

# *How Data Visualization Can Tell the Story*

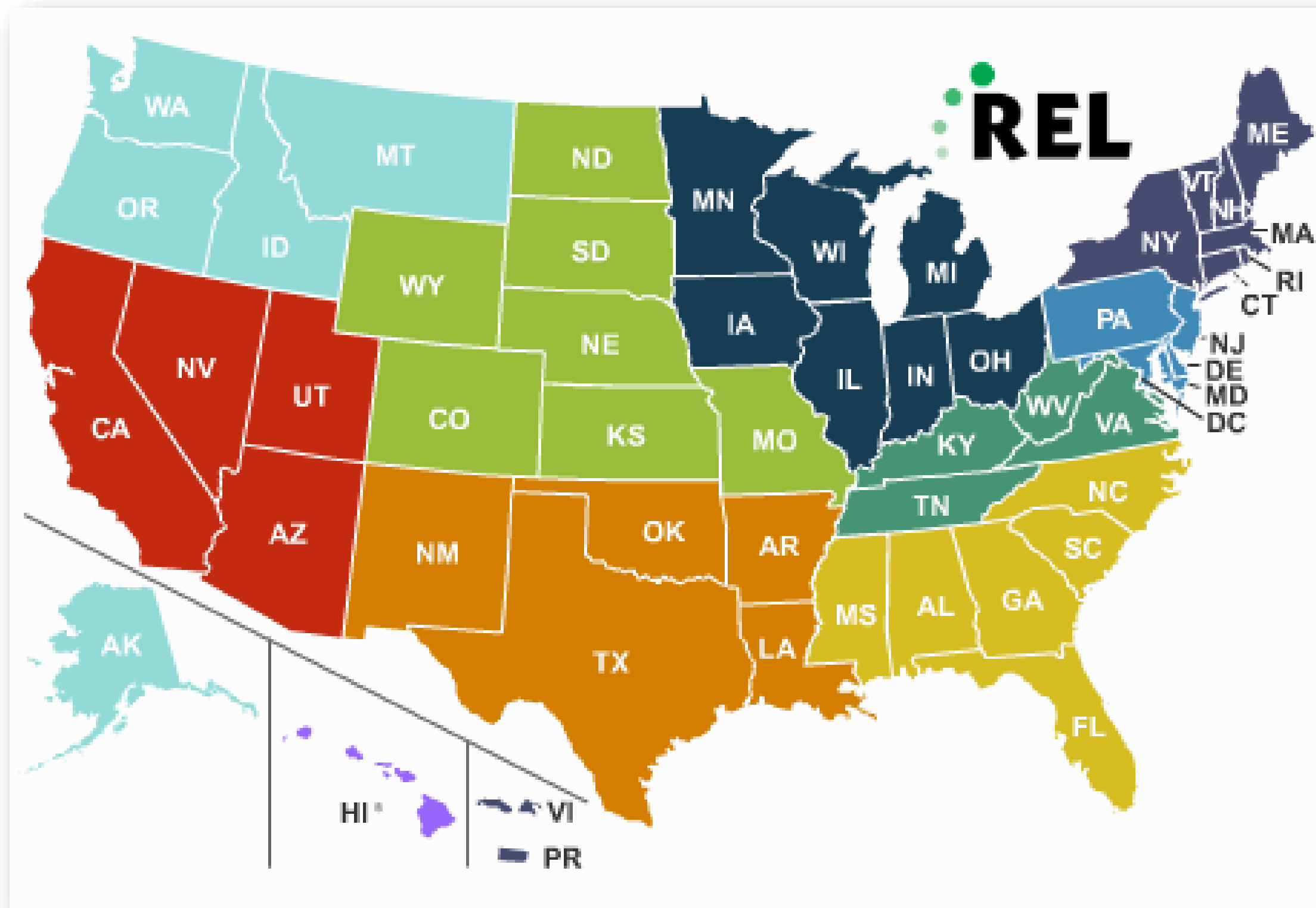
Teachers' Institute and Leading Change Conference – June 2021

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Ten RELs work in partnership with LEAs, SEAs, and others to use data and research to improve academic outcomes for students



# RELs: Three Main Activities

- ✓ Conduct applied research
- ✓ Facilitate the flow of actionable, credible, up-to-date research evidence
- ✓ Provide technical support around data collection, evidence use, and research

# Data Visualization Use

Infographics and other data visualizations can communicate information more quickly and powerfully than long reports with dense narratives (Krum, 2013).

