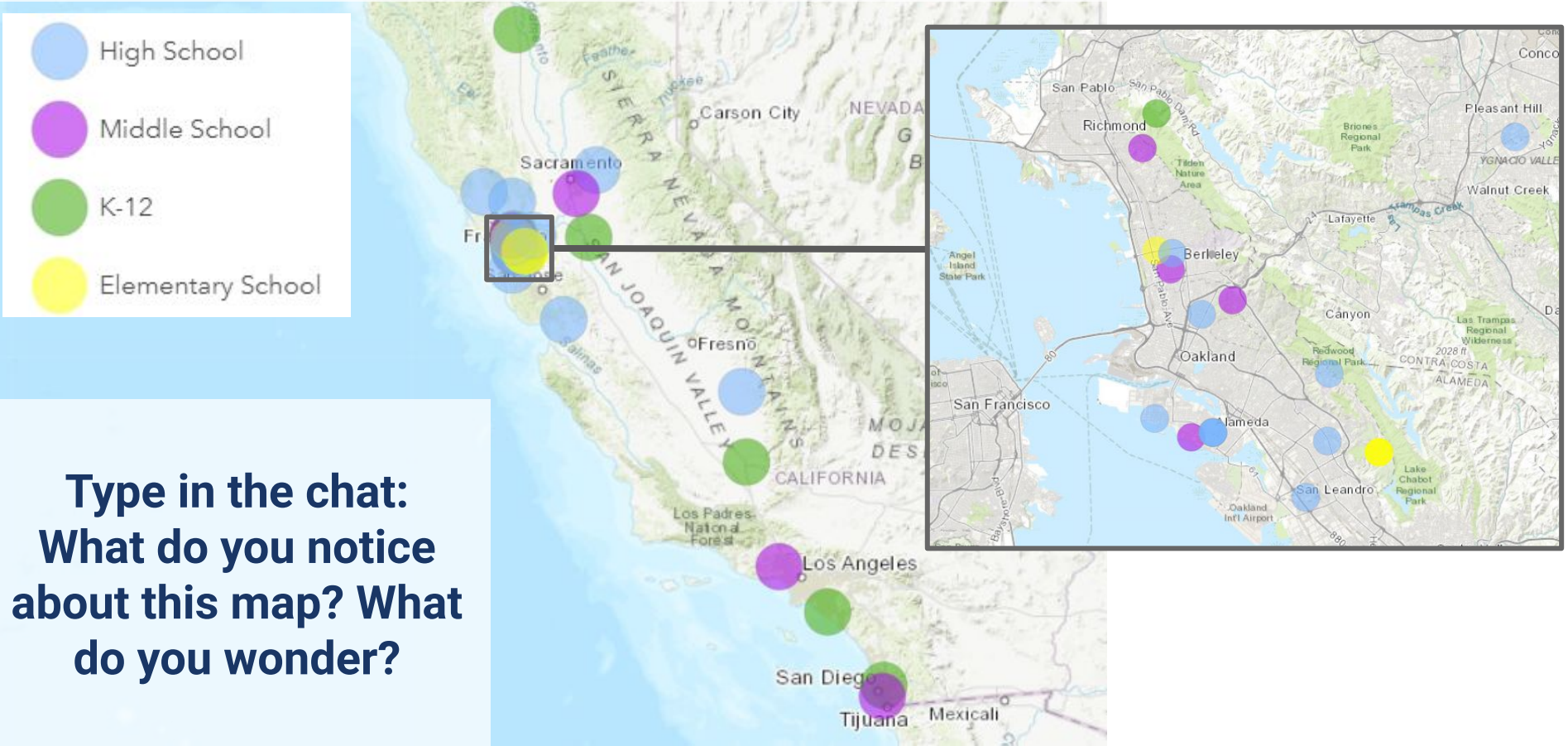
Welcome to the Mapping for Spatial & Environmental Literacy Webinar Series!



Type in the chat: What do you notice about this map? What do you wonder?

March 31 2021

Mapping for Spatial & Environmental Literacy

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The Lawrence Hall of Science
UNIVERSITY OF CALIFORNIA, BERKELEY

Berkeley
UNIVERSITY OF CALIFORNIA

COMMUNITY RESOURCES FOR SCIENCE

Goals of this webinar:

1. Build understanding of spatial data
2. Connect spatial data to answer environmental questions
3. Explore how to access ArcGIS products
4. Learn how to collect your own data with Survey123

Goals of NEXT webinar:

