Performing Analysis in ArcGIS Online

This document contains step-by-step instructions on how to use the 'Join Features' analysis tool in order to create a choropleth map.

The **Perform Analysis** function on ArcGIS Online allows users to access a range of virtual tools that make analysis and measurement of geographic relationships possible. This is useful as maps are used to identify patterns and relationships, assess trends, and make decisions. This is called spatial analysis.

In this instructional document, you will learn how to use some analysis tools in order to create simple, yet useful, manipulations to your data in order to identify patterns and relationships, assess trends, and make decisions.

NOTE:

Performing Analyses will use your organisational credits. Administrators can manage credits in a number of ways including allocating specific quantities of credits to each member. Administrators can also monitor their members' credit usage through dashboards, charts and reports.

If your organisation is part of the GIS for schools program, it will begin 30,000 credits. If credits are managed well, this will be a substantial amount.

Making a choropleth map with the 'Join Features' analysis tool

A choropleth map is a thematic map that uses different colours and shades to represent statistical data. A choropleth map is split into a geographic area (country, city, region or statistical area).

Normally, you would need to locate your data, clean your data in a spreadsheet and then save that spreadsheet as a CSV file so that ArcGIS Online is able to import it. For training purposes, pre-prepared data has been located, cleaned and saved in a CSV file.

1. Download the pre-prepared .csv spreadsheet titled *Training – Choropleth maps*, which is available on the same webpage you accessed this guide. Save it to a location on your computer that you can easily access.
2. In a new map, select **Add Layer from File** and browse your computer for the pre-prepared spreadsheet. **Import Layer**.
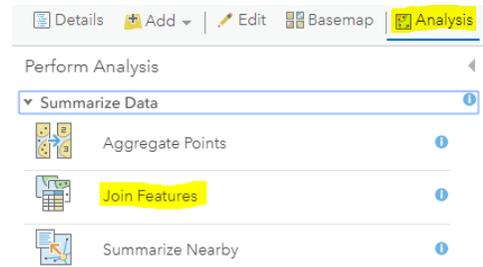3. The **Change Style** function will come up. Press Cancel.

Once your data is imported, it is time to find a suitable map that your choropleth can appear on. As the training data involves cases of Malaria in African countries, it would be pertinent to find a map layer that is at a 'country' scale.

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4. Go to **Add**. Choose **Browse Living Atlas Layers**.
5. Search 'World Countries'.
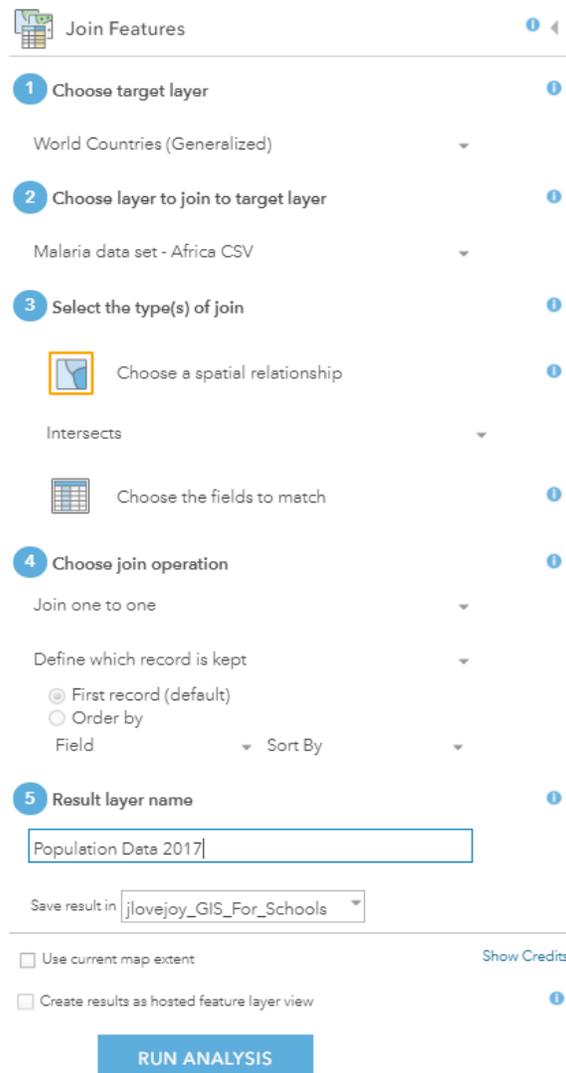6. Select the option titled 'World Countries (Generalized)' by pressing the ⊕ icon.

