

## ArcGIS Online (AGOL) Quick Start Guide – Fall 2018



**ArcGIS Online (AGOL)** is a web mapping tool available to UC Merced faculty, students and staff. The Spatial Analysis and Research Center (SpARC) provides access, training and tutorials for this application.

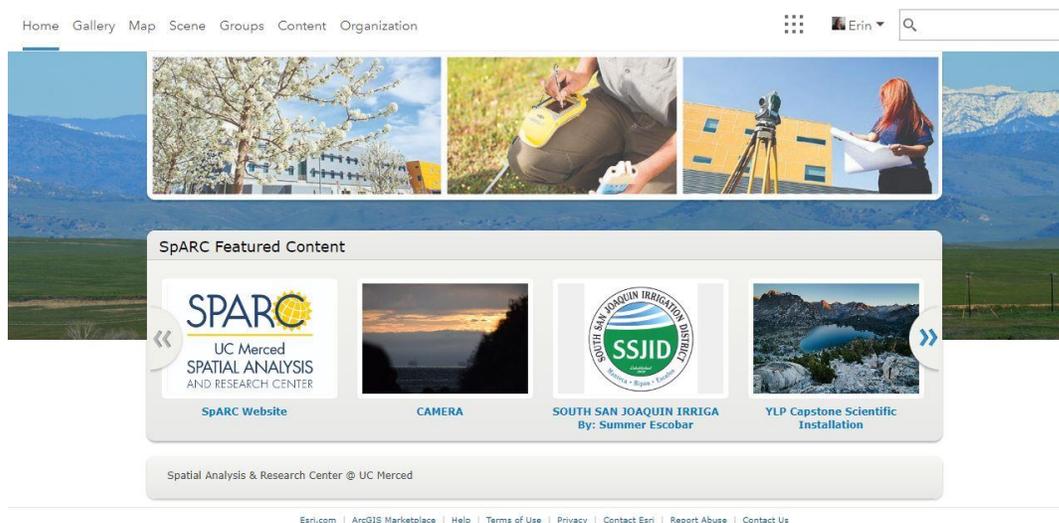
! → This exclamation mark symbol means “Important!”

This Quick Start Guide is intended to give you a **brief overview** of how to create a map on AGOL. It is highly recommended that you also go through the AGOL Tutorial “[Get Started with Map View](#)” before continuing (takes about 1.5 hours to complete). <https://www.esri.com/training/catalog/57660c48bb54adb30c94540a/get-started-with-map-viewer/>

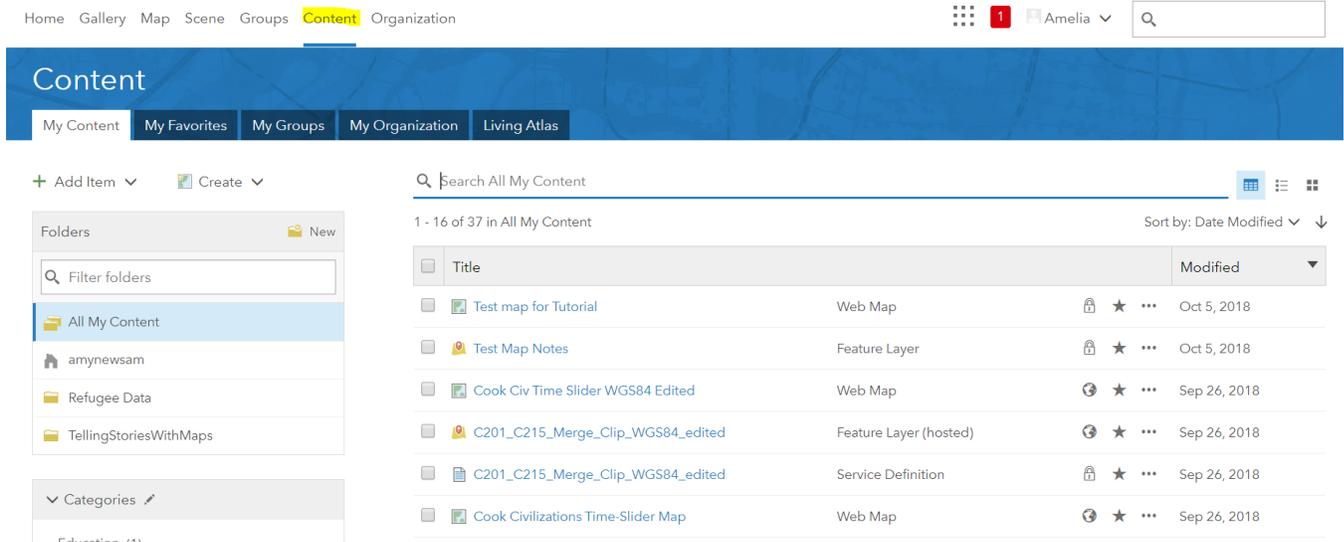
If you become confused and can’t come in for help, go ahead and **google it** or go to <https://community.esri.com/> and search for questions. You will likely find someone else has posed a similar question and others have answered it.

