STEAM Meets SEL: Building Empathy Through Data Workshop

Monday, March 6, 2023 @ 3:30 - 5:00pm CST

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STEAM Meets SEL: Building Empathy Through Data Description
Though data is centered primarily in STEM fields, it is a powerful tool for helping us better understand ourselves and others. Students can use data to understand how others' experiences differ from theirs and recognize when certain voices are absent. In this hands-on workshop, we'll introduce resources that get students engaging with data about themselves, their community, and the broader world in a way that builds empathy and drives the desire to think critically and ask data-driven questions.

All are encouraged to:

- Participate fully, openly, and inclusively for yourself and others
- Listen to understand
- WAIT – Why am I talking; Why aren't I talking
- Lean into your learning edge, it's OK to be raggedy
- Acknowledge and respect differences and similarities
- Speak from personal experience – use "I" statements
- Take risks, ask questions, be courageous

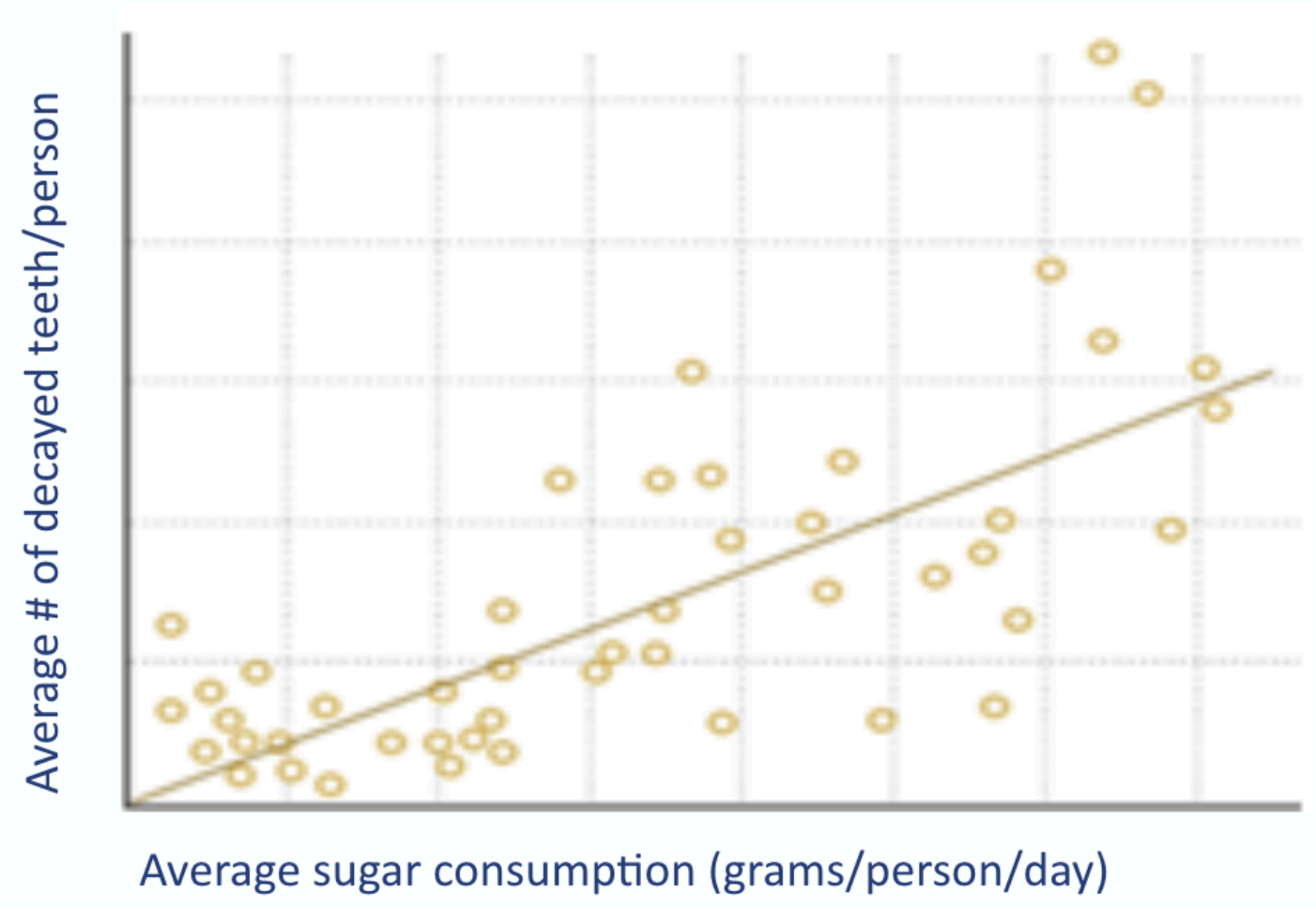
- Have some fun with this

Workshop Resources:

Introductions & Why?

1. Fist-to-Five:
    a. How Many of Your Students Struggle to Connect with Data?
    b. How Many of Your Students Struggle to Make Sense of Data?

2. What do you notice?

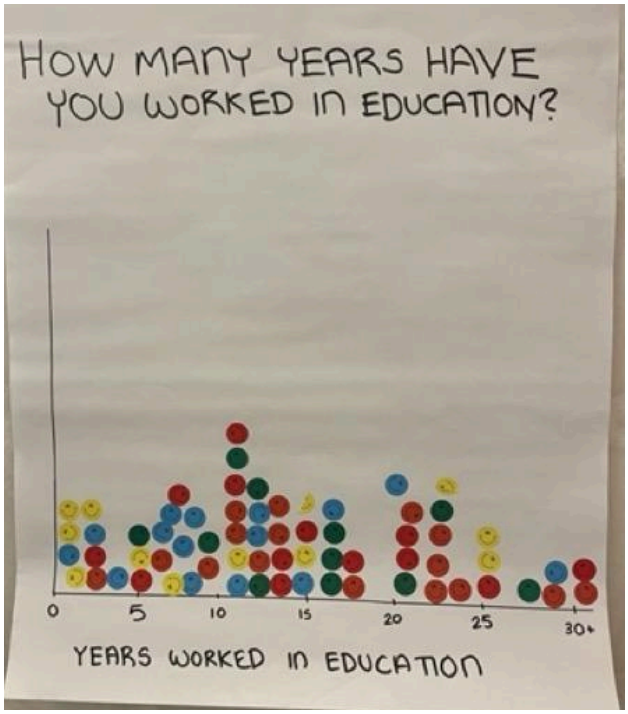


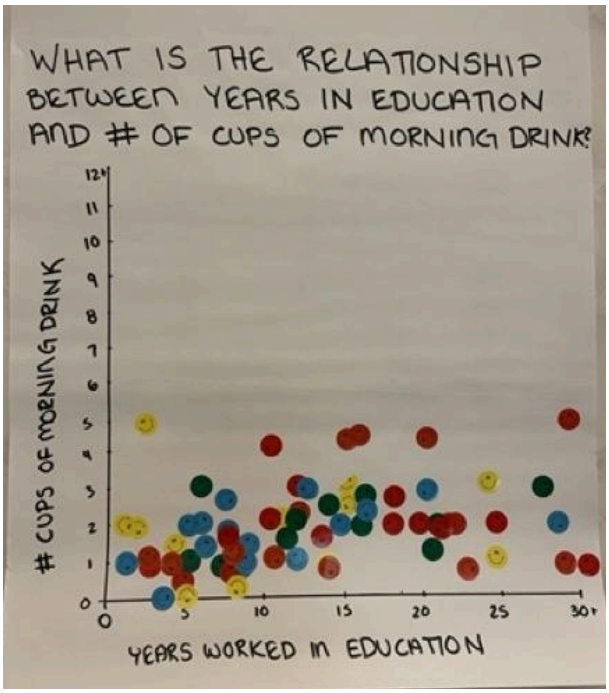
Source: http://www.pewinternet.org/2015/09/10/what-the-public-knows-and-does-not-know-about-science/

