



# Qside: Act Now

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# Scholar Readings

- Chronic absenteeism has risen significantly in recent years.
- We analyzed scholarly articles to identify causes, consequences, and influencing factors.
- Regular attendance is crucial for academic success and social skill development.
- Schools should prioritize maintaining high attendance rates, and students should understand the risks.
- Poor academic performance in subjects like Math and English is a major consequence of absenteeism.
- Absences impact not only the missing students but also their peers in the classroom.

# Creating a Data Map

A	B	C	D	E	F	G	H
ID #	Category	Sub-category	Variable	Indicators	Potential data sources	Links to actual data sources	Micro-unit level
-	Education		Absenteeism	"Chronic Absence Rates"	John Hopkins School of Education;	<a href="https://www.attendanceworks.org/state-data-charts-for-2021-22/">https://www.attendanceworks.org/state-data-charts-for-2021-22/</a> --- <a href="https://edu-dsi.shinyapps.io/chronic-absence/">https://edu-dsi.shinyapps.io/chronic-absence/</a>	State
-	Education		Literacy Rate	Reading	Nation's Report Card;	<a href="https://www.nationsreportcard.gov/profiles/stateprofile?sfi=NP&amp;chort=1&amp;sub=RED&amp;sj=&amp;st=MN&amp;year=2024R3">https://www.nationsreportcard.gov/profiles/stateprofile?sfi=NP&amp;chort=1&amp;sub=RED&amp;sj=&amp;st=MN&amp;year=2024R3</a>	National, state
-	Education		Literacy Rate	Mathematics	Nation's Report Card;	<a href="https://www.nationsreportcard.gov/profiles/stateprofile?sfi=NP&amp;chort=1&amp;sub=MAT&amp;sj=&amp;st=MN&amp;year=2024R3">https://www.nationsreportcard.gov/profiles/stateprofile?sfi=NP&amp;chort=1&amp;sub=MAT&amp;sj=&amp;st=MN&amp;year=2024R3</a>	National, state
-	Health/Health Care		Incidence of Illness	Pediatric Cancer Rates	National Institute of Health;	<a href="https://statecancerprofiles.cancer.gov/map/map.noimage.php">https://statecancerprofiles.cancer.gov/map/map.noimage.php</a>	State, County, HSA (Health Service Area)
-	Economics		Income	Median Household Income	United States Census;	<a href="https://data.census.gov/map/1400000US01073000300?q=Median%20Household%20Income&amp;layer=VT_2022_140_00_PY_D1&amp;loc=33.5432,-86.7525,z12.8068">https://data.census.gov/map/1400000US01073000300?q=Median%20Household%20Income&amp;layer=VT_2022_140_00_PY_D1&amp;loc=33.5432,-86.7525,z12.8068</a> ----- <a href="https://fred.stlouisfed.org/release/tables?eid=259515&amp;rid=249">https://fred.stlouisfed.org/release/tables?eid=259515&amp;rid=249</a>	National, State
-	Demographic Information		Diversity	Racial and Ethnic Diversity in the United States	United States Census;	<a href="https://www.census.gov/library/visualizations/interactive/racial-and-ethnic-diversity-in-the-united-states-2010-and-2020-census.html">https://www.census.gov/library/visualizations/interactive/racial-and-ethnic-diversity-in-the-united-states-2010-and-2020-census.html</a>	National, State

## What is a Data Map?

A **data map** is a visual or structured representation of how data flows within a system, showing sources, storage locations, transformations, and connections between different datasets.