! First you must sign up for AGOL account through SpARC, which requires that you come into the SpARC lab (SSM 209) and have a staff member sign you up. (Hrs: T-Th: 10-5, F: 10-2) **Remember to bookmark the url so you can easily access it again.**

1. After you’ve signed up for your account in the lab, sign on to AGOL. ([ucmerced.maps.arcgis.com](http://ucmerced.maps.arcgis.com)) and it will open to your Organizations page:



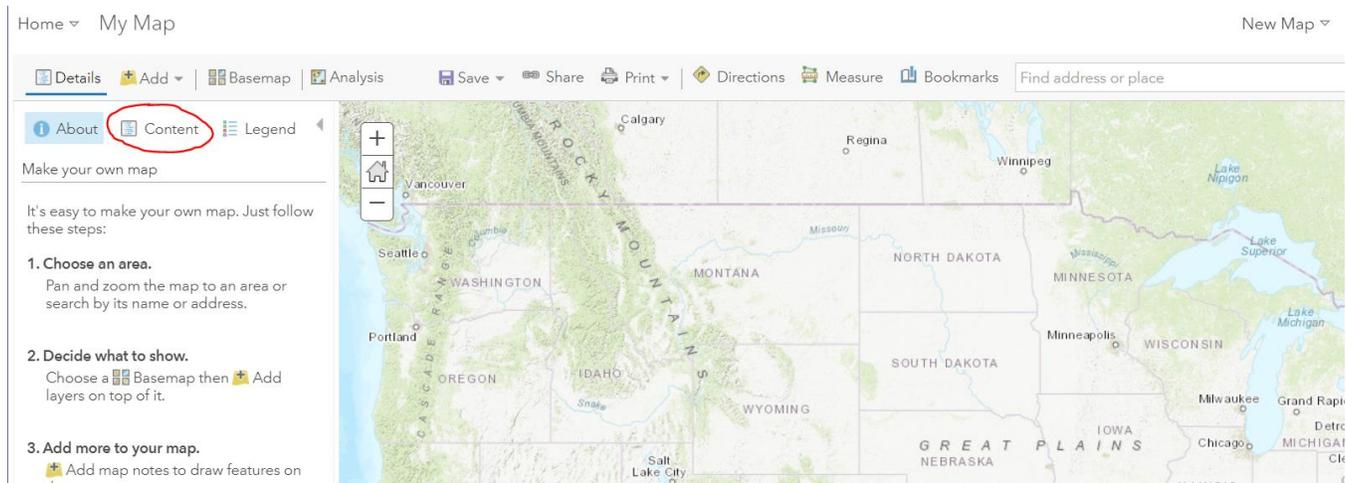
- In the menu bar at the very top (Home - Gallery - Map - Scene - Groups - Content - Organization) click on **Content**. This is where all of your content will be displayed, including web maps, feature layers, etc. You'll learn what all these things are later, but just be aware that both your maps and your data that you use in your maps will be listed here. (You probably won't have anything listed yet.)