# Data Visualization Use

School and district leaders can use data visualization to:

- Share key takeaways from data with teachers, students, and families
- Provide context for data-driven decisions in a more engaging and intuitive way
- Build interest in a program or initiative

# Reflection

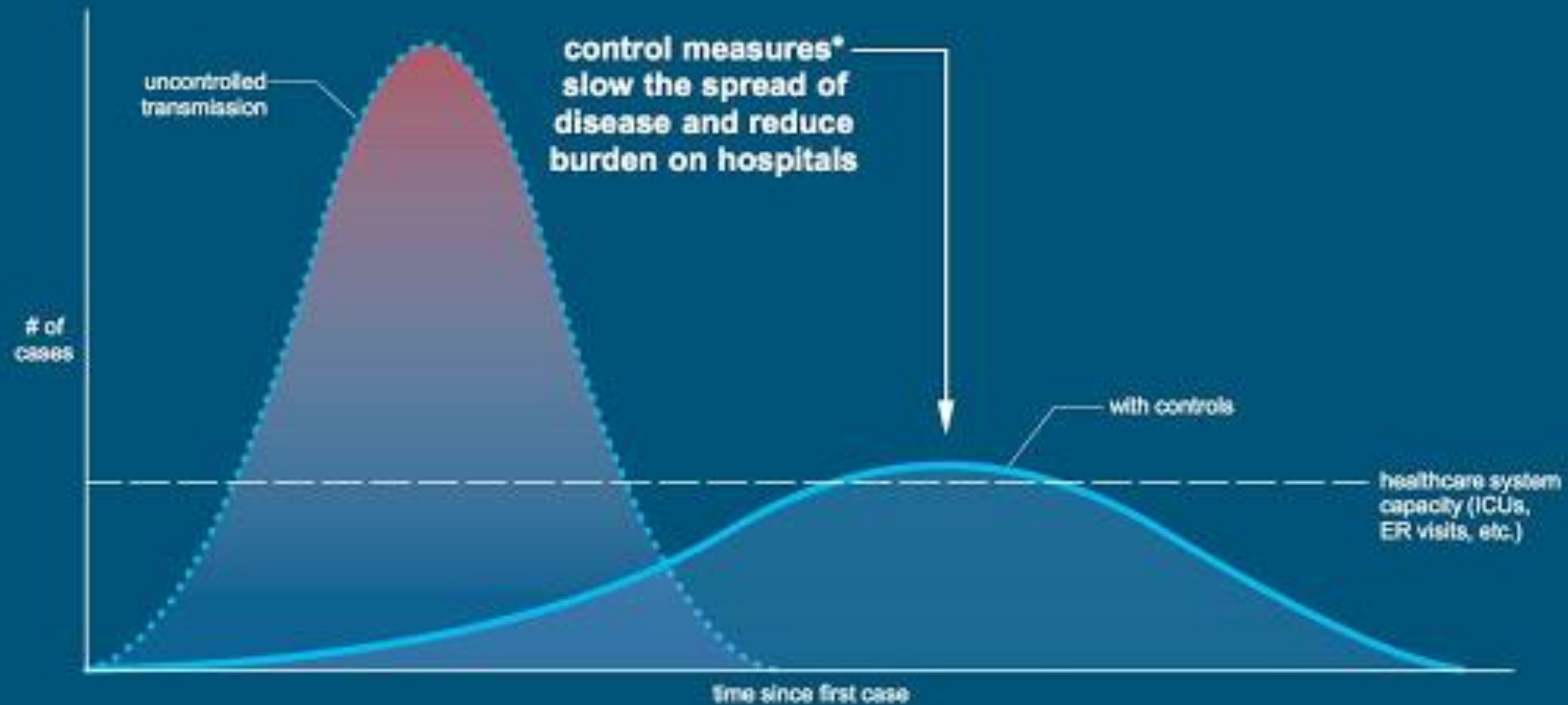


When has a data visualization stuck with you?

What made it memorable?



