

Making 2010 Census Data Spatial

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The Census Bureau's website can be a bit tricky to navigate to locate specific datasets. Here are a few tips and tricks for finding the spatial and attribute data for population and demographic analysis maps based on census blocks.

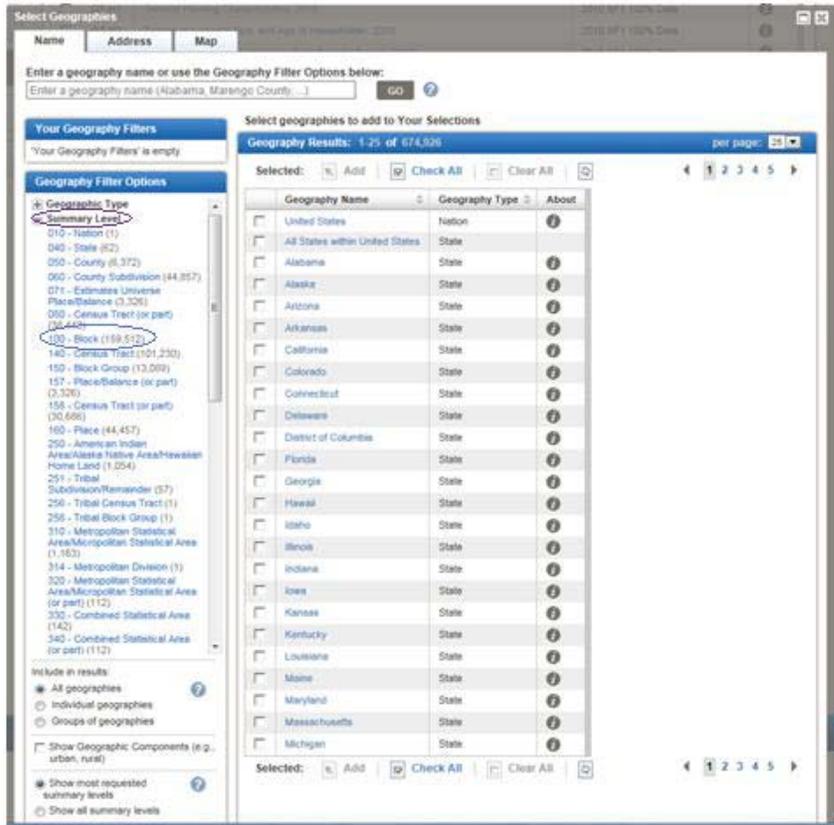
Getting spatial data for blocks- First of all, find out what the five digit FIPS code is for your county. For Kansas, the code will be 20xxx. From this FTP site

(<ftp://ftp2.census.gov/geo/tiger/TIGER2010/TABBLOCK/2010/>), find the file that will read tl_2010_20xxx_tabblock10.zip where the 20xxx identifier is your county's FIPS code. The block data comes in geographic coordinates, so users might want to project the data into their generally used coordinate system.

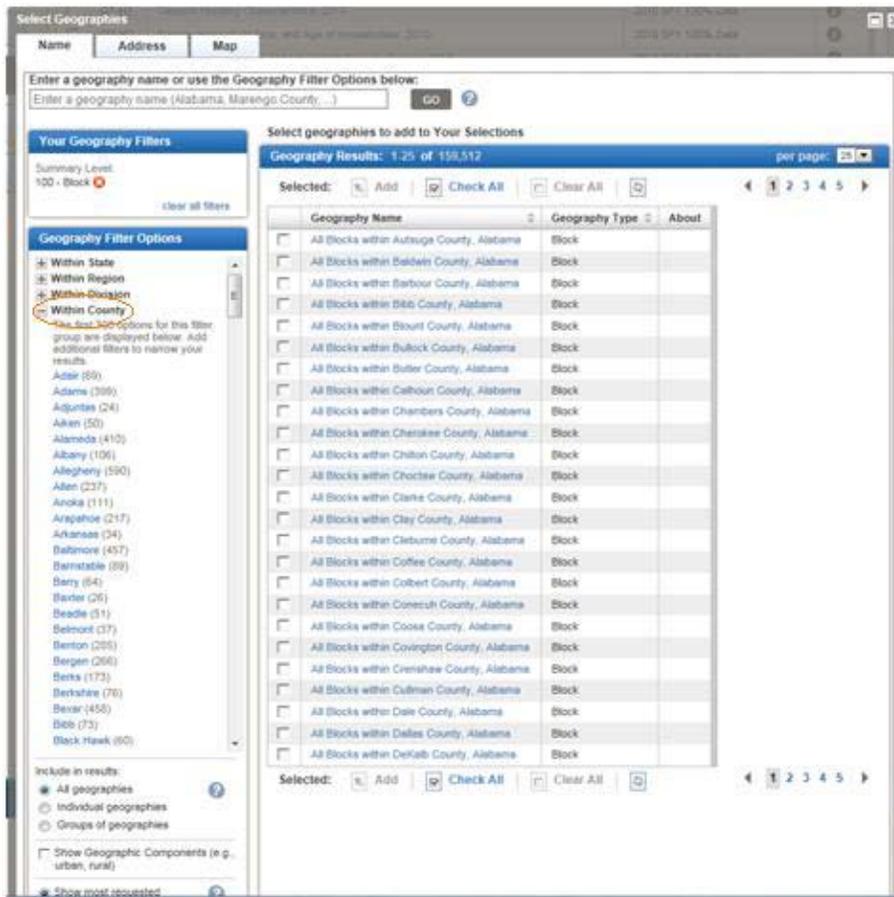
Getting attribute data- From the American Fact Finder (<http://factfinder2.census.gov>), click on the button that says "Geographies" on the left side.