- Click on the **Map** tab.



This will open a new map:

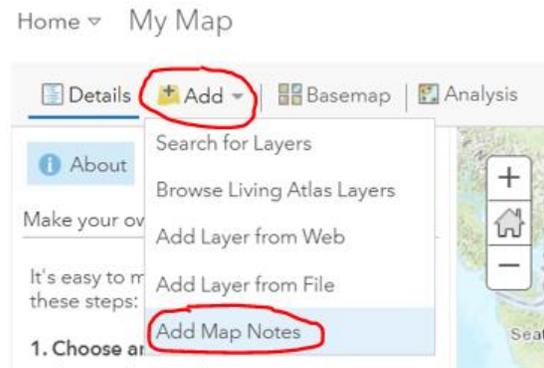


- Read the Steps provided on the left-hand side of your screen to help you get started, then explore the various tabs and menus to see what they do.

**!** Notice that you have a button titled **Content** – this displays the content of the *map*. It is different from the Content window you had open previously which contained all the things you have stored on AGOL, *including* maps.

- A Basemap (background map) will automatically be provided (you can change it in the Basemap menu).

- Go ahead and try entering an address in the search bar at the top right-hand of the map (“Find address or place”). It will zoom to the location and give you the option of adding it to your **Map Notes** (a type of data file that you create interactively in the map -- see “What is data?” below for more information). You can also create a Map Notes layer by clicking on the “Add” tab and selecting **Map Notes**.



There you will be able to choose various options for adding data (you can add points, lines, or areas).

-  If you make any changes you want to keep (add data, change your scale or location, etc.), remember to save the map by clicking **Save** in the top menu bar before leaving the map!

## What is Data?

Data is the **information that you want to illustrate** in your map. For example: specific locations; counts, ratios, or percentages by state or county; or categorical names, such as “democrat”, “Republican”, and “Independent”.

You can add three kinds of **data files** to your map contents: **feature layers, tables, and Map Notes**.

**Feature layers** contain **spatial data** (geographic coordinates) that draw points, lines, or polygons on the map. You will most likely be using feature layers (also called **shapefiles**) found online. Government web sites will have polygon layers with state, county, and census tracts boundaries that you can download.

**Tables** contain no associated spatial coordinates, so the only way to display this data is to either join it to a layer which DOES have spatial data (a feature layer) OR provide addresses in the table which can be *geocoded* by AGOL automatically to create a layer of points.

**Map Notes** are a type of feature layer that you create interactively *within* the map (as opposed to uploading a file from your computer). You can create points, lines, or areas, but you can’t symbolize them by categorical information like you can with normal feature layers. **This is the easiest way to add data if you just have a few features and don’t need a legend.**

## Map Notes

Map Notes is the way to add data if you only have a few features and you don't need to categorize them in any way or have a legend. It's mostly for creating **descriptive maps**, not statistically predictive maps.

Here is a Youtube video tutorial on how to add [Map Notes](#) - 5 minutes long.

<https://www.youtube.com/watch?v=NJfJt1W-jSs>

And another one with some [Additional info](#) (6 minutes).

<https://www.youtube.com/watch?v=MAEXrMXjArg>

And here is the [ESRI help page](#) on feature layers, including map notes (scroll down to see Map Notes, and click on “adding a map notes layer” to see more.) <https://doc.arcgis.com/en/arcgis-online/reference/feature-layers.htm>

Directly following the first Youtube video is another that shows how to [add photos](#) to your Map Notes. <https://www.youtube.com/watch?v=Lu3mE6UWssA>

**Editing Map Notes** is done feature by feature, so if you want to be able to change the symbology globally, or create categories of symbolization based on the data you are displaying, you will need to add the data in a CSV file (with addresses to be geocoded, or information that allows it to be joined to a shapefile).