## LOWER AND DELAY THE EPIDEMIC PEAK



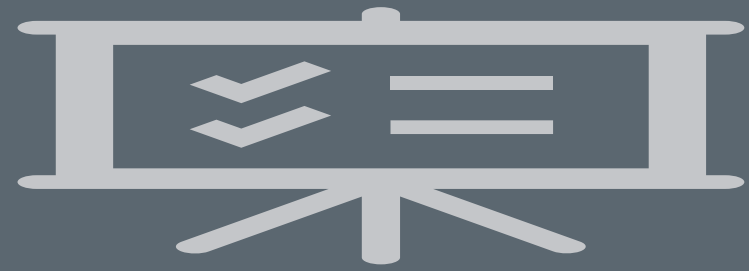
\* control measures may include handwashing, teleworking, limiting large gatherings, minimizing travel, etc.

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# Data Visualization Guidelines: Planning



Define your audience and consider what is important to them



Plan the content for your visual beforehand



Choose a template (or create one!) that is right for the data you are displaying



Create your visual with your target audience in mind (e.g., colors, fonts, images)



# Practice Scenario

Your district is starting a new program to increase the number of students who enroll in postsecondary opportunities. You want to make the case that this program is needed and valuable.

What are some potential audiences for a data visualization?

What information would be important to them?

What visuals might speak to your audience(s)?

# Practice Scenario Example

What are some potential audiences for a data visualization?

## School Board



What information would be important to them?

## Return on investment

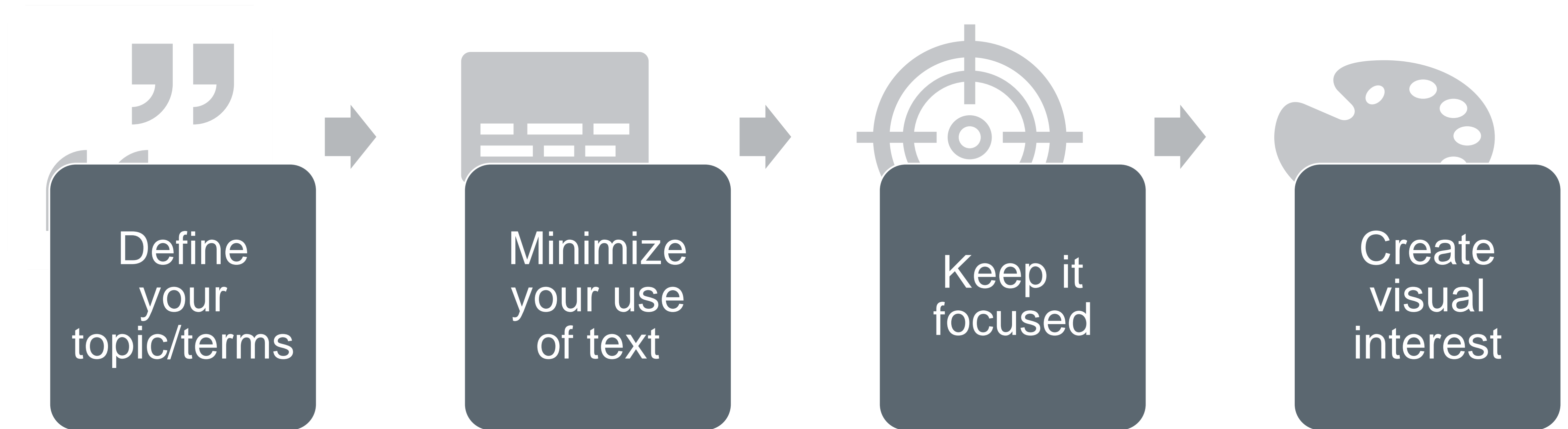


What visuals might speak to your audience(s)?

## Graphs, pictures of students



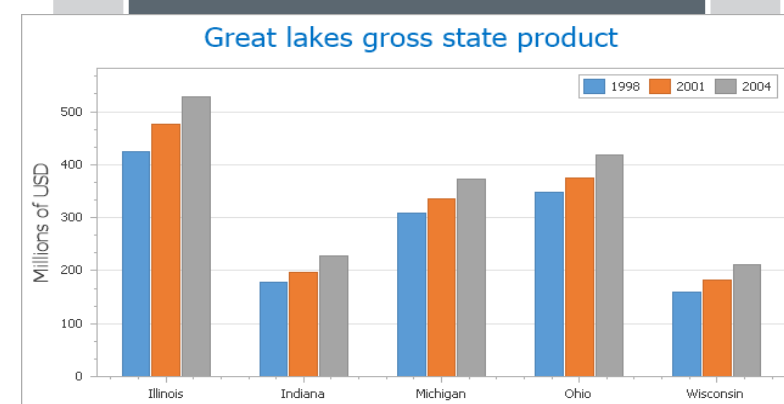
# Data Visualization Guidelines: Developing



