

Make a Map with ArcGIS Online

<http://www.arcgis.com/home/>

The Make a Map function in ArcGIS Online allows you to make a map that can be viewed in a browser, desktop or mobile device. If you create a free, public ArcGIS Online account you can also save the map, share it on a blog or via email or social media, or embed it in a website.

The steps to making a map are easy: a) Choose an area, b) Choose a basemap, c) Add a layer, and d) Change the symbology.

The layers can be layers that already exist in ArcGIS Online, files from the web or files that you import.

EXERCISE 1 – Make a map using a layer in ArcGIS Online

Let's make a map of Nebraska county borders using a layer available in ArcGIS Online.

1. Open ArcGIS Online: <http://www.arcgis.com/home/>.
2. Select Make A Map.
3. **Choose an area.** Pan and zoom to the area you want to map (use zoom bar, multiple clicks or trackball). Choose your area first so searches for layers will only search for data related to that area. For this exercise, zoom to Nebraska.
4. The main menu contains three important tools: Details, Add and Basemap. Details has a submenu of tools: About, Contents and Legend.
 - a. If the Add function is not visible on the main menu, click on MODIFY MAP in upper right corner.
5. **Choose a basemap.** From the main menu select Basemap. The default basemap is Topographic; there are 11 other types of basemaps. A good basemap for a thematic map is the Light Gray Canvas.
6. **Add a layer.** From the main menu select Add > Search for Layers.
7. Enter your search criteria in the boxes. Enter Nebraska in the Find box. Select ArcGIS Online in the In box. Click GO.

8. Scroll the list of results to see what type of layers for Nebraska counties are already available in ArcGIS Online.
9. Click on any result. A pop-up window appears that tells you more information about the data, along with options to view details, add to the map or use as a basemap.
10. Scroll to NE Counties (Features) by TyWerdel9. Select. Click on Add to Map in the detail window. We now have a map that shows the borders of the counties. We will learn how to change the symbology in the next exercise.

END EXERCISE 1

Save, Print, Share

If you create a free, public account in ArcGIS you will be able to save, share and print your map. You must save your map before you can share it.

- To save, select Save, enter a title and tag.
- To share select Share, check the box to share with everyone (public). Share it in facebook or twitter, or cut and paste the link in an email, or embed the map in a website or make a web application.
- To print select Print. The print view will open in another window. You may need to resize or pan your map image before it will show correctly in the print view. Also the legend does not print.
- Another option to printing is to use the snipping tool to copy the map and legend into a word document or image file for further manipulation like adding a title and source information.

Make a map using your own data files

There is only a very small chance that the data you want to map will already be available as a layer in ArcGIS Online. You can make a map using your own data by adding layers from a file.

Before you add your file it must be in the correct format and must contain all the information you want to map, both the geographic information and the content data. See the next section for information on the types of files that can be used and how to prepare the file.

EXERCISE 2 – Make a map using your own file

Let's make a map of the median value of owner occupied housing units for Nebraska counties. The data is from the 2008-20121 American Community Survey 5-year estimates.

1. Open ArcGIS online at www.arcgis.com/home/.
2. Select Make a Map.
3. **Choose an area.** Zoom to Nebraska.
4. **Choose a basemap.** Choose the Light Gray Canvas basemap.
5. **Add a layer.** From the main menu select Add > Add Layer From File.
 - a. If the Add function is not visible on the main menu, click on MODIFY MAP in upper right corner.
6. Using the Choose File function, browse to the shapefile ZIP folder *Nebraska-counties-median-value.zip* that you downloaded earlier to your desktop. Double-click on the folder.
7. Click Import Layer button. The layer has been added. You will see the counties in Nebraska are now colored. If you click on a county you will see a popup window with the data for that county.

CHANGE SYMBOLOGY

8. **Change Symbology.** To view the median value on the map we need to change the symbology. In the main menu click on Details > Content.
9. Click the small gray arrow next to the filename to open a menu of options we have for formatting the map.
10. Select Change Symbols.
11. For thematic maps we use different colors to symbolize the different categories of data. In the Use box select Color to show different options.
12. The To Show option is the field (or column) that we want to map. Use the drop down menu to select the field you want to map. In this exercise,

Median_Val. Leave the Normalized By option as <None>.

13. Leave By as Natural Breaks. The other choices are equal interval, standard deviation and quantile. There is no user defined option.
14. Change With to 3 classes. You can have up to 10 classes.
15. Change Color to some other color scheme (your choice).
16. Click Apply. You will see that the categories of data are now displayed on the map.

