

Write Your Initials Across the U.S.A.  
Latitude and Longitude Lab

Name: \_\_\_\_\_

Date: \_\_\_\_\_

We are going to use GIS technology to learn about latitude and longitude, while signing your initials across the United States.

Objectives:

I can estimate latitude and longitude to the nearest degree.

I can enter data into a spreadsheet.

I can use ArcGIS to customize maps and symbols when representing data.

Procedure:

Part 1: Signing your initials

- 1) On the map of the United States, write your initials in big, neat letters.
- 2) Choose around 10 - 15 points on each letter and mark them on your map with a point. Choose enough points so that the outline of the letter is clearly visible. Some letters will require more points than others.
- 3) Estimate the latitude and longitude of each point to the nearest degree, and record it on the data table provided.

Part 2: Digitizing your data

- 4) Open up google drive on your computer. Click on "New" and choose "Google Sheets"
- 5) Label 3 columns in Row 1: Letter, Latitude, Longitude
- 6) Begin entering your data from your data sheet.

**IMPORTANT: Because we are in the western hemisphere, the longitude of your points MUST be negative (i.e. -110)**

- 7) Click on File -> Download As -> Comma-Separated Values (.csv) and save the file to a location you can easily find

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Part 3: Creating a digital map using ArcGIS

- 8) Go to [www.arcgis.com](http://www.arcgis.com)
- 9) Click on "Sign In", click on the button to sign in with a google account.
- 10) Sign in with your school google account, agree to the terms and create an account.
- 11) Click on "Make a Map"
- 12) Click on "Add" and choose "Add Layer From File"
- 13) Choose your file, then click "Import Layer"

If you did everything correctly, you should now have your initials displayed across the United States. If any points seem out of whack, figure out which ones they are and tweak them.

Part 4: Style your initials

- 14) Click on the "Options" button under Types (Unique Symbols)
- 15) If you click on the colored circle next to each letter, you can change the symbols and colors. Be creative, make it your style. Have some fun.

Conclusion questions:

- 1) As we move from the western United States to the eastern United States, what happens to the longitude numbers?
- 2) As we move from the southern United States to the northern United States, what happens to the latitude numbers?
- 3) GIS technology can be used to map any kind of data to spatial coordinates on a map. Give one example (not already discussed) of how a government might want to use GIS technology. Give one example (not already discussed) of how YOU might want to use GIS technology.



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