The screenshot shows the American FactFinder website interface. At the top, the U.S. Census Bureau logo and 'AMERICAN FactFinder' are visible. Below the header, there are navigation tabs: 'MAIN', 'SEARCH', 'WHAT WE PROVIDE', and 'USING FACTFINDER'. On the left side, there is a 'Your Selections' panel with a dropdown menu that is currently empty. Below this, there are several expandable sections: 'Topics', 'Geographies (states, counties, places...)' (which is circled in red), 'Population Groups (race, ancestry...)', 'Industry Codes (NAICS...)', 'Legacy American FactFinder', and 'Load Query'. The main content area features a search bar with the text 'Your source for population, housing, economic, and geographic data'. Below the search bar, there is a 'Quick Start' section with a search form and a 'News and Notes' section with several news items. On the right side, there are several informational boxes: 'U.S. Population Clock' showing 311,921,934, 'Reference Maps', 'Address Search', and 'Did you know?'. The footer contains links for 'Privacy Policy', '2010 Census', 'Data Tools', 'Information Quality', 'Product Catalog', 'Contact Us', and 'Home'.

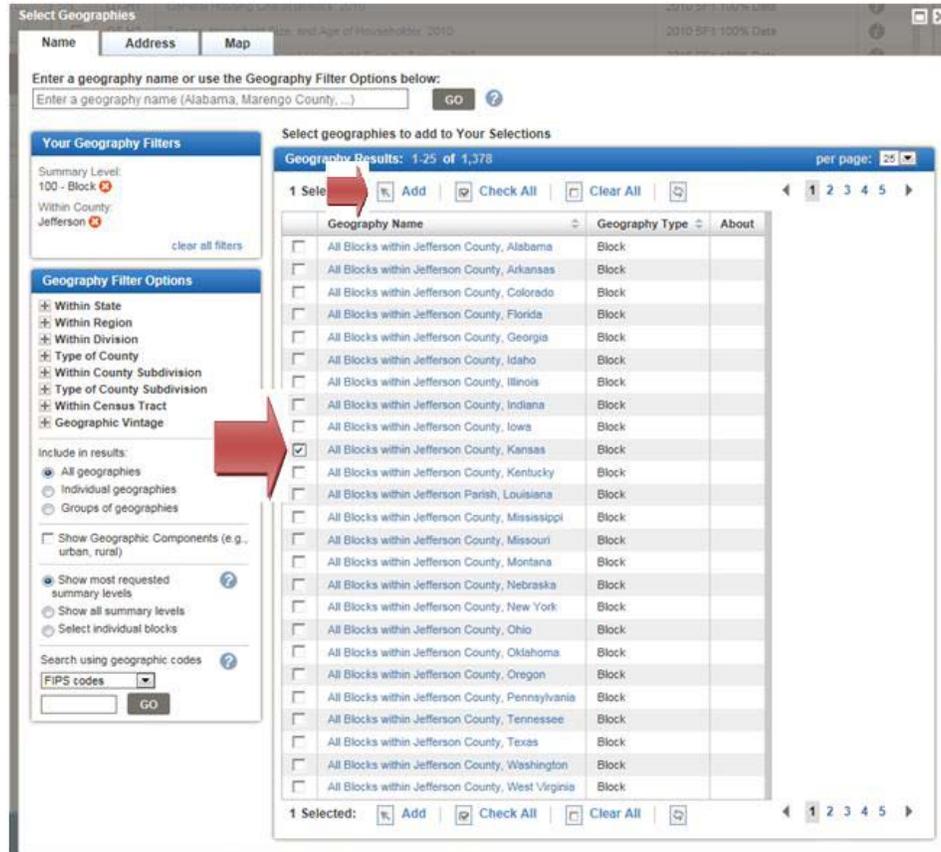
On the pop-up window, expand the “Summary Level” node, then select “100- Block”.