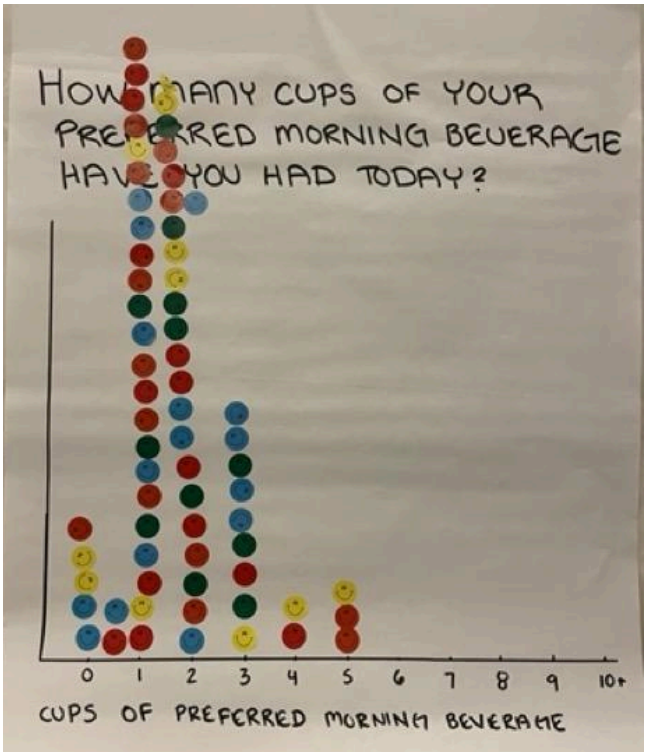
3. Turn & Talk
    a. What did you **see or hear** that resonated with and/or suprised you from these data examples?
    b. What do you **think** is going on or could be at play in these data examples?
    c. What do these data examples make you **wonder** about for space in education?

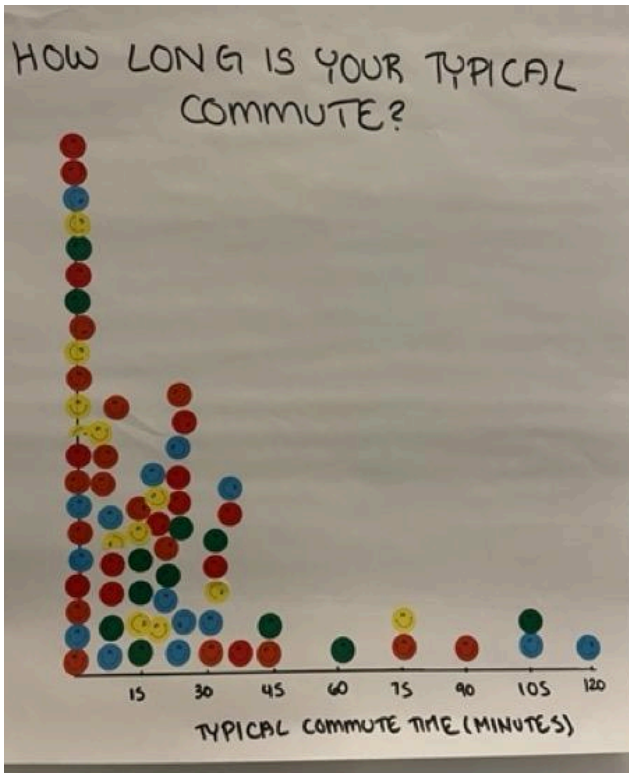
How?

4. Activity: Co-Creating Data - Add your responses to the flipchart paper:
    a. How many years have you worked in the education space?
    b. How many cups of preferred morning drink have you had today?
    c. What is your relationship between the number of years working in education and morning drinks consumed?
    d. How long is your typical commute?
    e. How comfortable are you with teaching data analysis?

