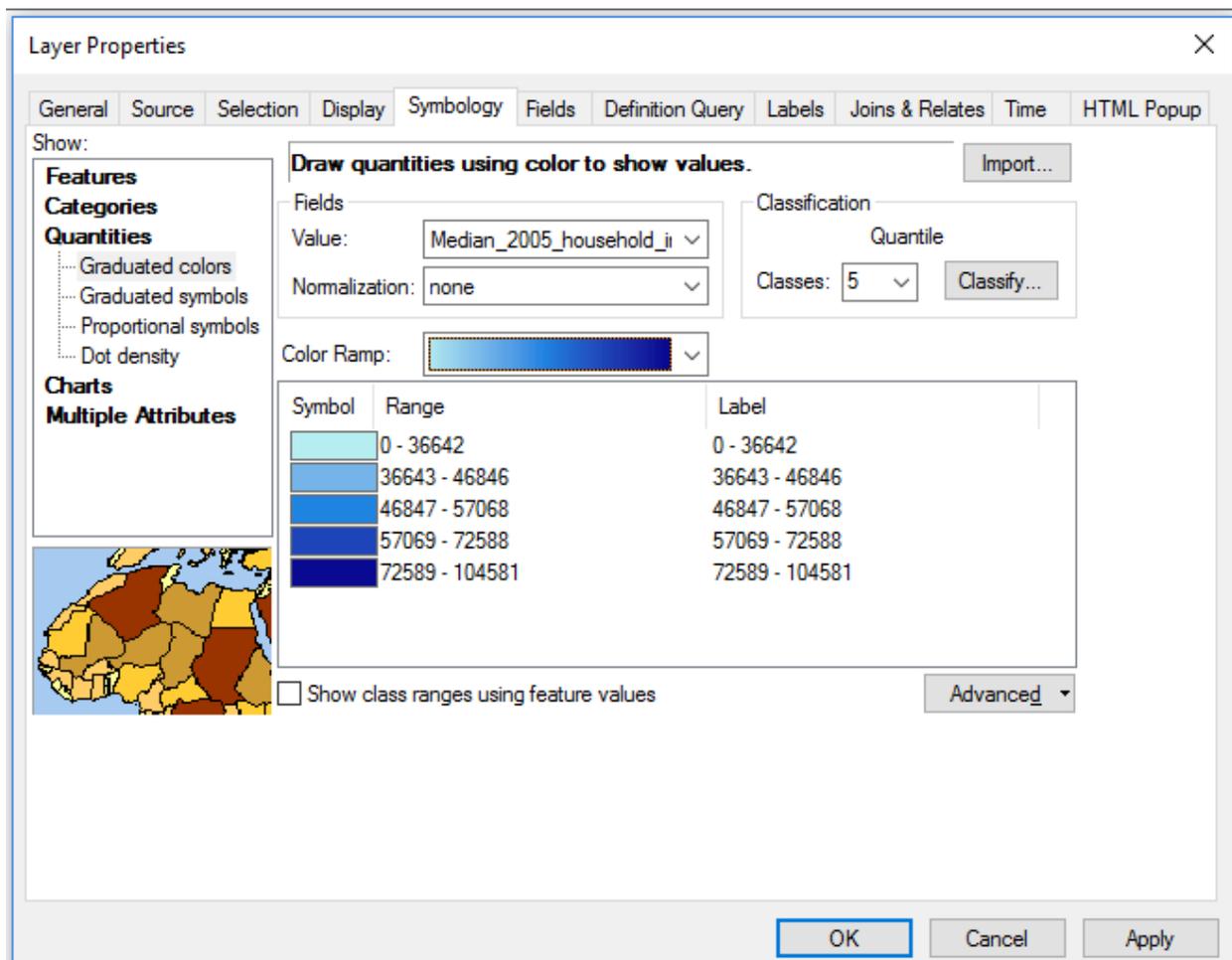
ArcMap displays statistics about the classification, including the mean value, and the values being used for the breakpoints.

Keep in mind that using quantiles will cause the extreme lowest value and extreme highest values to be contained in the bottom and top quantiles. This method does not emphasize the lowest income and highest income areas as effectively as using natural breaks, but has the advantage of being easy to understand. As always, you have to

think about what you are trying to display on the map, and how the choice of breakpoints affects the audience's perception of the data.

When you are done, click OK.

By clicking on the arrow beside the color ramp, you can choose from many possible range of colours. See chapter 6 of *The Data Journalist* for a more complete discussion of choices of breakpoints and colours on choropleth maps. We will choose a range that goes from light blue to darker blue.



When you are happy with the ranges and classification, click OK. The map will be recoloured to the options you chose.

Table Of Contents

- Layers
 - C:\Dataschool16\DataDisk\WpgIncome
 - WinnipegCensusTracts06
 - Median_2005_household_incom
 - 0 - 36642
 - 36643 - 46846
 - 46847 - 57068
 - 57069 - 72588
 - 72589 - 104581
 - C:\Dataschool16\DataDisk\WpgIncome
 - householdincome2006wpg.csv

