



## Professional Development Workshop on Integrating Geospatial Technology into the HS Classroom

### Activity 3 (Part 1): *Integrating GPS & GIS*

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#### Objective

Use a GPS unit to collect latitude and longitude of a shape/letter of your choice and display the points in ArcGIS Online.

#### Directions

1. Use the GPS unit to gather data from at least 5 points. The points should be arranged in a recognizable pattern (a letter, a smiley face, a star, etc.), and there should be plenty of distance (~50ft) between them.
2. Record your information in the table below. The 'Notes' column should be used to describe information about your point.

Point	Latitude	Longitude	Notes
1 (Example)	43.098685	-77.607266*	Left eye in smiley face

\*Longitude should be negative since we are in the Western hemisphere

**When you are done: Turn OFF your GPS, return to class, and turn in the GPS.**

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## Activity 3 (Part 2): Integrating GPS & GIS

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### Create a .csv file of your data:

1. Open Excel.
2. Create a table of your field data, making sure that the first row contains your column headings:

	A	B	C	D	E	F
1	Point	Latitude	Longitude	Notes		
2	1	43.10064	-77.609871	top left corner		
3	2	43.10071	-77.609571	top right corner		

**Important! Do not include any spaces in front of or after the information in each box.** Also, do not include the N or W for your Lat/Long. A west longitude value should be indicated with a negative sign.

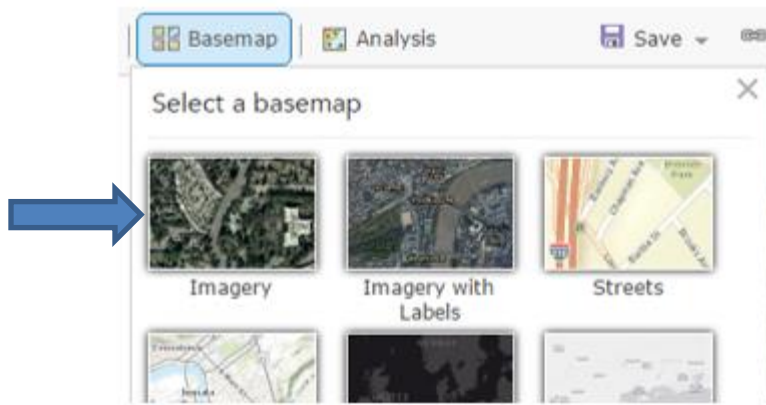
3. Save the Excel file as "activity3.csv" to your computer desktop. You will have to choose CSV (comma delimited) from the drop-down box. Make sure your computer does not add another extension at the end of the file name.

Save as type:

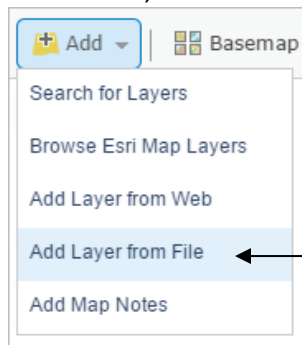
### Add the CSV file and symbolize your layer features

1. In ArcGIS Online, sign in to your account, and at the top of the page, click New Map.
2. Change the basemap to 'Imagery'.





3. On the ribbon bar, click the Add button and choose Add Layer from File.

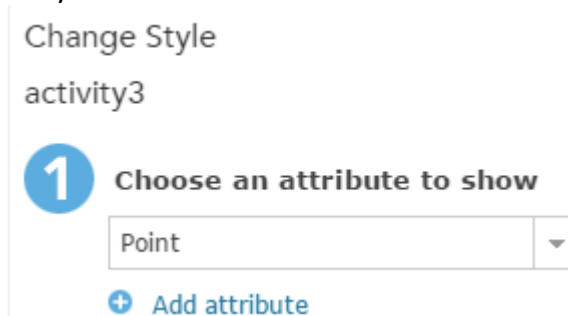


4. In the Add Layer from File window, click Choose File. Browse to the location where you saved the activity3.csv file and click on it to select it. Then, click Import Layer.