# Creating a Toy Data Set

- Size
  - 5 different excel sheets
    - Student demographics, ID\_MetaData, Individual School Trajectory, School Demographics, Student School Presence
- Attributes:
  - 25 fake students
    - Name, Address, Race/Ethnicity, Birthdate, Number of siblings, Socioeconomic Status(Low/Middle/High), Food Insecure(1-5), etc.
  - 6 Real Illinois schools
  - 80 fake excused absence letters

# Toy Data Set Samples

StudentID	SchoolID	DaysPresent	ExcusedAbsences	UnexcusedAbsences	Tardies	DatesAbsent	ReasonGiven	AbsenceNote	ReasonCategory
1001	2002	178	5	2	3	01/08/2025; 01/15/2025; 02/03/2025; 02/14/2025; 03/01/2025	Y	John had a high fever and chills, so we kept him home to recover.; John had a dentist appointment that took longer than expected.; John was out of town for a family emergency.; John had food poisoning and was too sick to attend school.; John missed school due to a delayed flight returning from a sports competition.	medical; appointment; family; atheltics
1002	2003	180	5	3	4	01/05/2025; 01/12/2025; 02/08/2025; 03/10/2025; 03/25/2025	Y	Jane had a migraine and needed to rest in a quiet environment.; Jane had a track meet out of town and missed the school day.; Jane had a doctor's appointment that could not be rescheduled.; Jane stayed home for a mental health day.; Jane was feeling nauseous and had to rest.	medical; atheltics, appointment, mental health
1003	2006	185	0	1	2	N/A	N/A	N/A	N/A
1004	2001	172	5	0	5	01/09/2025; 01/22/2025; 02/06/2025; 03/12/2025; 03/28/2025	Y	Emily had strep throat and needed antibiotics before returning to school.; Emily had a bad migraine and was too sensitive to light and noise.; Emily had an important tennis tournament and missed school.; Emily had to stay home to take care of a younger sibling while we handled a family emergency.; Emily missed school due to transportation issues when the car wouldn't start.	medical; atheltics; family; transportation
1005	2005	188	0	1	1	N/A	N	N/A	N/A

Student  
School  
Presence

Student  
Demographics

StudentID	StudentFirstName	StudentLastName	Race/Ethnicity	GenderAssignedatBirth	GenderIdentity	Address	City	State	ZipCode	Birthdate	NumofSiblings	SES	StableLivingSituation	FoodInsecure
1001	John	Doe	Caucasian	Male	Non-Binary Femme	2421 Arrowhead Dr	Springfield	IL	62702	5/14/2008	2	Low	2	1
1002	Jane	Smith	Asian	Female	Cisgender Female	922 N 4th St	Springfield	IL	62702	9/21/2007	1	Middle	3	4
1003	Michael	Johnson	African American	Male	Cisgender Male	2213 W Chatsford Ct	Peoria	IL	61615	12/2/2006	3	High	1	5
1004	Emily	Davis	Hispanic	Female	Pangender Fluid	344 Point Bluff Dr	Decatur	IL	62521	3/11/2009	0	Low	5	2
1005	William	Brown	Caucasian	Male	Genderqueer Femme	2001 Marland St	Springfield	IL	62702	7/30/2008	2	Middle	3	5

# Wire Frame

## Input Screen:

Website Header

CSV File Upload

Checkboxes for which types of data visualizations the user wants to view including:

• Bar Chart

• Histograms

• Scatter Plot

• Ridge Plot

• Line Graph

• Box Plot

• Pie Chart

• Violin Plot

Checkboxes for which attributes the user wants to visualize:

• StudentID

• SchoolID

• DaysPresent

• ExcusedAbsences

• UnexcusedAbsences

• Tardies

• DatesAbsent

• ReasonGiven

• AbsenceNote

• ReasonCategory

Special Section if Tableau Data Map is wanted:

• Filter Color by: (Set of Attributes)

• Type of Data Map (State Level, County Level, National Level)

• Filter by Specified Threshold

Disclaimer

## Output Screen:

Header

Data Visualizations

Tableau Map

Disclaimer

# Working with Tableau

- Used a common ID to link 2 datasets together, make sure data type for those variables are the same.
- Currently using GEOIDS to accurately map out schools, addresses, etc.

IndividualSchoolTrajectory+ (Student\_Toy\_data)

Filters  
0 | Add

StudentSchoolPresence... SchoolDemographics Sheet1 tl\_2023\_17\_tabblock20.s...

