

How to Use ArcGIS Online Analysis Tools

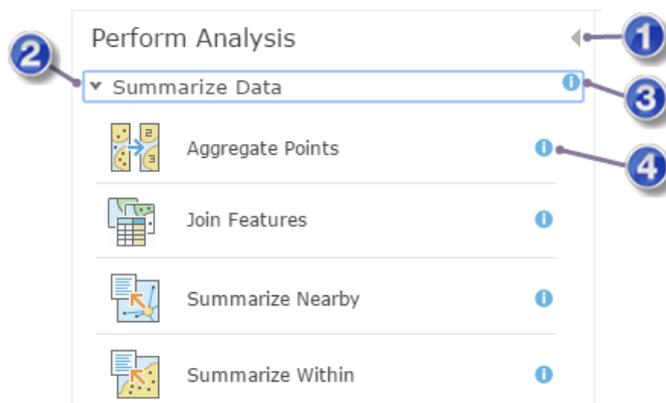
Spatial Analysis Lab

Overview:

1. How to access the analysis tools
 2. Tools relevant for this workshop
 - a. Join Features
 - b. Find Existing Locations
 - c. Calculate Density
 - d. Create Buffers
 3. Tips for working with analysis
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1. How to access the analysis tools

- a. To use the analysis tools, you need the following privileges:
 - i. Create, update, and delete content
 - ii. Publish hosted feature layers
 - iii. Spatial Analysis
- b. To access and use the analysis tools in Map Viewer:
 - i. Open the web map containing layers you want to analyze
 - ii. Click the Contents button in the Details Pane
 - iii. Click the Analysis button on the map menu bar
- c. View the tools within perform analysis by clicking the expand or collapse button on the left side of the category



1. Return to the details pane
2. Expand the category to view the tool it contains
3. View help about the category
4. View help for the tool

2. Tools relevant for this workshop

a. Summarize data -> **Join Features**

- i. Use this tool to transfer attributes from one layer or table to another based on spatial and attribute relationships.



- ii. Usage: join features based on a spatial relationship, an attribute relationship, or a combination of the two.

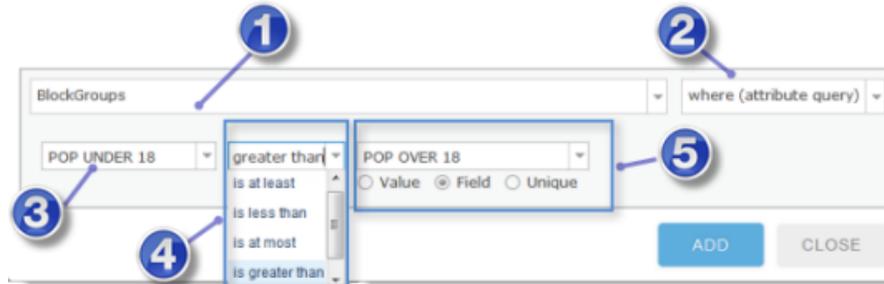
b. Find locations → **Find Existing Locations**

- i. Use this tool to select features in your study area that meet a series of criteria based on spatial or attribute queries



- ii. Usage: a single input of point, line, or area features is required. The input is the only layer that can be queried unless another layer is added through a spatial join.
- iii. Queries can be built using Add Expression.
 1. If your field is categorical, the following operators can be used:
 - a. Is
 - b. Is not
 - c. Starts with
 - d. Ends with
 - e. Contains
 - f. Does not contain
 - g. Is blank
 - h. Is not blank
 2. If your field is numerical, the following operators can be used:
 - a. Is
 - b. Is not
 - c. Is at least
 - d. Is less than
 - e. Is at most

- f. Is greater than
- g. Is between
- h. Is not between
- i. Is blank
- j. Is not blank



c. Analyze Patterns → **Calculate Density**

- i. Use this tool to create a density map using point or line measurements
- ii. The Calculate Density tool uses input point or line features to calculate a density map within an area of interests



- iii. Usage: requires a single input of point or line features
- iv. Density can optionally be calculated using a count field- a numerical field that specifies the number of incidents at each location
- v. By default, Calculate Density tool calculates an appropriate search distance for determining neighborhood size, will not clip the output, will classify the output as Equal Interval with 10 classes, and will provide output densities in Square Miles or Square Kilometers. You can change these settings using the Options drop- down menu.

d. Use Proximity → **Create Buffers**

- i. Use this tool to create areas around input features to a specific distance
- ii. Usage: the size of the buffer can be entered as a constant using the Distance option (all buffers will be the same) or using values from a field (different features can have different sized buffers)



- iii. By default, the tool will create overlapping buffers with the buffer areas meet. When the input features are lines, the default is a rounded buffer on all sides of the lines. These defaults can be changed using the Options drop-down menu.

3. *Tips for working with analysis*

- a. It is recommended that you always check “Use Current Map extent” and that you zoom into the area you want analyzed. This will limit the number of features the tools needs to examine when performing analysis, and will speed the process up and credits used by the tool will be based on your selected area.
- b. Click the Rerun Analysis button to rerun an analysis tool. This will repopulate all of the parameters.
- c. Go to **ArcGIS Online** → **Help** → **Analyze** to learn more about how to use a wider range of tools
 - i. <https://doc.arcgis.com/en/arcgis-online/analyze/use-analysis-tools.htm>