Considerations for adding map notes (<http://enterprise.arcgis.com/en/portal/latest/use/map-notes.htm>)

- Only you, the map author, can save edits to the layer.
- Map notes layers do not contain legend information.
- You can [set the visibility range](#) for when your map notes layer is displayed on the map.
- Make edits to an existing feature by clicking inside the symbol on the map. This reopens the pop-up.
- Change the size of an existing symbol by dragging the vertices that appear on the shape.
- Remove a feature from your layer by clicking inside the feature to reopen the pop-up and clicking **Delete**.
- Hide all features associated with a layer by clicking **Details**, then **Contents**, and unchecking the box to the left of the layer name.
- Remove a layer by clicking **Details**, then **Contents**. Click the layer, click **More Options** and click **Remove**.
- The Disasters, General Infrastructure, and Damage templates include humanitarian icons from the [United Nations Office for the Coordination of Humanitarian Affairs](#). Source: OCHA.



- b. You must have one field that contains the same identifying data as in the target layer. This is the field you will use to direct the program to match up the new data to the correct features. Look in the shapefile table to see if there is a **unique identifier field**, such as “State” which will have **unique values for each feature** (there cannot be two features with the same value in this field). Then be sure you have the same field name, with unique values, in your CSV file – this is how the app will know which row in the CSV file to add to which feature in the shapefile.
- c. **Field names cannot contain spaces or special characters**, only alphanumeric characters and underlines, and must start with a letter.
- d. The field name must also be **no more than 10 characters long**.
- e. Here is an example of a simple table in the correct format:

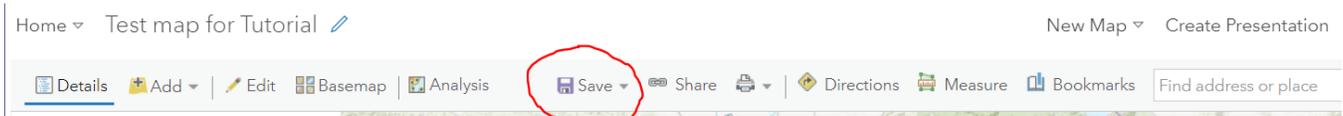
	F	G
1	COUNTY	RefArv2013
2	Alameda	63
3	Alpine	9
4	Amador	56
5	Butte	3

The “COUNTY” field is the unique identifier field, which will be used to match the data in the “RefArv2013” field to the county outlines in the shapefile. Remember, you do not need the field in your shapefile to have the same name, just the same data. You will be able to choose which fields to match up regardless of their names.

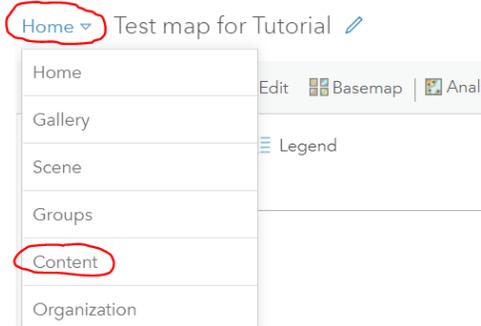
- 4. Finally, save the file as CSV (comma Delimited): Click on **File**, drop down to **Save As**, then browse to where you want to save it, enter the file name, and then click the drop-down menu next to **Save as Type**: and select **CSV (Comma Delimited)**.



Remember to **save your map** before navigating out of the map (to your Content page, for example).