Sheet1 — tl\_2023\_17...

100 rows

How do relationships differ from joins? [Learn more](#)

Sheet1 Operator tl\_2023\_17\_tabbloc...

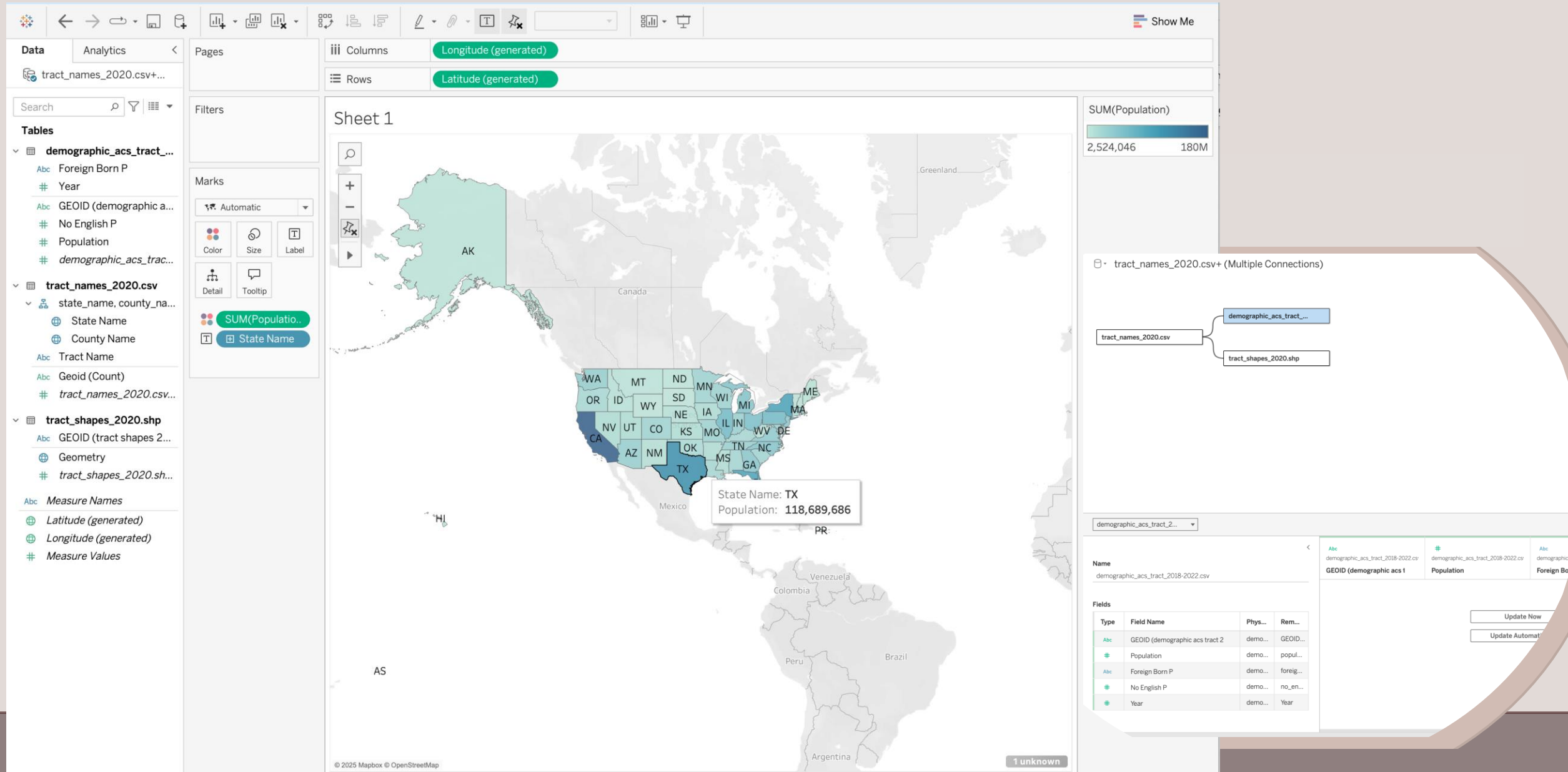
Abc Geoid = Abc Geoid20

(+) Add more fields

> Performance Options

Abc tl_2023_17_tabblock20.shp Tractce20	Abc tl_2023_17_tabblock20.shp Blockce20	Abc tl_2023_17_tabblock20.shp Geoid20	Abc tl_2023_17_tabblock20.shp Geoidfq20	Abc tl_2023_17_tabblock20.shp Name20
953600	2006	170579536002006	1000000US170579536002006	Block2006
953300	3013	170579533003013	1000000US170579533003013	Block3013
953300	2024	170579533002024	1000000US170579533002024	Block2024
953300	3020	170579533003020	1000000US170579533003020	Block3020
953600	1035	170579536001035	1000000US170579536001035	Block1035
953600	1039	170579536001039	1000000US170579536001039	Block1039

# Practicing Tableau- Population in 2020





# Creating GeoIDs

- Developed a Python script utilizing the U.S. Census Geocoder API
- Script sent requests for each school's address and extracted GeoIDs from '2020 Census Blocks'
- Merged retrieved GeoIDs with the original dataset
- Saved final dataset as an Excel file for Tableau visualization

```
1 file_path = "/Users/ritzisc023/Dropbox/My Mac (MacBook-Pro.zyxel.com)/Downloads/Señior assignments/Community partners/Student_Toy_data.xlsx"
2 school_df = pd.read_excel(file_path, sheet_name="SchoolDemographics")
3
4 # Empty list for results
5 results = []
6
7 # Base URL for the U.S. Census Geocoder API
8 base_url = "https://geocoding.geo.census.gov/geocoder/geographies/address"
9
10 # Loop through the school data set and gets the street, city, state etc.
11 for index, row in school_df.iterrows():
12     address_params = {
13         "street": row["SchoolAddress"],
14         "city": row["City"],