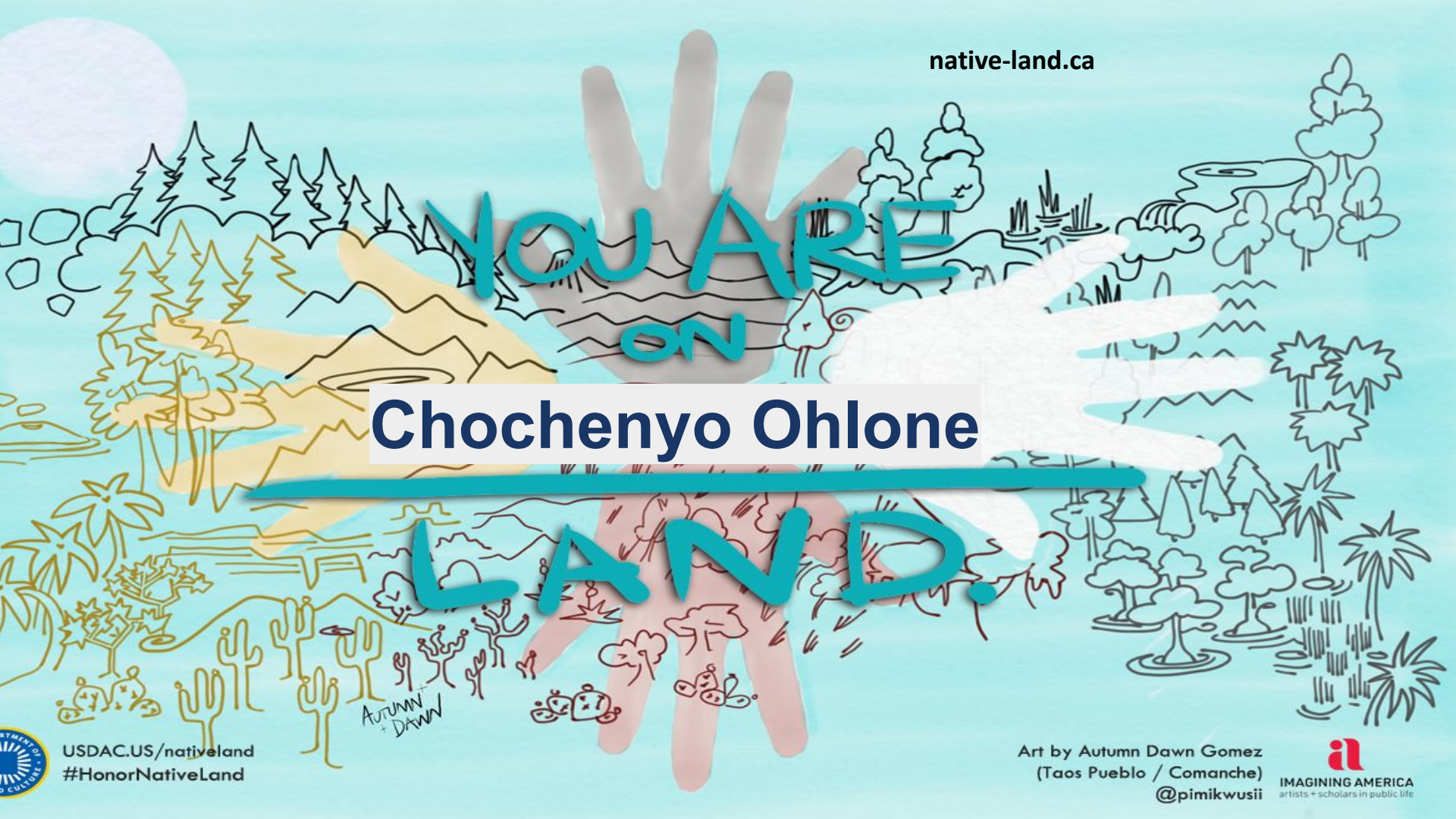
1. Access existing spatial data
2. Visualize spatial data on ArcGIS
3. Analyze spatial data on ArcGIS

Group Agreements

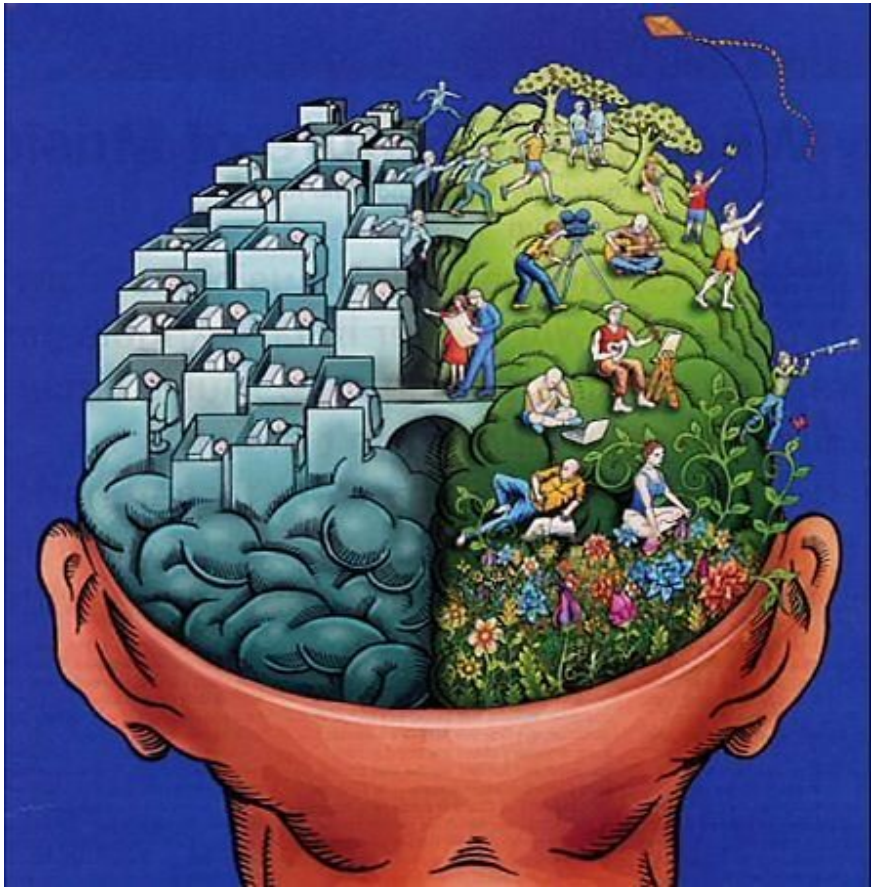
- Take space/make space
- Presume positive intentions, and take responsibility for your impact
- Stay curious and ask questions

- Mute when you are not talking
- Keep your camera ON whenever possible

native-land.ca



1. Build understanding of spatial data



What comes to mind when you think about spatial data/spatial literacy?

Put any thoughts you have in the chat!