# When and What is Effective

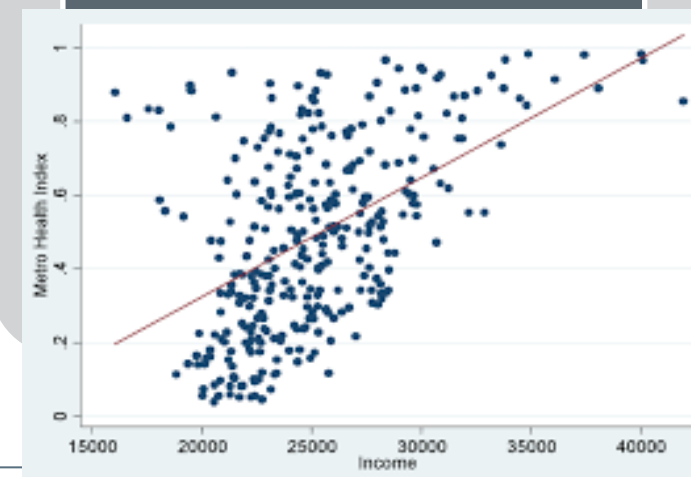
When comparing things

Side by side or back-to-back bars, slope graph



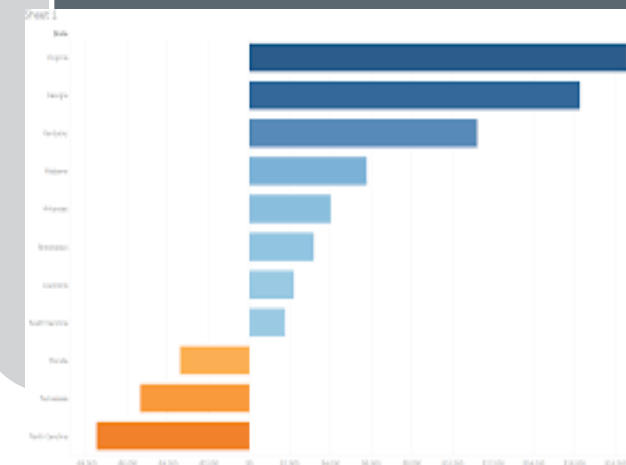
When comparing against a benchmark

Bar chart or scatter plot with reference line



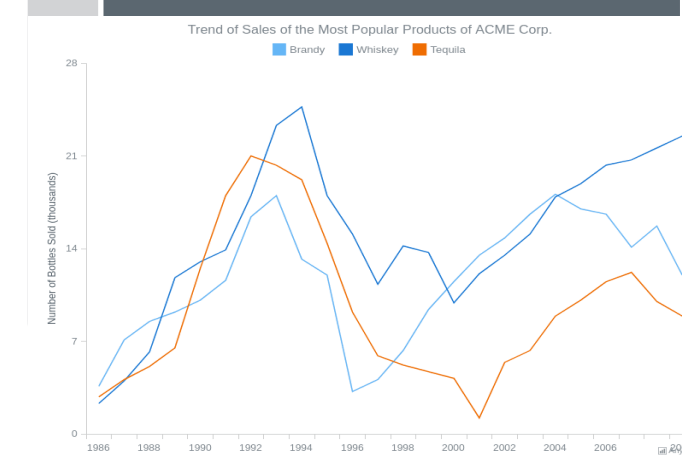
When presenting survey results with a Likert scale