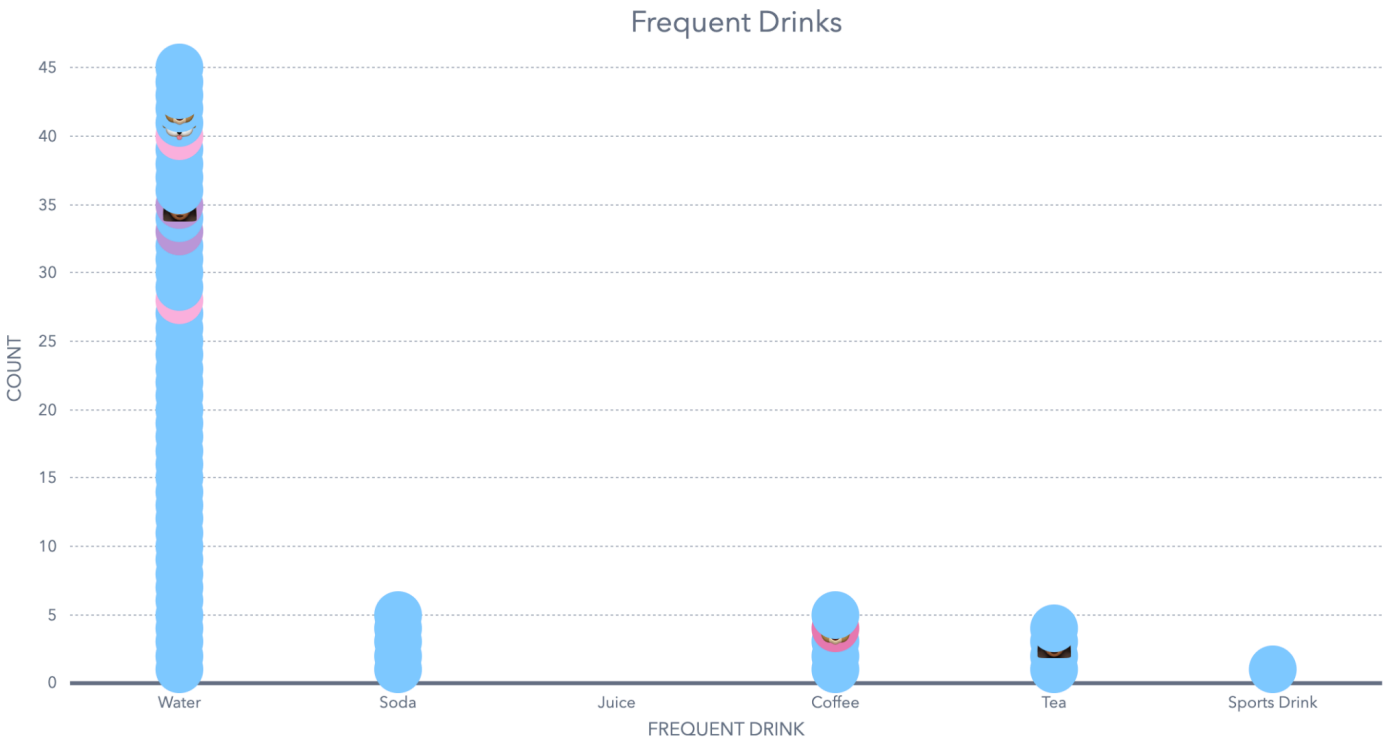




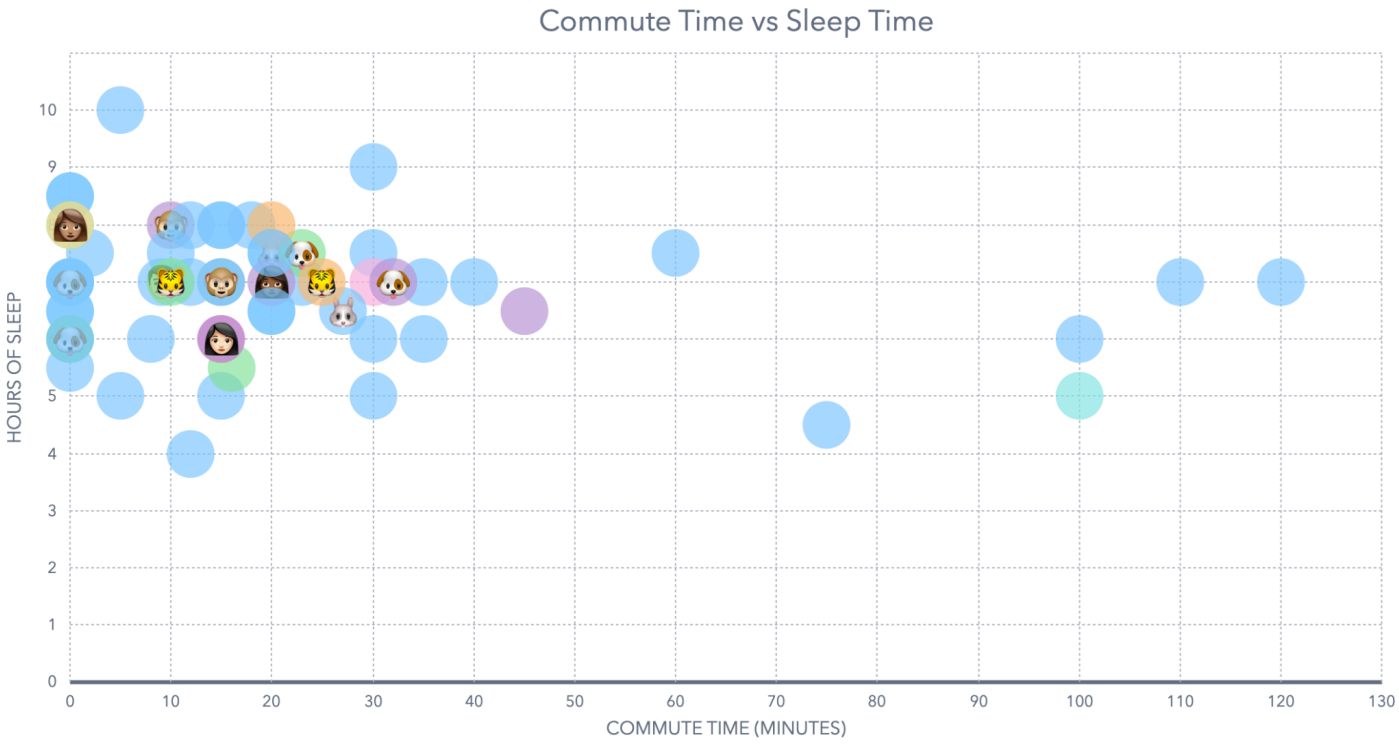




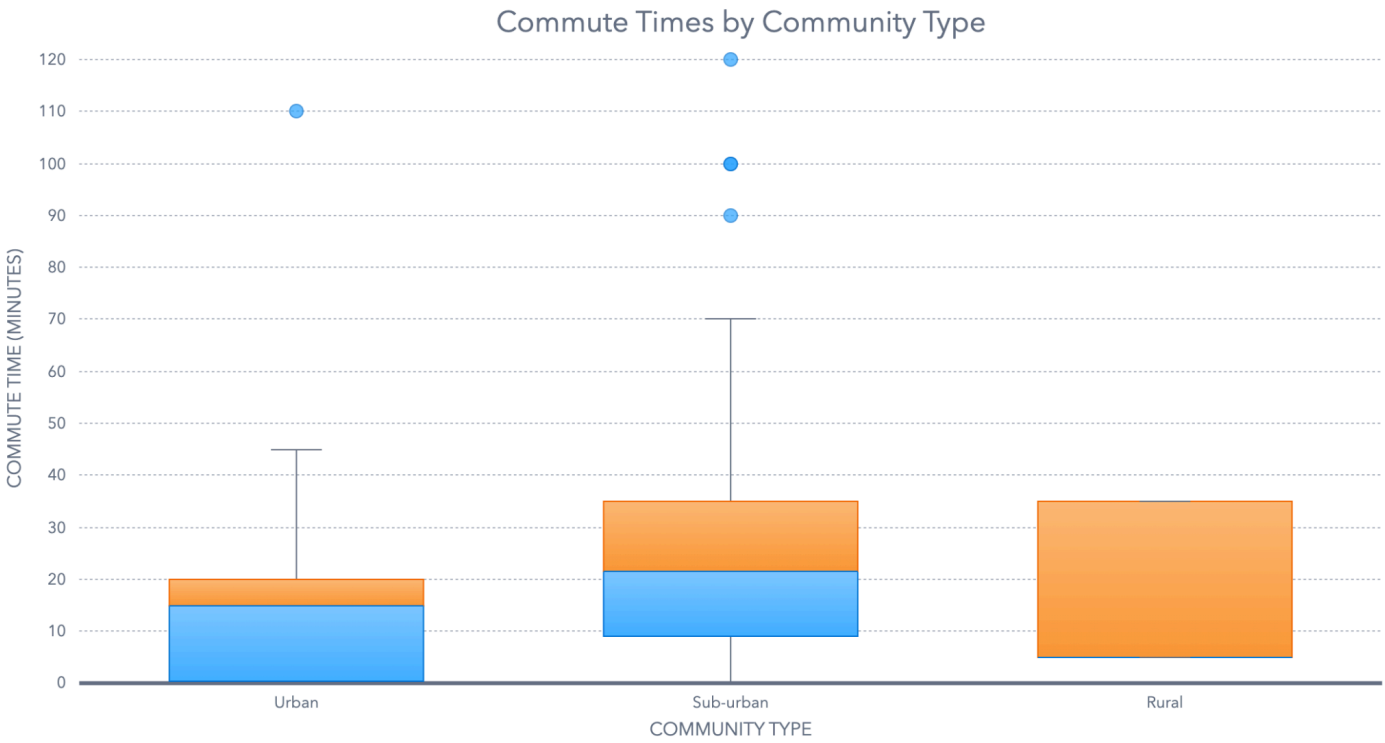
5. Activity: Co-Creating with Technology -[SAS DataFly Workshop Activities]
    a. What drink do you consume most often?