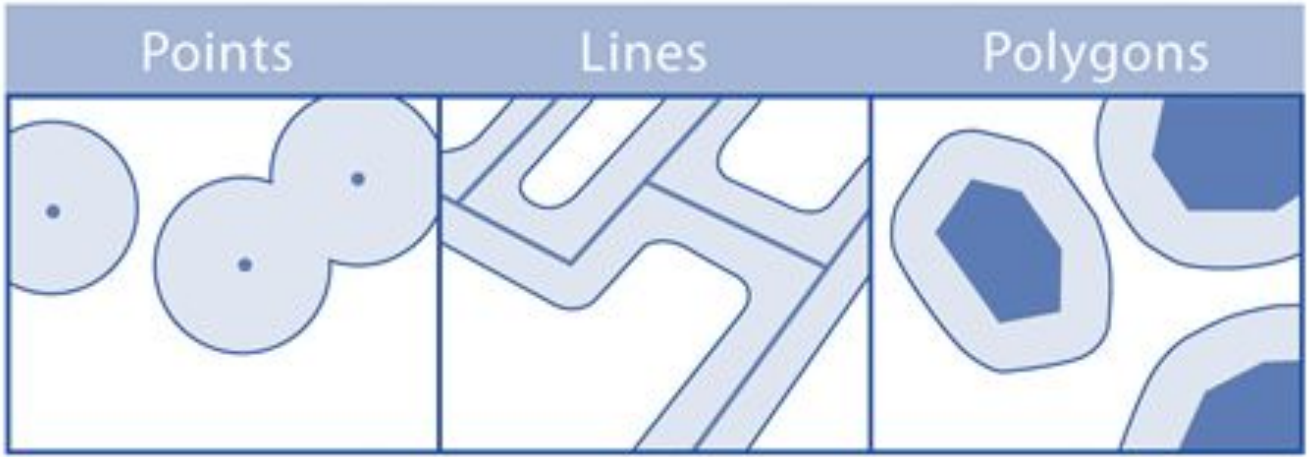
1. Build understanding of spatial data

"Spatial Literacy" is the ability to be able to include the spatial dimension in our thinking and problem solving

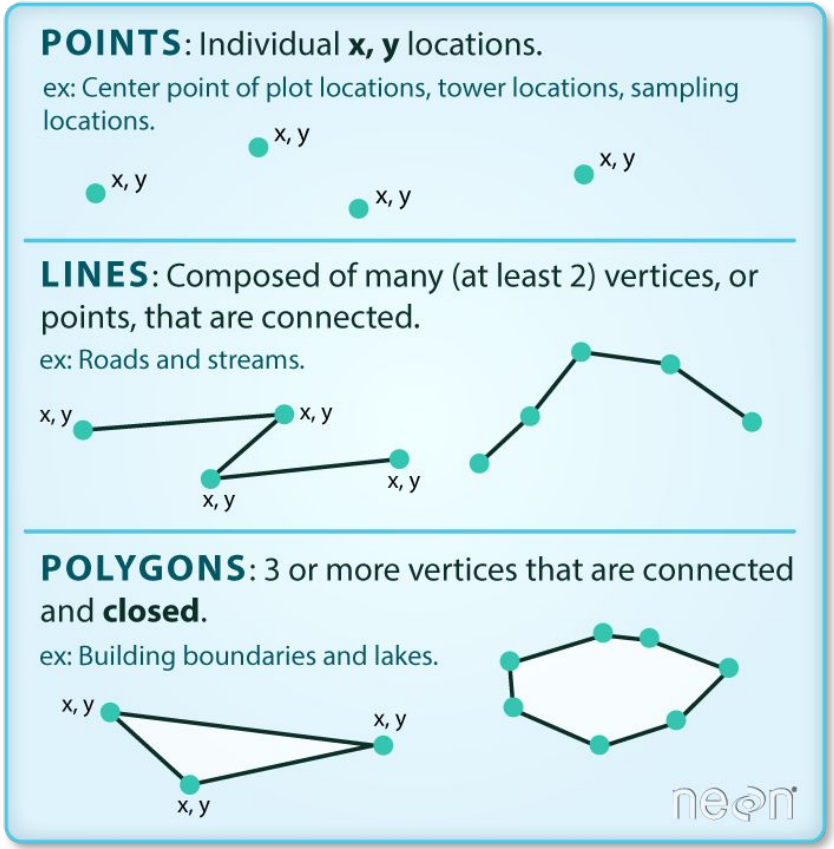
Using spatial data in the classroom can engage students with issues relevant to them and connect them with their local environment

1. Build understanding of spatial data

All the spatial data (termed: features) we will be using is based on **POINTS, LINES, and POLYGONS**