Stacked bar, diverging bar



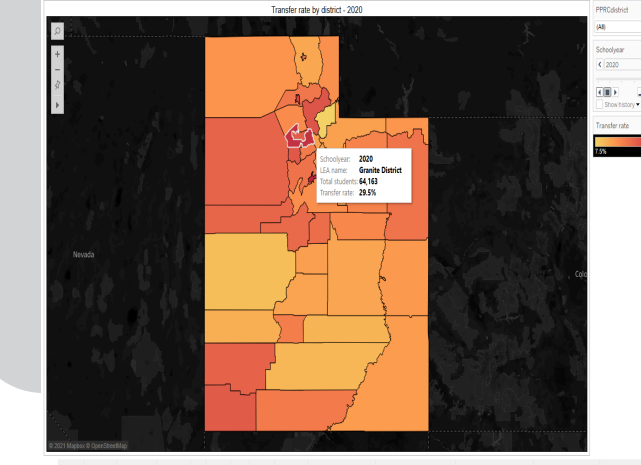
When things change over time

Line chart, slope graph, flow chart



When showing variations by region/location

Map



When a single chart is not enough

Data dashboard





# Example 1: Chronic Absenteeism

## DATA VISUALIZATION

can help educators address chronic absence

Use data to create a detailed picture of your chronically absent students in order to customize student supports



### What is chronic absence?

**10%** 

Students are typically considered chronically absent when they miss 10% of school/class time for any reason (excused or unexcused).<sup>1</sup>

### How prevalent is it?



Almost 1 in 6 (roughly 8 million) students in grades K–12 nationwide is chronically absent, with even higher rates for racial/ethnic-minority, low-income, and high school students.<sup>2</sup>

### Why is it important?



Chronic absence is associated with:

- Reading difficulties in grade 3
- Lower math proficiency in middle school
- Higher dropout rates in high school



# Example 1: Chronic Absenteeism

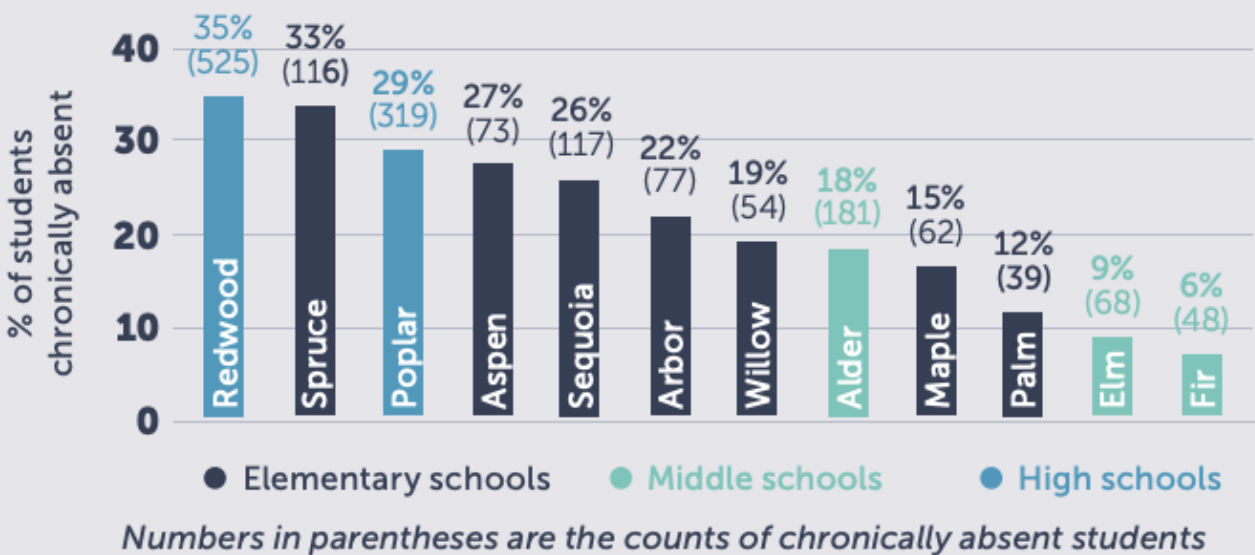
## Example Data Visuals



The following are a few ways to visually display and analyze chronic absence data. The data are drawn from the hypothetical Oak School District, which has 12 schools, spanning elementary to high school. The district leaders want to better understand patterns of chronic absence to identify systemic problems and provide supports to struggling schools, groups of students, and communities.

Note: The *chronic absence rate* refers to the percent of students who are chronically absent.

Chronic absence rates by school in Oak District, 2016/17



**What the data show:** Chronic absence is a bigger concern in Oak’s elementary and high schools than in its middle schools. Note that schools with low chronic absence rates still can have large numbers of chronically absent students.

**Possible next steps:** To get a fuller picture, the district could look at additional chronic absence metrics by student subgroup, and learn from schools with lower chronic absence rates.