On the next pop-up screen, expand the option for “Within County”.



This will list all of the county names in the United States, but scroll down to and click on your county name, in my case Jefferson. If your county is not listed, click on “Within State”, choose Kansas, and then find your county’s listing. Check the box by the listing for your county, and then click “Add” at the top of the pop-up screen.

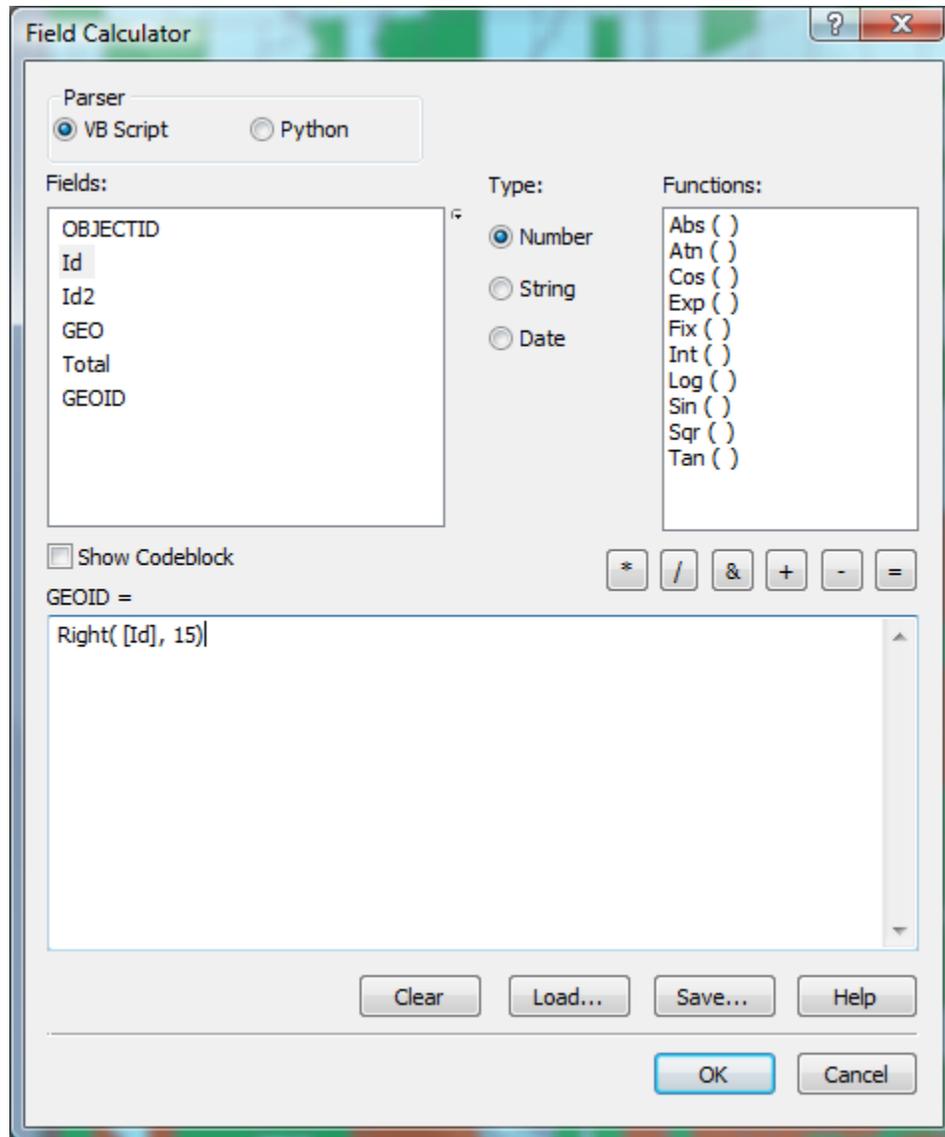


Close the pop-up window and take a look at the datasets available. I wanted a basic population breakdown which I found on page 3. Check the box next to the desired dataset then click the button to download. The data will download in a zip folder containing two text files and a csv file (or more files if you chose to download multiple datasets).

Integrating the attribute and spatial data- Open the csv file in Microsoft Excel. In the data I downloaded, there were two header rows (fine for csv files, not good for tables in ArcMap), so I deleted the top row and maintained Id, Id2, GEO, and Total for my column headings. I would also recommend renaming the worksheet to something more descriptive. Save the file as a Microsoft Excel Workbook. You might notice that the data under column Id2, the block number identifier, is in scientific notation. This presents a bit of a problem since this formatting is preserved in ArcMap, and the block field should be the join between the attribute and spatial data. This will be remedied.