Navigate to your Content page (Click on the **Home Button** at the top left side of the screen, drop down to

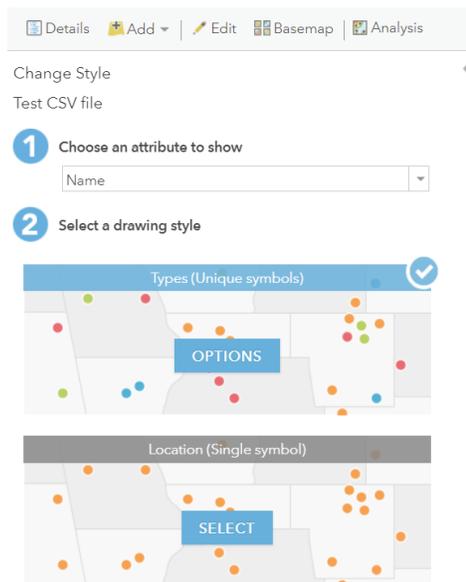


**Content**). You will now see at least two items – one will be your web map, and the other will be your map notes feature layer (if you created one). You won’t see your CSV file – **tables don’t show up in Contents** but if you remembered to save your map, you should see your states layer listed. You can open the map up again by clicking on the name, and then clicking on the thumbnail image to open in Map Viewer. If you forgot to save, just click the back button to get back to your map.

## Upload and Join CSV to Layer

1. In your map Contents pane (in the map), click on the **Add** drop-down menu and select **add layer from file**. Browse to your file and select **Import Layer**.
2. A dialog box will prompt, **locate features by**: If your table contains addresses and you would like AGOL to geocode them for you (create a points layer), select **Addresses or Places**. If you **do not** have addresses, or do not want the points to be automatically added to the map, select **None, add as table**, and then click **Add Layer**. It will now show up in your Content pane.

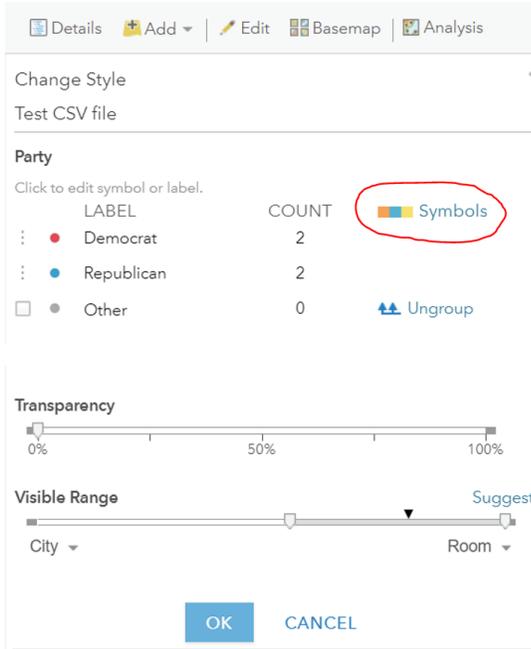
**If your table contains addresses**, and you selected **locate features by Addresses or places**, you will be taken directly to the **Change Style** pane (also known as **Symbology**) to choose how you would like to symbolize the data.



First you are asked to **Choose an attribute to show**. This is the field that contains the data that you want to display.

Then you will **Select a drawing Style**.

Home ▾ Test map for Tutorial 

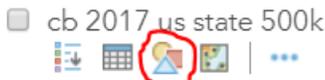


Click on the **Symbols** menu (circled in red) to see the different options you have.

You can also select a level of **transparency**, and a **visible range** (at what *map scale range* symbols show up).

 Be sure to click on **OK** at the bottom of the pane before leaving the pane **or your selections will be lost!**

When you are back in the *Contents* pane, roll your cursor over the list of icons below your new layer to see what they do. You can go back and change your symbology by clicking on the **Change Style** icon.