b. How long is your typical commute and how much sleep do you get on a weeknight?



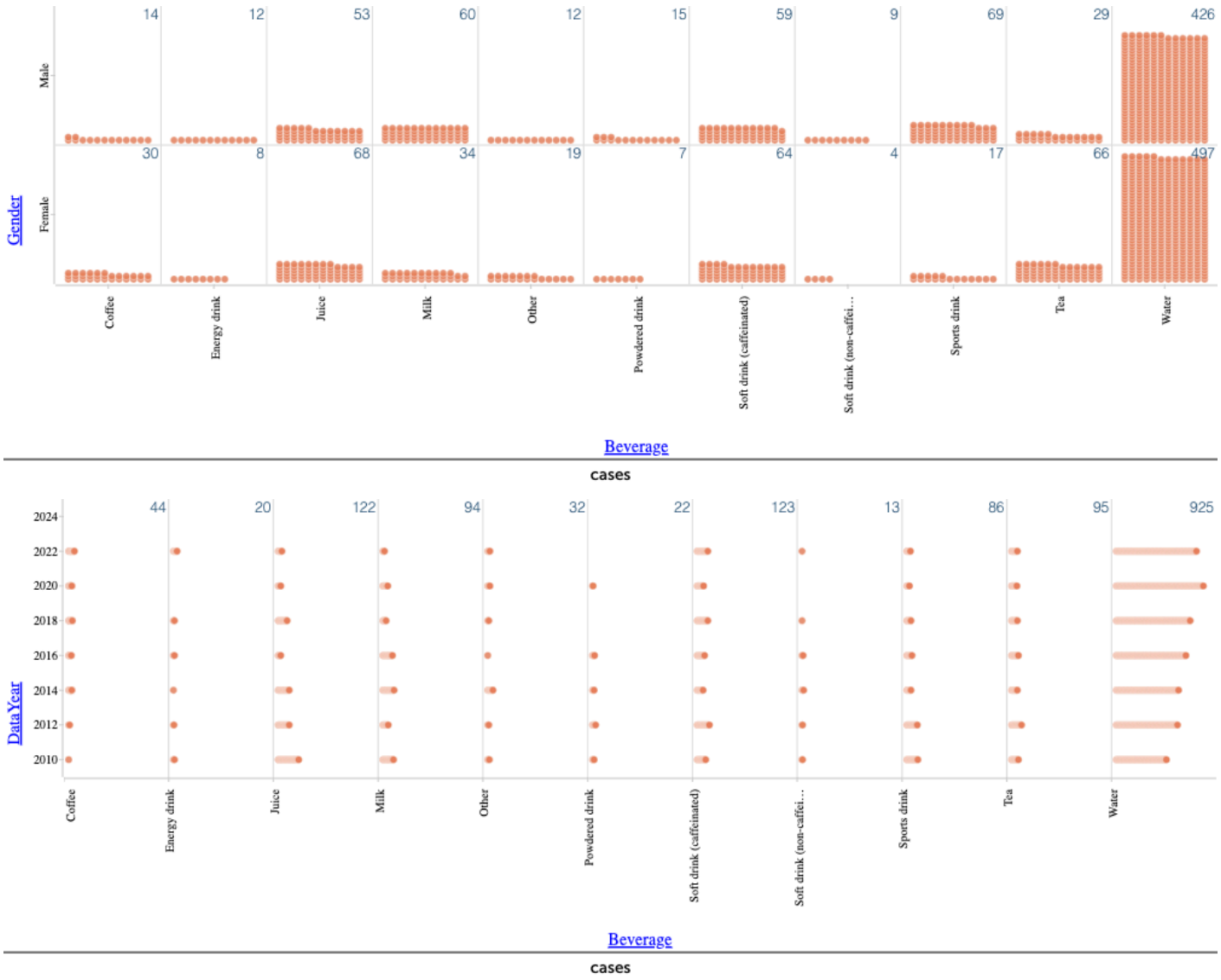
c. How does community type relate to commute length?