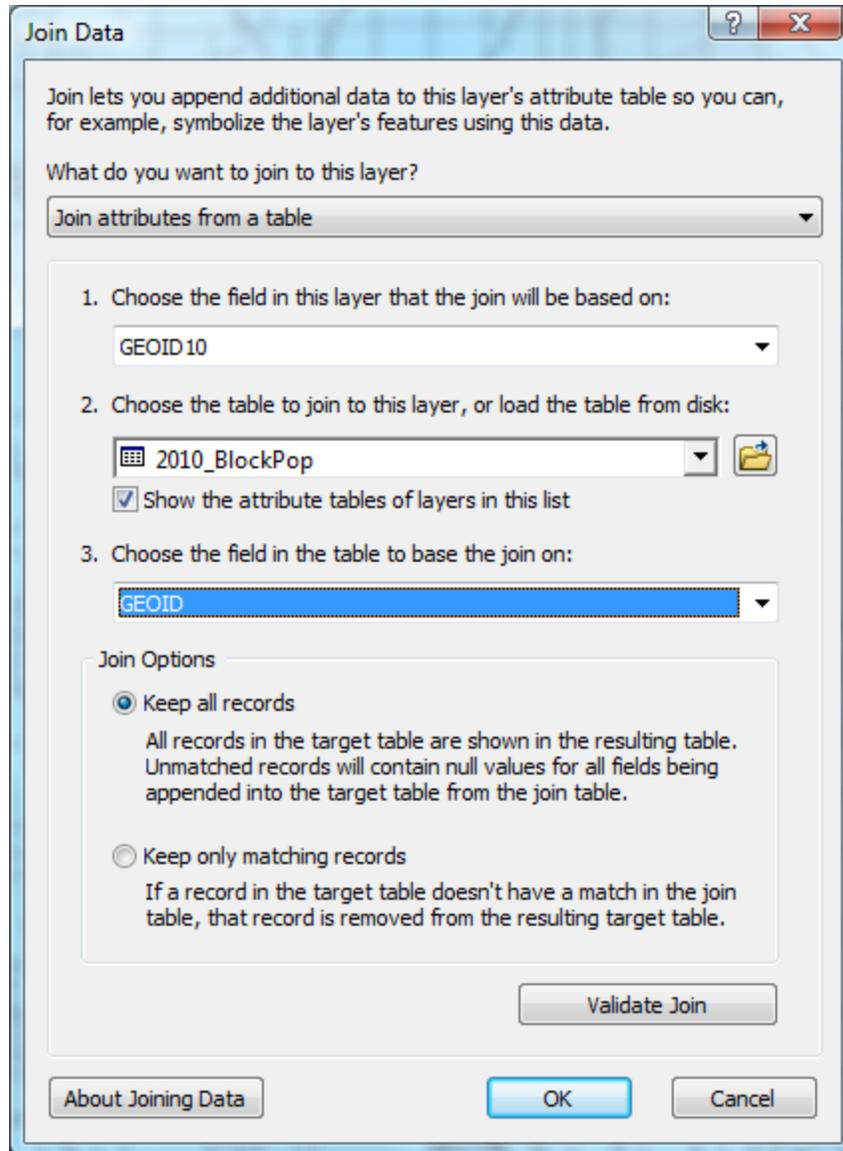
In ArcMap, add the saved worksheet to your map then open the table. Export the worksheet as a dbf or a table in a geodatabase. Add the new table to ArcMap and open it. There are probably several ways to massage the data to get the block identifier to complete the join. Here’s one way.

Add a new 15 character text field to the table, I called mine GEOID. The goal is to populate the new block field based on the 15 rightmost characters of the Id field since those digits are the block ID number. Right-click on the new field header and select “Field Calculator” and enter this statement-
Right([Id], 15)



Click ok, and the field will be populated with the block number.

To join the spatial and attribute data, add the spatial data to your map if necessary. Right click on the block layer in your Table of Contents and choose Joins and Relates, then Join. On the window that opens, make sure to choose the option to join features from an attribute table. Base the join on the field called GEOID10, select the appropriate table to join to, and identify your newly calculated field as the table's join field as in the example.



It might prompt you to create an index, but you don't have to build one. The joined data should then show up when you open the attribute table of or do an identify on the census blocks. The join will only be present in your ArcMap session and will not be saved with the spatial data, so to maintain the attribute data with the blocks, export the joined layer into a new shapefile or geodatabase feature class.

Finally, the data is ready to be used for mapping and analysis!