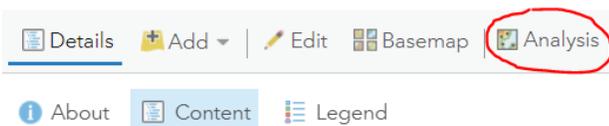


**If your file DOES NOT contain addresses**, you will want to **join it to a layer that does**. You will need to find a layer online that contains the geometry you need, such as state or county polygons. You can find such shapefiles for the state of California at: [CA.gov Open Data Portal](https://data.ca.gov/dataset/ca-geographic-boundaries)

<https://data.ca.gov/dataset/ca-geographic-boundaries>

(Review **How to Add a Shapefile** on page 4 if you need help.)

Once you have the appropriate layer/shapefile in your map *Contents* pane, you can join the table to it as follows: Click on the **Analysis** button.



From the Drop-down menu, click on **Summarize Data**, and then **Join Features**.

1. Select your **Target layer** - the layer you want to join the new data to (the one with the geographic coordinates).
2. Select the **Layer to join to target layer** -- the CSV data you want to add to the map.
3. Select the **Type of Join** by doing the following:

Click on **Choose the fields to match** and select the relevant fields from both drop down menus.  **You do not need to have matching field names to join**, so long as the data in the fields match up. The field name isn't relevant, just the data in the field.)

Leave the Join Operation as **Join One to One**. This means that for each feature in the target layer you have only one row of data to add to it. (Click on the small *i* next to the join operations to see more info on each.)

Change the name to something that will let you know what the file is – probably best to leave the term “join” in the name to remind you of what it is.

Click **Run Analysis** at the bottom of the pane.

You will now see the new layer at the top of your Contents pane.

**Be sure that the original layer is no longer displayed (uncheck the box) and your new join is displayed.**

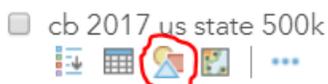
Open the attribute table and see how the new data has been added to the features. Now you can choose the relevant field to symbolize.

 **Always remember to save your changes**, both at the bottom of the **Change Style** pane (click **Done**) and in the map (click the **Save** button at the top of the map).

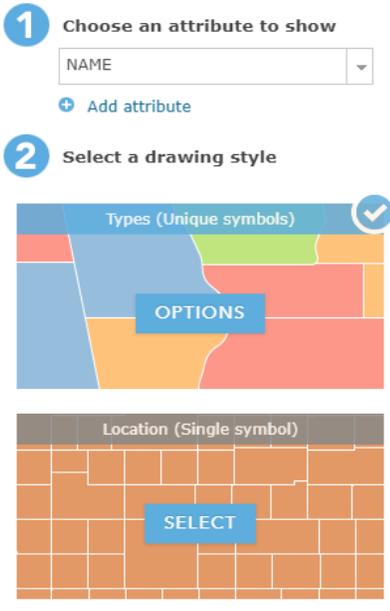
### Symbolizing Polygon Data

If you are displaying data mapped onto polygons, such as the US states in the previous choropleth map of political party control, you will have more options, depending on the type of data you have.

Click on the **Change Style** icon beneath your **join** layer to see what options are available.



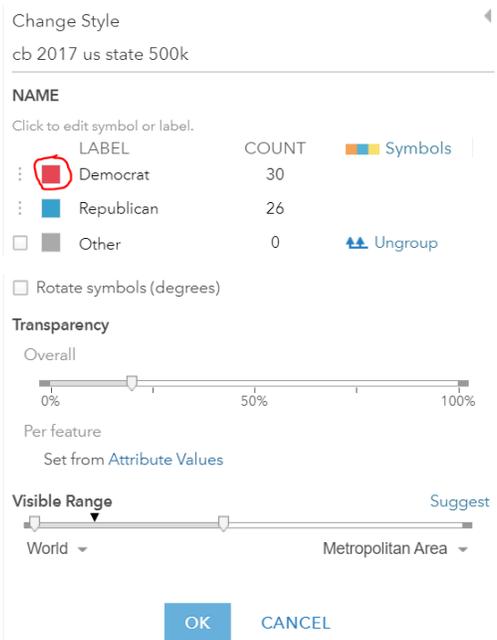
Now your **Change Style** pane will look something like this:



**Number 1** in the pane asks you to **Choose an attribute to show**. A drop-down menu allows you to choose which attribute (a single “field” or column of data) in the layer you want to symbolize.