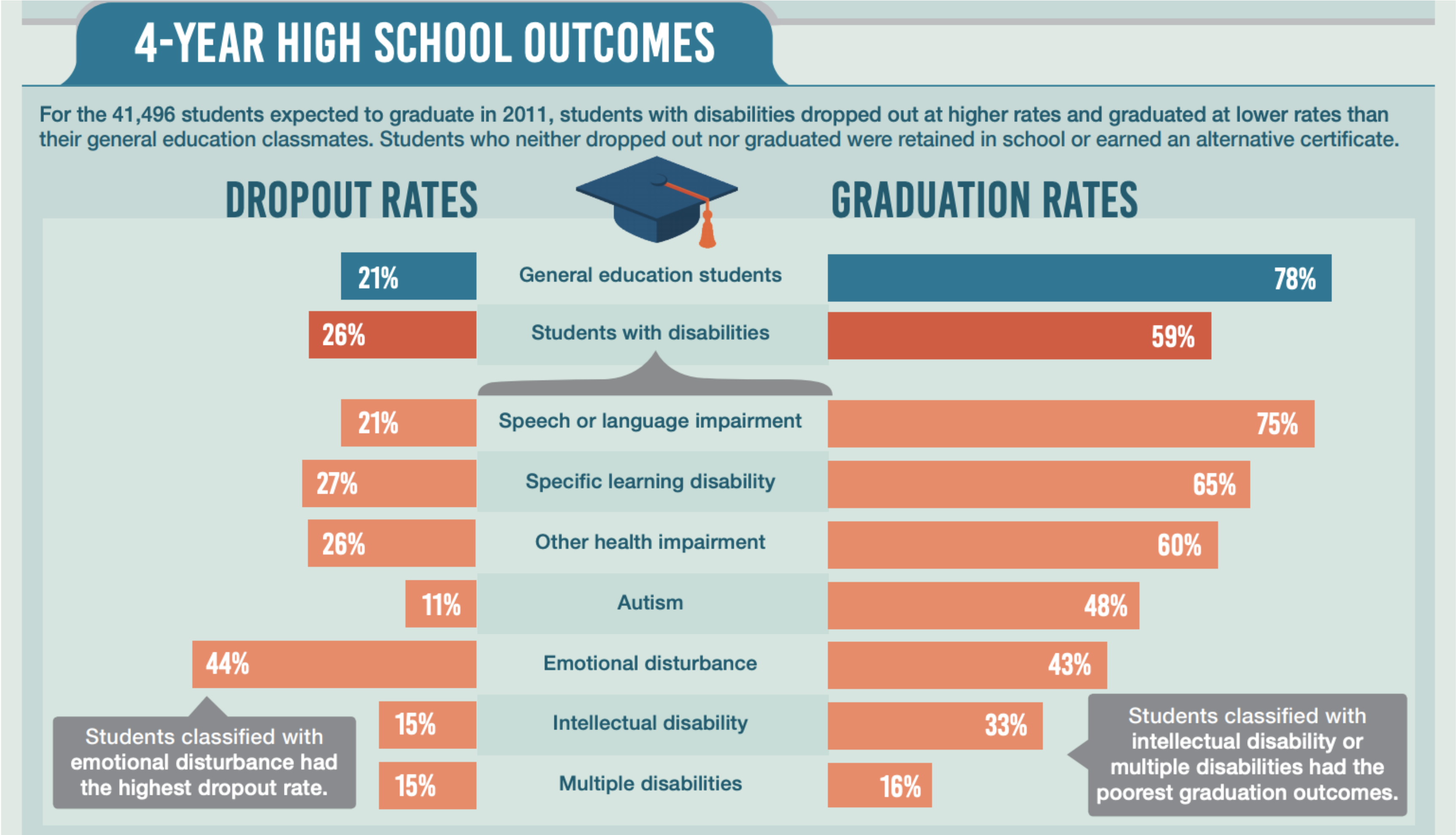
Map of Oak District schools, 2016/17 shaded by chronic absence rate



**What the data show:** Schools with the largest percentage of chronically absent students are concentrated on the west side of Oak District.