15         "state": row["State"],
16         "benchmark": "4", # Uses the most recent Census data
17         "vintage": "4", # Uses the current geography data
18         "format": "json"
19     }
20
21 # Sends the API request to the Census Geocoder with the formatted address parameters
22 response = requests.get(base_url, params=address_params)
23
24 # Check if the API request was successful
25 if response.status_code == 200:
26     data = response.json()
27     try:
28         # Check if there are any matching addresses in the response
29         if data["result"]["addressMatches"]:
30             # Extract the GEOID from the "2020 Census Blocks" section of the response
31             geoid = data["result"]["addressMatches"][0]["geographies"]["2020 Census Blocks"][0]["GEOID"]
32         except KeyError:
33             geoid = "No Match Found"
34     else:
35         geoid = "Error"
36
37 # Append the school name, address, and retrieved GEOID to the results list
38 results.append({"School": row["SchoolName"], "Address": row["SchoolAddress"], "GEOID": geoid})
39 time.sleep(1) # Avoid API rate limits
40
41 # Convert results into a DataFrame and display
42 geoid_df = pd.DataFrame(results)
43
44 # Save the results to a CSV file
45 geoid_df.to_excel("/Users/ritzisc023/Dropbox/My Mac (MacBook-Pro.zyxel.com)/Downloads/Señior assignments/Community partners/School_GEOID_M")
46
47 # Print the first few rows to check
48 print(geoid_df.head())
```

	School	Address	GEOID
0	MacArthur High School	1499 West Grand Avenue	171150017002000
1	Ball Charter School	2530 East Ash Street	171670024003025
2	Trinity Lutheran Church & School	515 S MacArthur Blvd	171670012001007
3	Stephen Decatur Middle School	1 Educational Park	171670012001007
4	Lincoln Magnet School	300 South 11th Street	171670042003019