**Number 2** asks you to select a **Drawing Style**. Your options will depend on the type of data in the field you chose in step 1. Typically, text data (**categorical data**) will allow you to choose from **Types (Unique Symbols)** and **Location (Single symbol)** as seen in the illustration above, while continuous numeric data will allow you to choose from three options: **Counts and Amounts (Size)**, **Counts and Amounts (Color)**, or **Location**. “Drawing style” means the same thing as *symbolology*, it is how you represent the variation in the data on the map -- either by symbols that vary in shape and size, or by the color of the relevant areas.

In the **Types (Unique symbols)** box, click on **Options** to open up the pane seen below.



Click on a **color patch** next to a label to change the color. You can also change the **transparency** of the layer, which is useful if you want to be able to see features below the symbology, and the **visible range** of the symbology, which means that the symbology will only be visible within a specified range of **map scales**.

**!** IMPORTANT NOTE: if you choose to **Remove** the layer (one of the options in the ellipsis menu), you will lose all the symbology you have created. **Symbology is only saved IN THE MAP, not in the layer**, so when you remove the layer, all the symbology is lost.

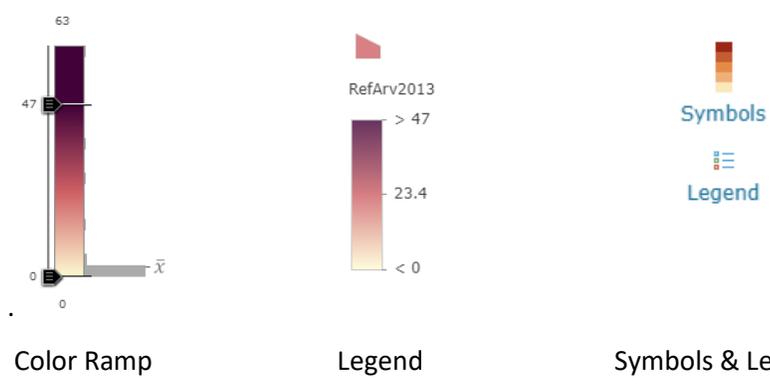
The example below would be **available for numerical data** and uses a **color gradient** to symbolize a range of numbers.

You can click on the **Symbols** icon to change the color ramp and transparency.

The **Divided by** option allows you to create a **ratio** if you wish.

(Note: the convention is that only ratio data (*not* count data) should be used in choropleth maps, but the most important question is how well the map illustrates the message you want to convey. As long as you make clear what data is being depicted, by providing appropriate units of measure in your labels and titles, and your symbology is not misleading, you should feel free to use whichever symbology you prefer.)

You can click and drag the handle on the **color ramp** to change the top value in the legend.



Check the **Classify Data** checkbox to change the symbology from a continuous scale to a discrete classification. You can also select a different method of classification or a different number of classes, and you can round the break range. You can also click on the scale handles and drag them up and down to change the break points. Search the ESRI help pages online for more information. The option **Draw features with out-of-range or no value** is only relevant when you have data with **empty fields**.

With **Classify Data** checked, you can now click on the Legend icon to edit the legend. You will see the changes you make in the class labels show up in the map legend as you make them. (notice that the legend icon has changed to **Classes** - click it to return to your classification scale.)

“Transparency” changes the layer’s transparency, which is helpful if you want features from the base map or another layer below to show through, and “Visible Range” allows you to hide the layer when zoomed in or out beyond a specified range.

This has been a lot of information to digest. SpARC encourages you to continue exploring and experimenting with AGOL and to Google terms and concepts you don’t understand. **We are here to help!**