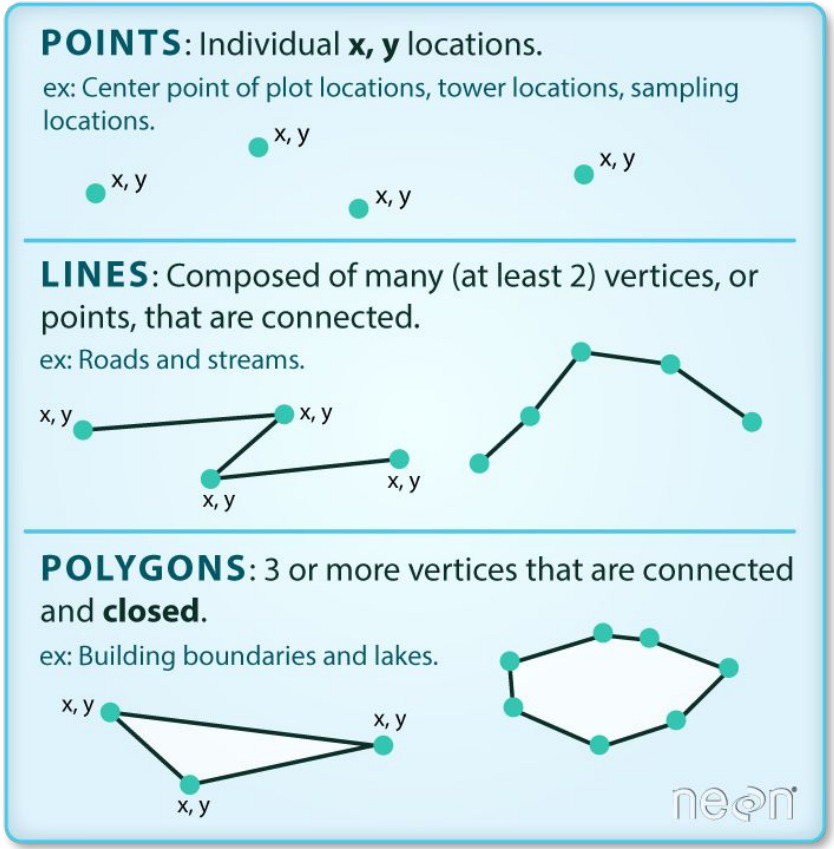


1. Build understanding of spatial data



name	shape
road	line
market	point
lake	polygon

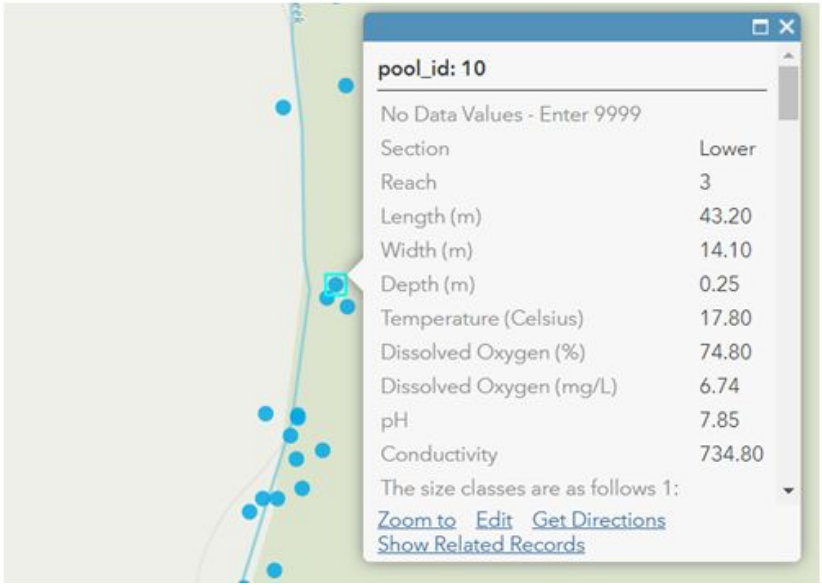
1. Build understanding of spatial data



Can you think of any examples of what could be collected as a point, line, or polygon?

1. Build understanding of spatial data

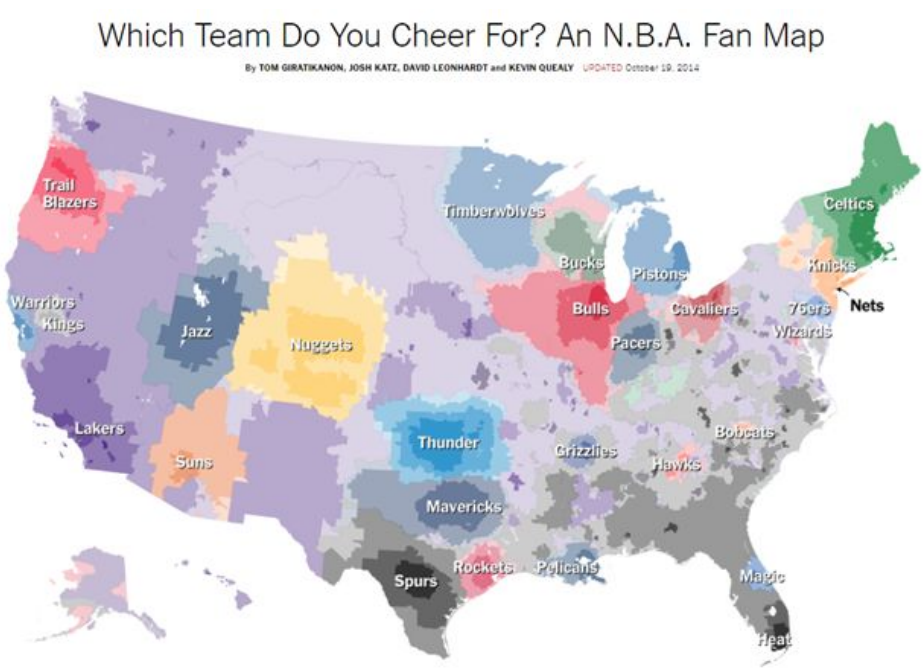
Each feature (a point, line, or polygon) is associated with **ATTRIBUTES**



Attributes are **observations** related to a **feature**. In this example, each **point feature** represents an individual pool in a stream. The **attributes** associated with each **point** describes its size and water quality.

2. Connect spatial data to answer environmental questions

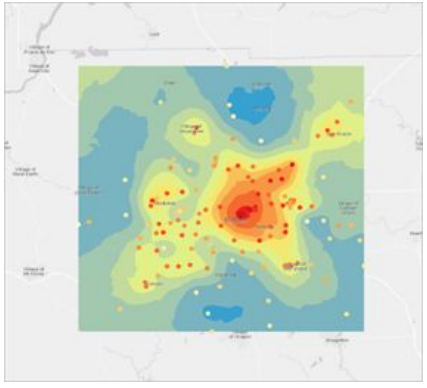
Spatial data can be used to tell a story… the data that you use depends on what kind of story you want to tell – choose something that interests you!



2. Connect spatial data to answer environmental questions

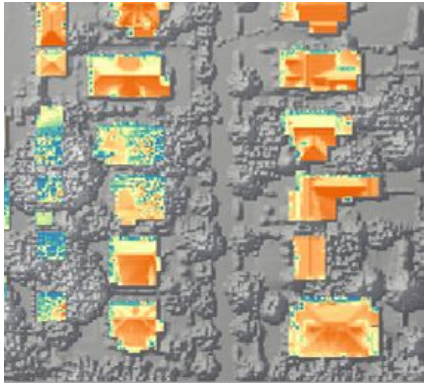
Examples of spatial stories you can tell with your class:

Urban Heat Island



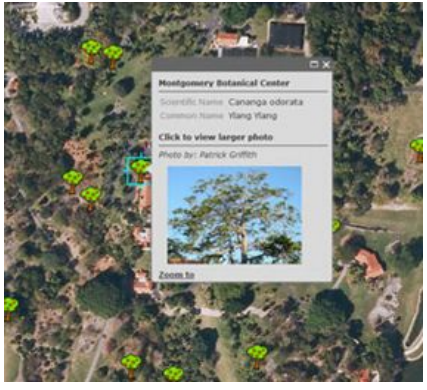
•**Air temperature** in several locations to understand **urban heat islands**

Green Infrastructure



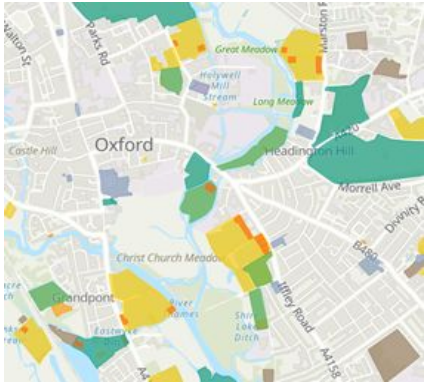
•Find examples of **green infrastructure** – stormwater mediation, solar panels, etc!