World Countries (Generalized)
by Esri
Updated: 3/4/20

Now it is time to perform analysis and join these two layers together.

7. Go to **Analysis**. Choose **Summarize Data**, then **Join Features**.

Details Add ▾ | Edit Basemap | Analysis

Perform Analysis ◀

▼ Summarize Data

Aggregate Points

Join Features

Summarize Nearby

Follow the following steps:

1. Choose 'World Countries (Generalized)' for your target layer.
2. Choose your data set as the layer to join to the target layer.

3. Select **Choose a spatial relationship**.

4. Leave this option as **Join one to one**.

Join Features

1 Choose target layer
World Countries (Generalized) ▾

2 Choose layer to join to target layer
Malaria data set - Africa CSV ▾

3 Select the type(s) of join
Choose a spatial relationship
Intersects ▾
Choose the fields to match

4 Choose join operation
Join one to one ▾
Define which record is kept ▾
● First record (default)
○ Order by
Field ▾   Sort By ▾

5. Give your layer a suitable name. In this case, there is population data in our original spreadsheet and this choropleth will display population data.
6. Uncheck the box for **Use current map extent**.
7. Press **RUN ANALYSIS**.

5 Result layer name
Population Data 2017

Save result in jlovejoy_GIS_For_Schools ▾

☐ Use current map extent   Show Credits

☐ Create results as hosted feature layer view

RUN ANALYSIS

It may take a short moment to complete the analysis function.

At this point in time, your new 'Population Data 2017' layer should look like this image:


Now it is time to style your new feature layer so it appears as a choropleth map.

8. Ensure the 'Population Data 2017' layer is checked. Hover over the name and select the **Change Style** icon.

9. From the drop-down menu, choose the data you wish to display. In this case you will choose the 'Population_2017' attribute.

10. Select **Counts and Amounts (Color)** and then click **OPTIONS.**

11. You can change the scale of your data classes by either sliding the black arrows on the column bar, or by selecting **Classify data**.
12. You can change the colours of the map by selecting **Symbols**.
13. You can invert colours by selecting **Invert**.
14. If you have classified your data, you are able to customise what your legend says. This will only appear if you have **Classify Data** selected.
15. Change the transparency for the layer by dragging the slider.
16. When you are done, press **OK**. Then press **DONE**.
17. You can go back and **Change Style** at any time.
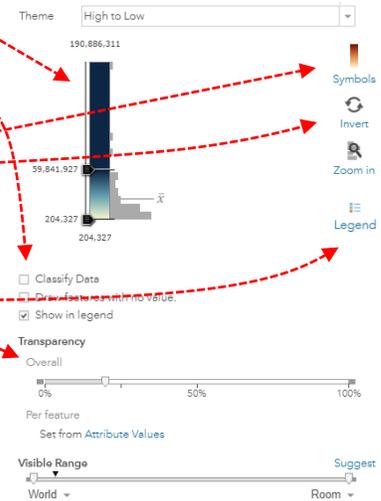
Your choropleth is complete. It should look like the image displayed below but will differ depending on the colours you chose. Remember, you should use colours that progress from darker to lighter, or vice versa, depending on the data you are measuring.

Next Steps:

Request a free ArcGIS Online Account for your school:

Australian schools can request a free ArcGIS Online account as part of Esri Australia's Classroom GIS Initiative. A school subscription provides additional map layers, content, features and privacy. Learn more about ArcGIS Online, and apply for your ArcGIS Online School subscription at http://esriaustralia.com.au/education

Speak to Esri Australia's Education Program Manager:

Australian schools can seek additional support or speak to our Education Program Manager by emailing education@esriaustralia.com.au.