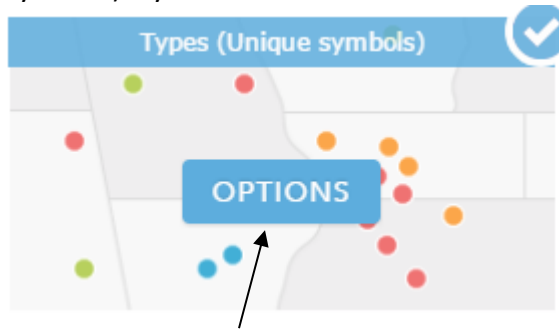
File:  activity3.csv

On the map, a symbol is drawn at the location of each of your points. By default, the points are assigned a style, and an attribute to show. You will want to change these. [If your 5 points did not show up on the map, go back and check your .csv file for errors (extra spaces, missing negative signs)]

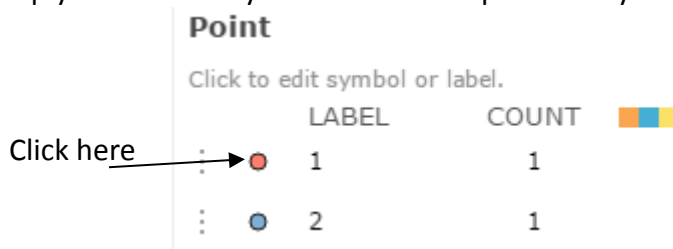
5. In the Change Style pane that appears, for option 1, choose the attribute that you want to show. It should say **Point**.



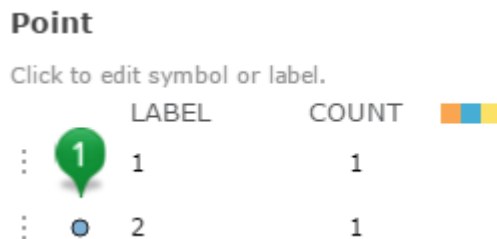
- For option 2, under Select a drawing style, scroll down and click the Options button for Types (Unique symbols) style.



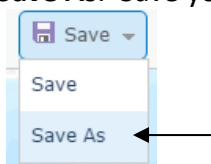
- Click on the Options button.
- In the Change Style menu, you can select each individual point and change its symbol and color. Simply click on the symbol next to the point that you want to change:



And then select a new shape, fill, and/or outline from the menu. Remember, you can use the drop-down menu to access more symbols, such as arrows, flags, pushpins, and more. Don't forget to adjust the symbol size so that you can easily see your points.



- At the bottom of the Change Style pane, click OK, and then click Done.
- Click on the drop-down arrow next to the Save button on the ribbon bar above the map and select **Save As**. Save your map as **GPS Points**.



11. Optional: you can create labels for your points.

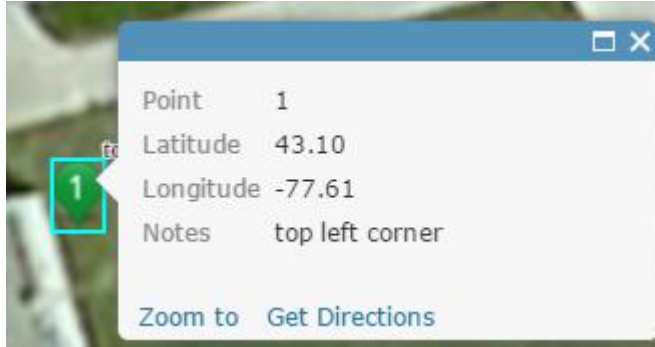
- Hover over the activity3 layer in the Contents panel and Click on More Options [...]. Choose Create Labels.



- Change the settings for alignment, font size and color, add a text halo, etc.

## Configure the pop-ups

12. Click on one of your points on the map to view its pop-up menu:



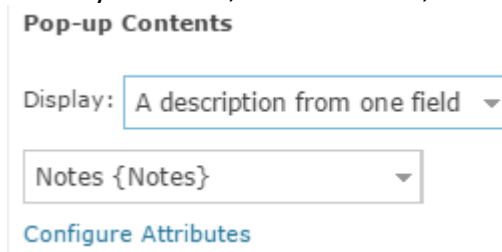
You can change what appears in this menu, and also add media, such as images or charts.

13. Hover over the activity3 layer in the Contents panel and Click on More Options [...]. Choose 'Configure pop-up'.

14. In the Configure Pop-up menu, give your Pop-up a descriptive title, such as GPS location.

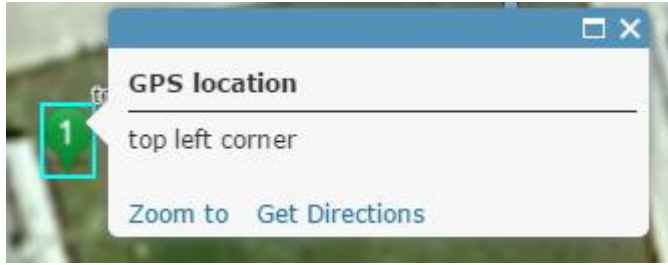


15. Next, decide how you want the contents to be displayed. By default, it lists all the attributes (all of the information in the columns of your .csv file). However, you can change it so that information from only one field, such as Notes, is displayed.



Click OK when you are done.

16. Click on a point on your map to view your new pop-up menu.



17. Save your map when you are finished.