Trees in the Neighbourhood



•Map types of **trees**
•Do you see **animals** or **bugs** on the tree?

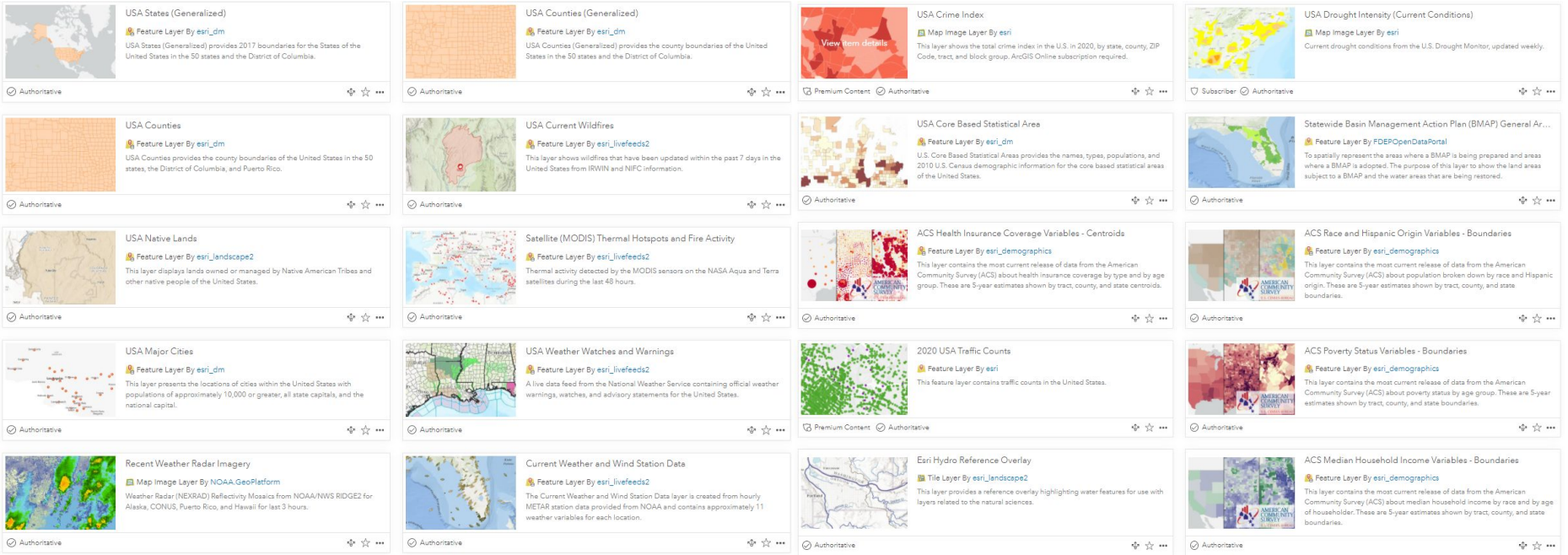
Public Greenspace



•Closest **greenspace**?
•What **facilities** are there?
•How many **people** do you see?

2. Connect spatial data to answer environmental questions

What spatial data exists?



Nearly anything you can think of!

BREAKOUT ROOM

With your small group:

1. **Reflect on what spatial data and literacy mean to you**
2. **Think of times when you use spatial data in your day-to-day life. What about in your classroom?**
3. **Be ready to share with the whole group**

3. Explore how to access ArcGIS products

ArcGIS is a geographic information system (GIS) for working with maps and spatial data maintained by the Environmental Systems Research Institute (ESRI)

ArcGIS products we will discuss:

1. **ArcGIS Online**
2. **StoryMaps**
3. **Survey123**

...but there are more!