ADJUSTING SYMBOLS AND LABELS

17. You can change each symbol's label or color by clicking on the symbol name. Click on each symbol and add dollars signs and commas to the labels.
18. Click on Change Symbol button. Change some of the attributes. You can change the transparency, the color, the outline color and outline thickness. Click Apply to see how the change will look. When you are done changing the symbol attributes click Done to close the Change Label and Symbol menu.
19. When you are done editing all the symbols, click Done Changing Symbols at the bottom of the Change Symbol menu window to return to the main menu.
20. You can also change the name of a layer. Click the gray arrow next to the filename and select Rename. Enter "Median Value of Owner Occupied Housing, 2008-2012" in the Layer Name box. You will note that there is a limited number of characters allowed. Click OK.
21. You can create or adjust labels on the map. Click the gray arrow next to the filename and select Create Labels [or Manage Labels if you are changing the labels]. The Label Features menu allows you to toggle labels on and off, select the fields you want to use for the labels and the attributes of the label text. The labels default to the name of the counties. To add or change which fields are used for the labels click the plus sign to the right of the Text box, then select the field you want. If not all the counties are labelled you may have to adjust the text size until they fit. When you are done adjusting the labels, click OK.

22. From the main menu, click the Legend function. You will see your label and name changes there.

VIEWING THE DATA TABLE

23. You can view the data table. From the main menu, select Details > Content. Click on the gray arrow next to the filename and select Show Table. The table will appear below the map.

24. To make the table more user-friendly you can make some adjustments to the table. You can show only selected records, center on the selection, clear selection or hide/show columns. In the upper right corner of the table open the Table Options menu. Select Show/Hide Columns. Unclick all the fields except for NAMELSAD10 and MEDIAN-VAL. Click outside the drop-down menu to close it. Now you see that only the county names and median value show on the table.

25. Close the data table by clicking on the X in the upper right corner of the table.

END EXERCISE 2

These are the basics for using the Make a Map feature of ArcGIS Online.

EXERCISE 3 – Make a map using your own data file

Let's make a map of the Unemployment Rates for Persons Aged 16 Years or Older for Nebraska Legislative Districts, 2008-2012.

1. Choose an area.
2. Choose a basemap.
3. Add a layer. Use *16+unemployment_leg_districts.zip* file.
4. Change the symbology.

END EXERCISE 3

Questions?

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Prepare a File for Use with ArcGIS Online

A list of the types of files, applications and services that you can add to ArcGIS Online can be found at:

<http://resources.arcgis.com/en/help/arcgisonline/index.html#//010q000000m000000>.

The most common type of files are data files and shapefiles.

To create the file to use with ArcGIS Online you will combine two files of information: a shapefile and a data file. **The records in these two files must have a one-to-one relationship with a common key field so they can be combined into one database file.**

Shapefiles for most geographies can be downloaded as a ZIP folder from www.census.gov. See the next section for instructions on how to download a shapefile.

1. Use a zip application, like ZipGenius or 7-Zip, to extract the 5 files from the shapefile ZIP folder: DBF, PRJ, SHP, SHP.XML, and SHX.
2. Open the DBF file. Look for the column with the key field and use the sort function to put the records into some type of order.

Working with a DBF File

You can open and save DBF files in Excel 2003.

Microsoft Office 2007 and 2013 no longer support the DBF format.

There are Excel 2007 or 2010 add-on you can purchase (e.g., <http://thexlwiz.blogspot.com>). There are also several free XLS to DBF converters available online.

OpenOffice Calc supports opening and saving DBF files. OpenOffice can be downloaded free at www.openoffice.org.

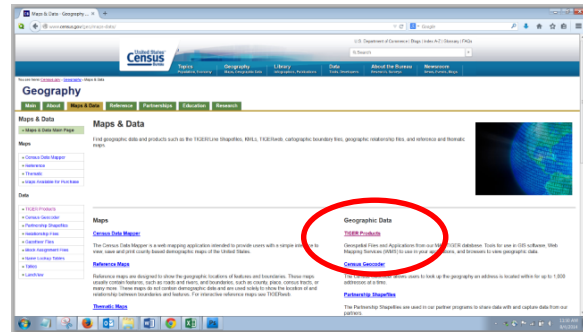
3. Open the file containing the data you want to map. Look for the column with the key field. Use the sort function to put the records in the same order as those in the DBF file. This will assure when you copy this column into the DBF file the correct data is associated with the correct geography.
4. Highlight and copy the column of information you want to map from your data file.
5. Paste the column of information into your DBF file.
6. Save the DBF file with the same name.
7. Use the zip application to archive the 5 files into a ZIP folder. This is the file you will add as a layer.