6. Turn & Talk
    a. How did it feel to own the data? How may your students feel?
    b. How did it feel to co-create visualizations, with and without tech? How might your students feel?
    c. How did it feel to learn more about others in the room? How might your students feel?

What and Who?

7. Exploring more data with technology - [Random Sample of US Students (All Genders, All Grades)]



8. Quick Write or Doodle: Reflection - respond to "What is coming up for you through these examples as it relates to 3 aspects of humanizing data, STEAM, & SEL?"

Taking this Forward

Reflect, Consider Next Steps, & Share Resources

9. Flip Chart: Reflect out - add your responses to the following questions with post-it notes
    a. **Extend:** How do these ideas extend or broaden your thinking in new directions?
        i. Data visualization is a very tricky "next step" for stds & teachers
        ii. Not being "afraid" of data just because I don't have background in it. I can still learn with my students & model valuable questions with them.
        iii. Bringing data into a lesson will make it more engaging, not less.
        iv. What is the role of the "data story"? Narrative, single points, vs larger trends? How to bring together?

v. Loved concept of going from “me” to “we” when considering learning goals for diff ages
vi. Make other stakeholders understand and interpret data correctly and critically
vii. I can envision working data literacy & visualization into my current science courses more systematically
viii. Appreciate the framing of humanizing data and using it to build community to make datasets more engaging
ix. Fantastic examples of bringing students into conversations using data!! Thanx!!!!
x. Incorporating data cross-curricularly + co-creating it with students
xi. Using tech to broaden lessons for students and to digitally capture their answers
xii. I work in the field of accessibility, so thinking about access to digital data tools for diverse populations is something I will be exploring. Accessible data visualization in cognitive sensory, + physical disability categories.
xiii. Leveraging opportunities to engage student groups in co-creating & comprehending real-time data through the use of analog & digital/tech avenues
xiv. Humanizing data helps students connect with it better → more engaging
xv. As a science teacher these ideas help me provide more context to students
xvi. I really hadn’t connected data to building empathy before today. I look forward to trying to incorporate it in my curriculum dev.
xvii. Using DataFly in my work w/ admin to show usefulness of using & teaching data outside of Maths
xviii. These ideas encourage me to make data more accessible and understandable to students
xix. Data can integrate math + humanities
xx. Making data personal to my students gives buy-in
xxi. Loved learning tangible tools + hands-in techniques. Enjoyed getting practical instead of staying theoretical.
xxii. Way to get sts more familiar w/ data while building connections
xxiii. Show the story to help students appreciate data
xxiv. Introduce humanizing data to staff
xxv. Easy to show data in all ages
xxvi. As a K-5 educator, it helps me visualize opportunities of making these concepts age-appropriate
xxvii. Use data thru-out the curriculum in ALL subject areas
xxviii. To use data as a community building tool and to approach challenging topics
xxix. I am now thinking of more ways to collect and analyze data in my class
xxx. Always critically think about the sourcing methods of data and who’s creating the depictions/interpretations