ArcGIS

Survey123 for ArcGIS

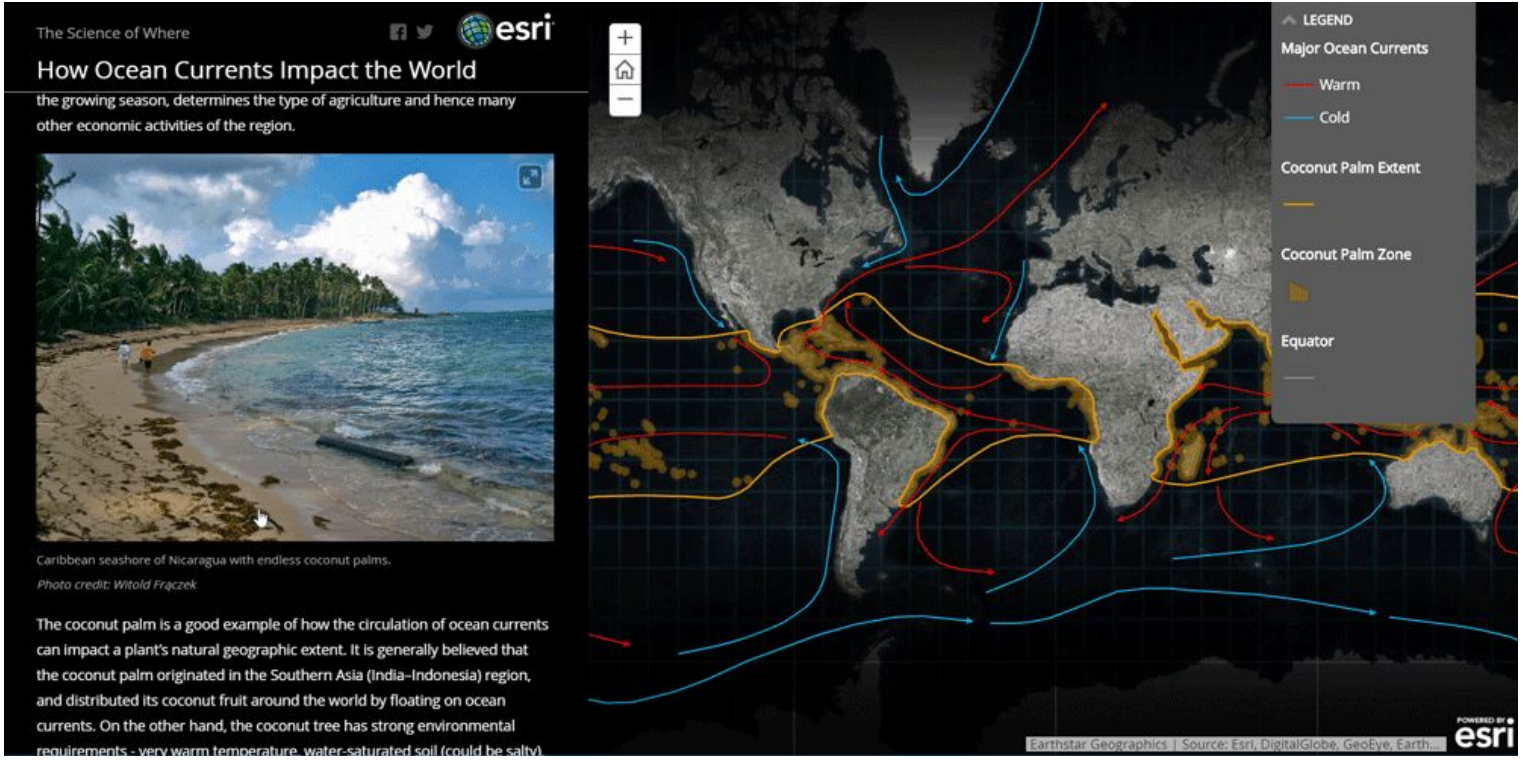
3. Explore how to access ArcGIS products

ArcGIS Online is a cloud-based mapping and analysis tool

Use ArcGIS online to load existing and self-generated data determine spatial relationships and create maps

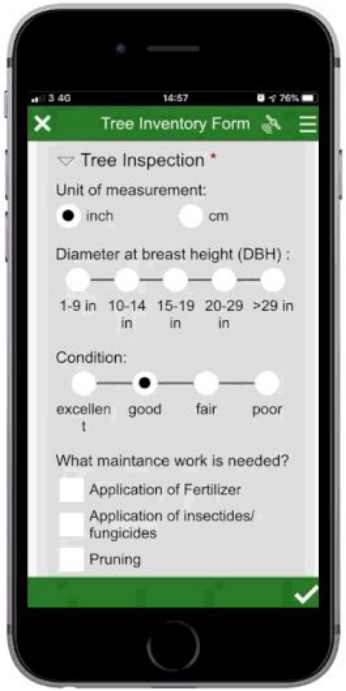
3. Explore how to access ArcGIS products

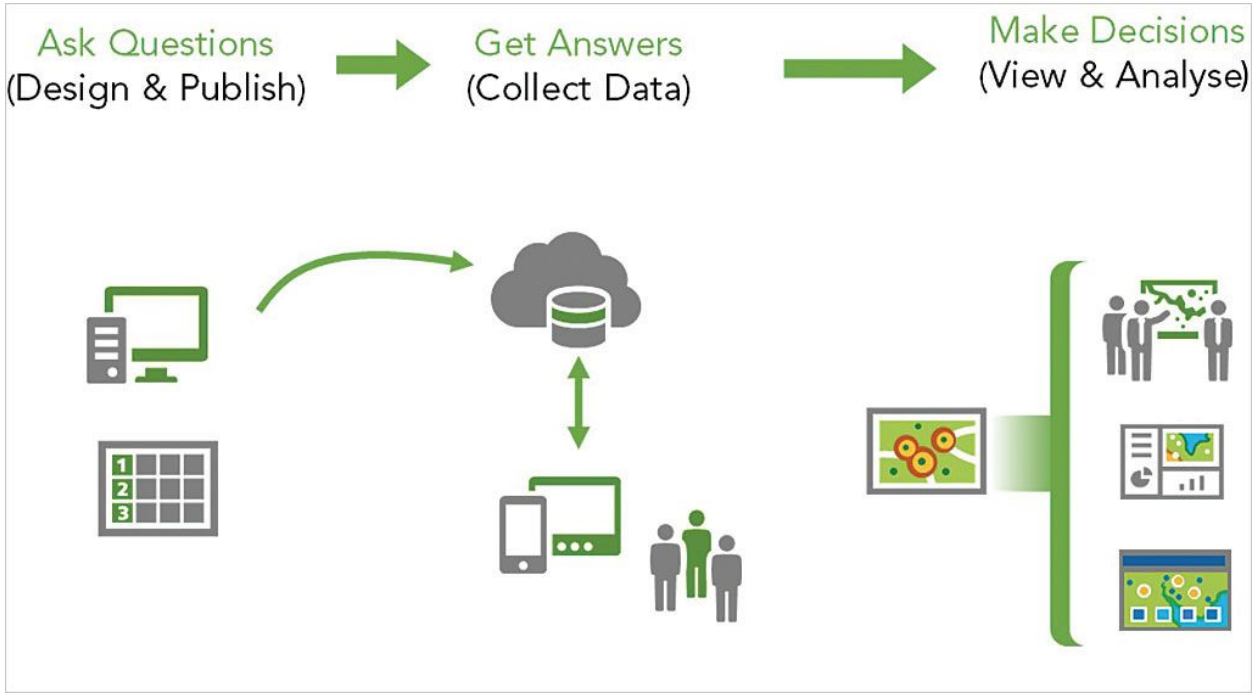
StoryMaps is a tool to create inspiring, immersive stories by combining text, interactive maps, and other multimedia content. Think of it like a PowerPoint or Prezi presentation but focusing on telling a story with interactive maps