Download a Shapefile from www.census.gov

This demo is for the shapefile ZIP folder for 2010 Nebraska counties.

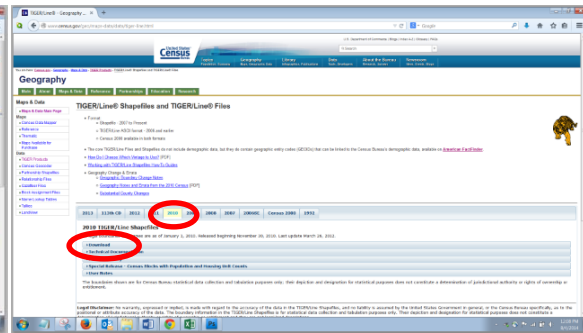
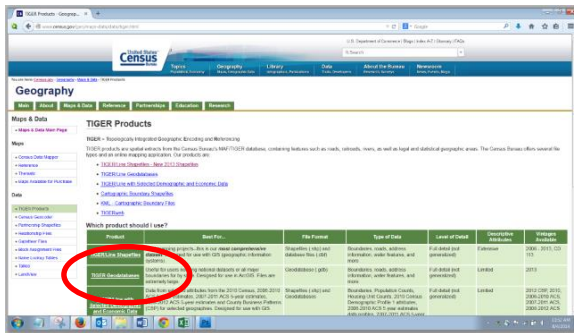
From the homepage, select Geography > Maps & Data.

From the Maps & Data page, select TIGER Products



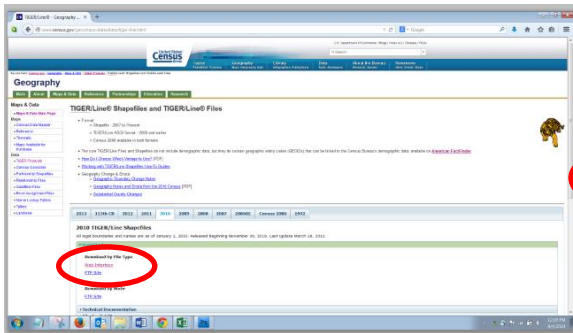
From the TIGER Products page, select TIGER/Line Shapefiles.

From the TIGER/Line page, click on the tab for the year you want. Then select Download.

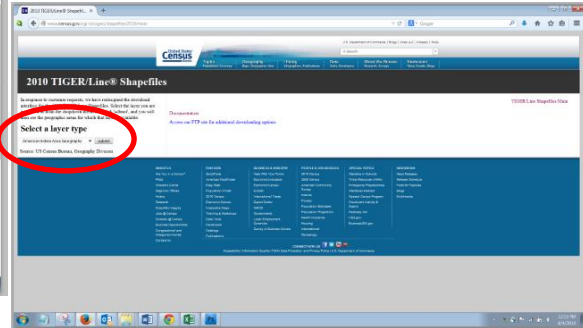


County shapes do not change often so we can pick the most recent Census year (2010). Census tracts, legislative districts and city boundaries change on a regular basis, so make sure the year of your shapefile matches the year of your data.

Under Download, select Web Interface.

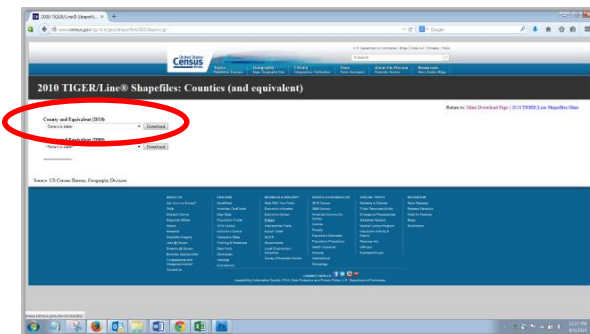


On the 2010 TIGER/Line Shapefiles page, select the layer type Counties (and equivalent). Click Submit.



Depending on what year you selected different options or a different series of selection menus will appear.

On the County and Equivalent (2010) drop-down menu select Nebraska. Click Download.



When asked what to do with the file, select Save.