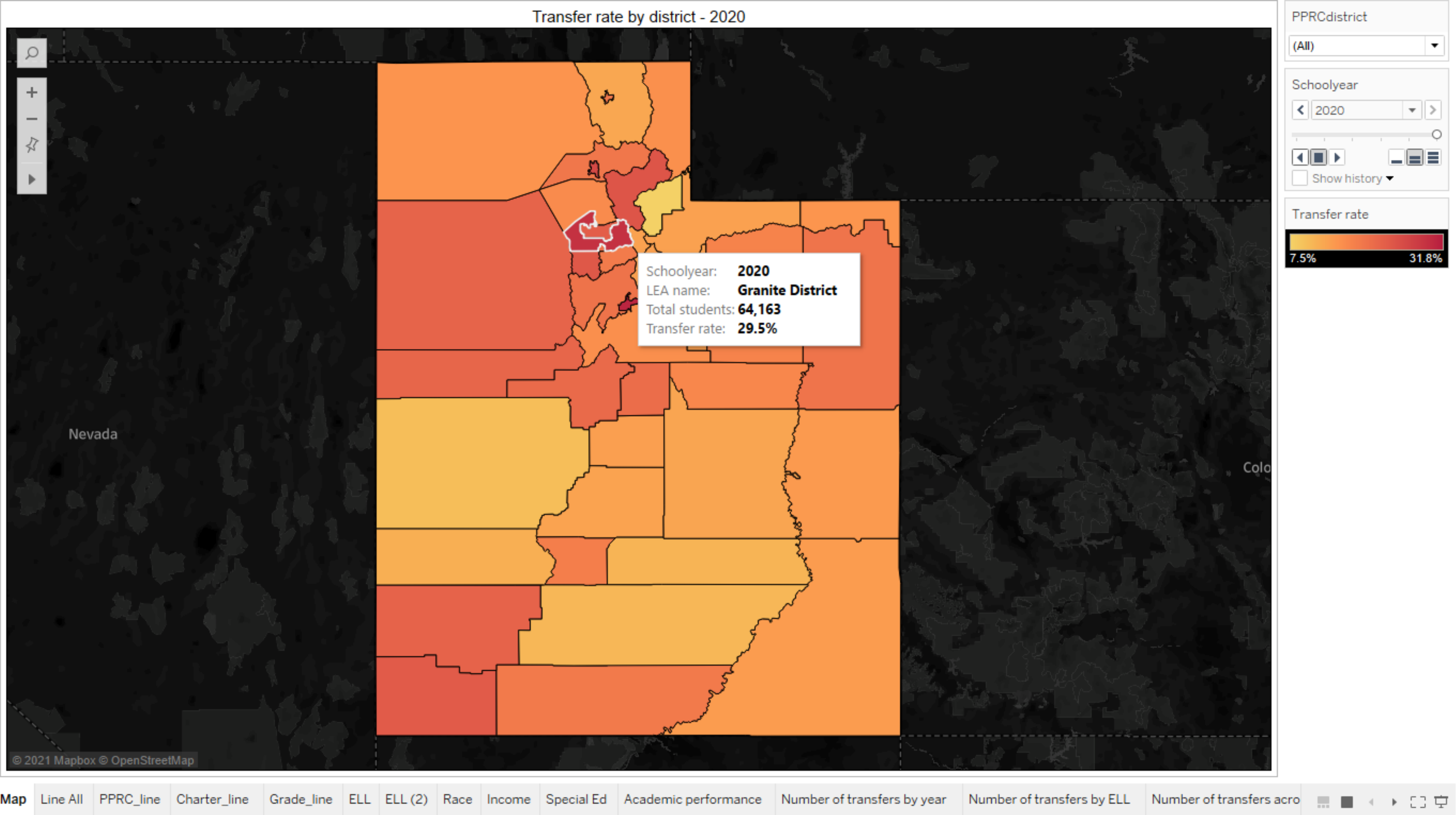
**Possible next steps:** District leaders may want to better understand this pattern — is it a transportation problem, or is it related to hardships of living in high-poverty neighborhoods? Knowing this information can help target resources and family support services.