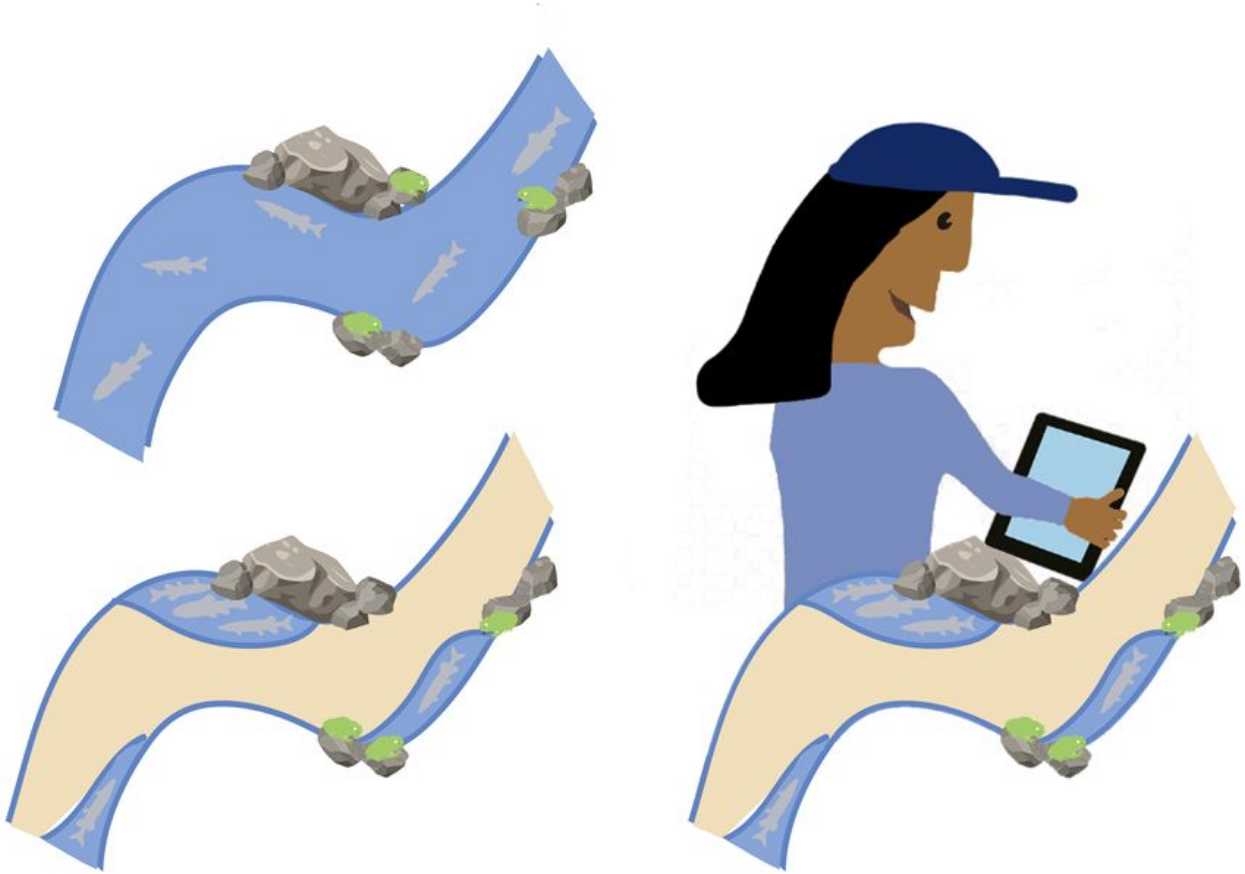
3. Explore how to access ArcGIS products

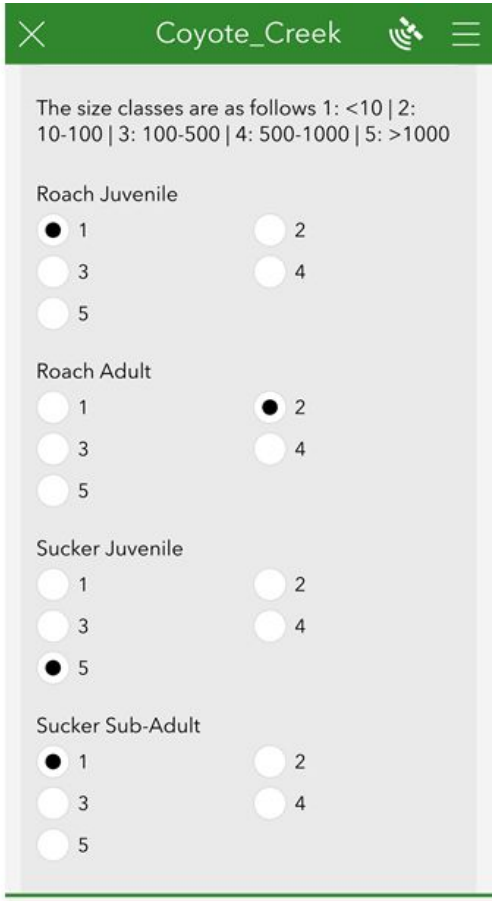
Survey123 is a form-based tool for creating, sharing, and analyzing surveys. Collect information that is linked to a spatial location that is automatically synced to upload to your ArcGIS account