# Census Geocoder API

## Find Address Geographies

House number and Street name:

City:

State:

ZIP Code:

Benchmark:



Vintage:



Get Results

### Input:

**Address:** 1499 West Grand Avenue

**City:** Decatur

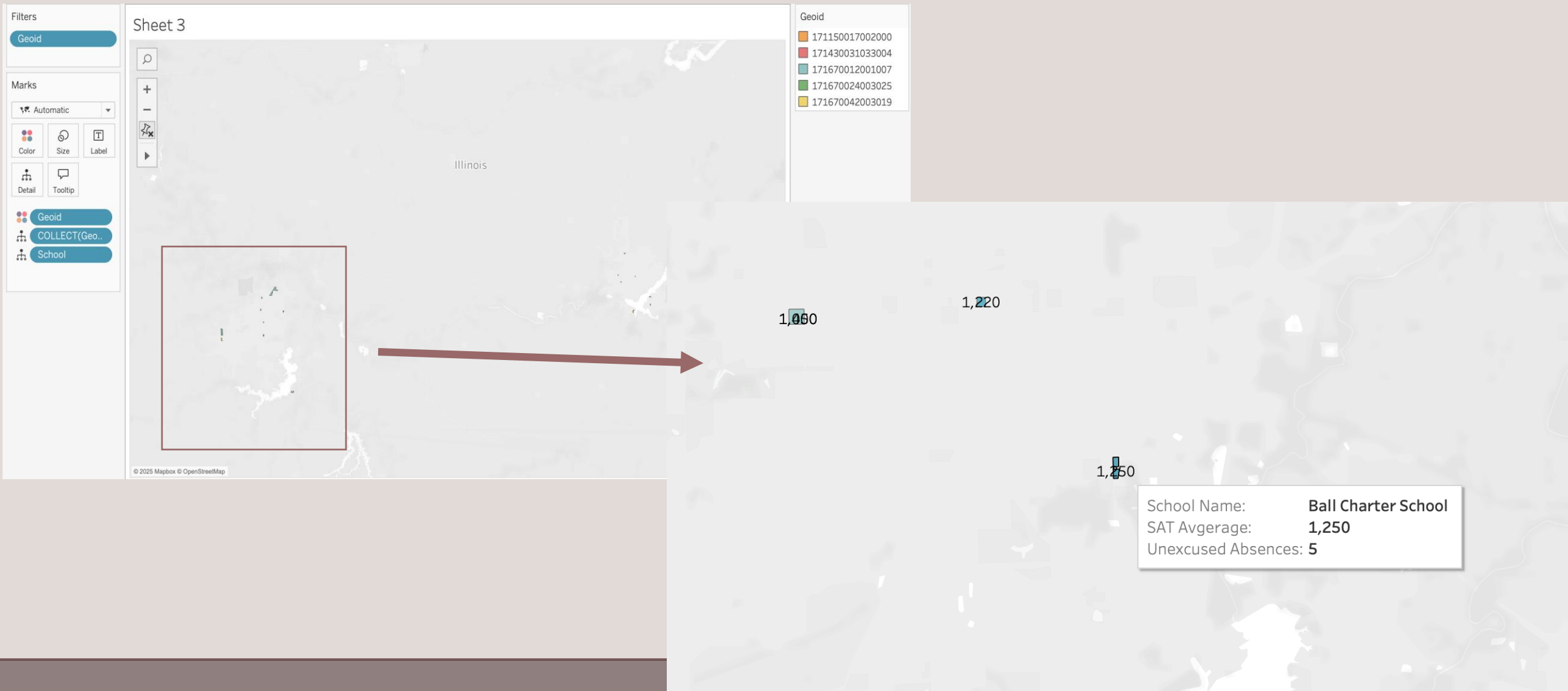
**State:** Illinois

**ZIP Code:** 62522

**Benchmark:** Public\_AR\_Current (4)

**Vintage:** ACS2024\_Current (424)

# Toy Data Set Visualizations





Thank you!