# Example 2: Outcomes for Students with (Dis)abilities



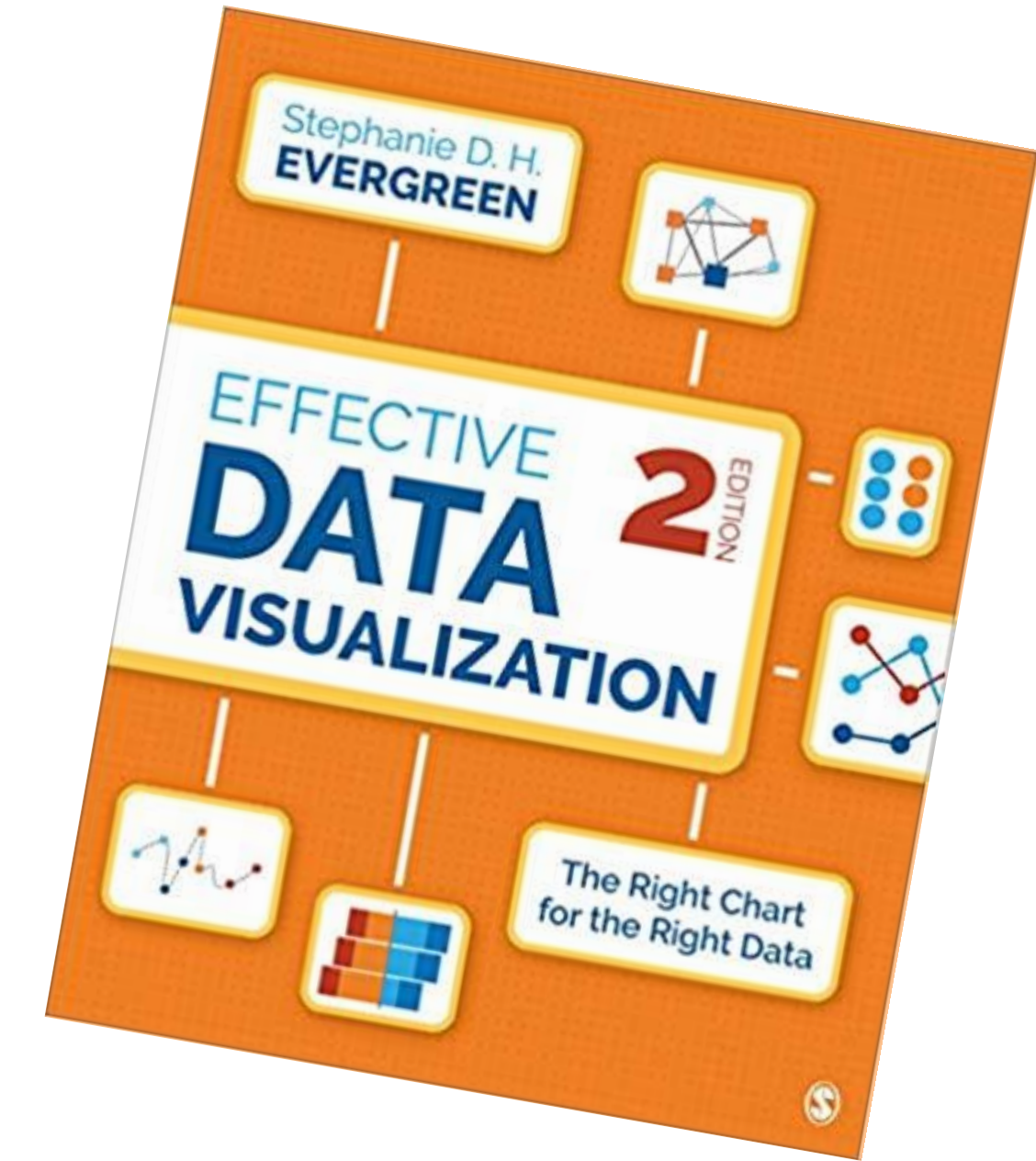


# Example 3: Student Mobility



# Data Visualization Resources

- [The Data Visualization Catalogue](#)
- [Stephanie Evergreen](#)
- [Data Visualization Toolkit from DaSY](#)
- [Core Principles of Data Visualization](#) from [PolicyViz](#)





# Final Reflections

- What resources do you have to create data visualizations?
- What are some potential data visualization topics that would be useful in your school or district?
- What are some key elements of data visualizations you want to use?





# Feedback Survey

# References and Resources

*DaSy: The Center of IDEA Early Childhood Data Systems.* SRI International.  
<https://dasycenter.org/about/>

*The Data Visualisation Catalogue.* <https://datavizcatalogue.com/about.html>

*Evergreen Data.* <https://stephanieevergreen.com>

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# Thank you!

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