4. Learn how to collect your own data with Survey123



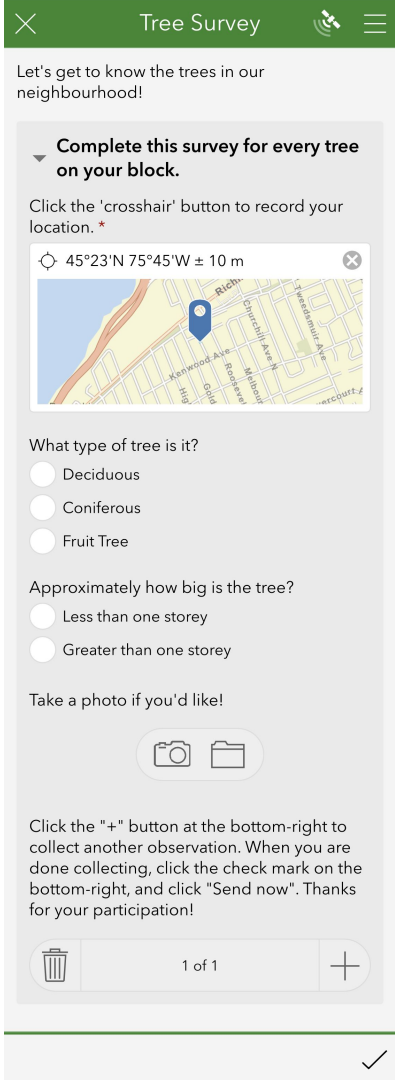


3. Explore how to access ArcGIS products

Account Type	Sign-In	What you can do	What you cannot do
None (anonymous)	None	• View publicly shared maps, data • Submit data with Survey123 for existing surveys	• Save changes or modifications to maps or data • Analyze spatial data • Create surveys on Survey123
Public	Individual signs in to their own public account, licensed for personal use	• View publicly shared maps, data • Save changes or modifications to maps or data • Submit data with Survey123 for existing surveys • Create maps using ArcGIS Online • Create StoryMaps	• Analyze spatial data • Create surveys on Survey123
Organizational	Organizational subscription for your school; each member has a private, unique log-in	• View shared maps, data • Save changes or modifications to maps or data • Submit data with Survey123 for existing surveys • Create maps using ArcGIS Online • Create StoryMaps • Analyze spatial data • Create surveys on Survey123	

4. Learn how to collect your own data with Survey123

Get to know your local environment by collecting data on trees in your neighbourhood using this survey!



BREAKOUT ROOM

In your small group:

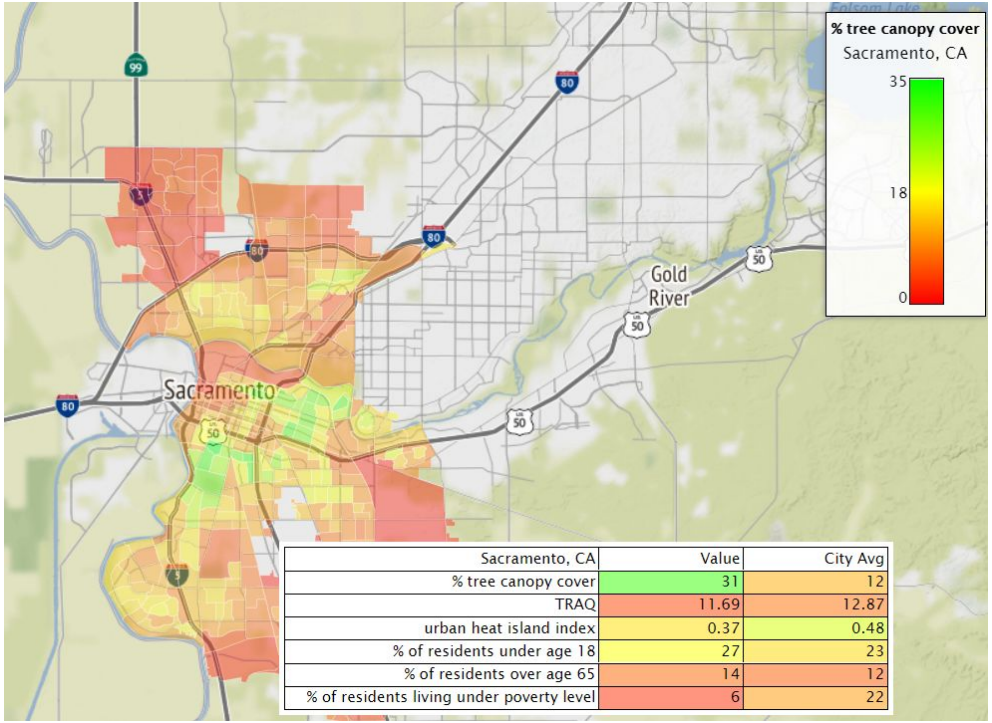
1. **Given the tree survey data, what kinds of environmental or social justice questions would you be interested in?**
2. **What additional data would you need to answer those questions?**
3. **Be ready to share out with the whole group**

4. Learn how to collect your own data with Survey123

1. Access the sample tree survey via browser or Survey123 app (it's free!)
   a. Open the camera app on your phone
   b. Hold it over the QR code --------->
   c. Click the pop-up at the top of your screen
   d. Open the survey in the field app if you have it downloaded, otherwise open the survey in your browser
2. For the field app: sign into your account if you have one- if you don't, you can collect data anonymously
3. Go outside and collect data for every single tree on one side of your block (between two intersections)
4. When you are done collecting data, upload your results

4. Learn how to collect your own data with Survey123

During our next webinar, we will take a look at the data that you collected and try to analyze it together!



Sacramento, CA	Value	City Avg
% tree canopy cover	31	12
TRAQ	11.69	12.87
urban heat island index	0.37	0.48
% of residents under age 18	27	23
% of residents over age 65	14	12
% of residents living under poverty level	6	22

Summary

1. Using spatial data in the classroom can engage students with issues relevant to them and connect them with their local environment
2. Spatial data can be represented as **points, lines,** or **polygons**
3. You can use spatial data and mapping tools to tell stories of all kinds
4. ArcGIS is a great tool to visualize and analyze spatial data
5. ArcGIS products that you can use in the classroom include:
    a. ArcGIS Online - to create maps
    b. StoryMaps - to tell stories using interactive maps
    c. Survey123 - to collect form-centric data

THANK YOU!

See you April 1st for the second webinar in the series!

In the meantime, feel free to send me any questions at hanamoidu@berkeley.edu

4. Learn how to collect your own data with Survey123

If you are submitting the survey using the field app, use the 'crosshair' button to record your location. If you are submitting the survey using your phone browser, use the following steps to record your location by CLICKING THE RED CIRCLED OPTIONS