b. **Challenge:** What still seems challenging or confusing? What questions or wonderings do you have?
    i. How about quantity children's artwork?
    ii. More non-visual ways to analyze data (either for students w/ visual disabilities of for supporting students who struggle w/ visual)
    iii. Ensuring students understand what the data says and how to use this to improve their outcomes/or meet specified goals
    iv. Backend understanding how these data visualization tools work + feeling confidence w/ them
    v. I want to examine my own ability to interpret data more closely - what am I missing? Am I thinking critically enough?
    vi. Sometimes even "real" data is not correct (fake news etc)
    vii. How can I build in the concept of confidence into the work we do? When are correlations real or spurious?
    viii. I want to learn more about the different kinds of data representations - how to read them, how to make theme, how to teach them
    ix. Maybe how to clearly or quickly incorporate into existing curricula
    x. Getting educators + others to think about who is truly excluded in these activities + how to eliminate that exclusion
    xi. How can I continue to develop/practice beyond this session?
    xii. How to get students to apply to academic data + goals
    xiii. Using this in a classroom where students are impressionable and influenced by their peers could skew data
    xiv. Setting everything up
    xv. How to fit it in with very structured curriculum
    xvi. Does SAS automatically choose graph types or do I need to set it up before using the poll?
    xvii. What background knowledge may students need to be data literate?
    xviii. Helping students understand data visualizations
    xix. I'm still searching for the best ways for teachers to collect and distribute data visualizations with students while maintaining privacy
    xx. How do you talk about data integrity w kids?
    xxi. Representative samples & not generalizing?
    xxii. Tools and format to make it easier to represent data
    xxiii. It was interesting to see the two differences between using stickers/post-its and then using tech. I think students would really enjoy using tech
    xxiv. How can we personalize (ex emojis) while still allowing anonymity? (Is this harder in small class settings) (sometimes S's don't want to share why they don't get sleep)

xxv. How to guide discussions of visualizations in K-8?
xxvi. What are the best ways to concisely show issues w/ datasets?

c. **Apply:** What <u>one</u> change will you make in your work around using data to apply your new ideas?
   i. I really enjoy the ideas of using data creation as a tool for SEL
   ii. Using technology. Visualizing data much more to share big pictures and relative view.
   iii. I will be sure to begin earlier units (that require data analysis) with co-creating data sets
   iv. Connecting data to advocacy
   v. Using this as a tool for student input
   vi. Provide context around all data I present and discuss
   vii. Using DataFly & Census at School. So awesome
   viii. Get Sts more involved w/ data
   ix. Make data-driven decisions so as to improve learner's learning journey → change content which is not working
   x. I am going to try and implement this as a wkly practice
   xi. Use <u>one area</u> of historical data to drive my practice
   xii. Pay extra attention to biases/assumptions → you can make data say whatever you want!
   xiii. Instead of using a mood scale in my morning meeting, I can use the chart paper to collect and discuss. I can relate this to previous math lessons.
   xiv. Thinking about how I interpret the feedback data I get after my PL sessions
   xv. Use data more frequently to expose children
   xvi. I want to use some CODAP data to develop new science lessons. Need to explore it more!
   xvii. I'm going to have students share data about their… and connect it to variable from other Countries around issue
   xviii. As a guest teacher this gives me new ways to quickly build understanding & rapport
   xix. Making data more relatable & engaging
   xx. Share resources + activities with teachers
   xxi. I love the idea of using data to build a sense of community, I will do this with new teacher training
   xxii. Bringing student data into the initial stages of developing data literacy
   xxiii. Provide more visualizations in addition to raw data
   xxiv. Implement creating data about the students more often!

xxv. Creating a tangible tool to help students gather/create data more easily - we talk about data based decision making a lot, but what data & how are we communicating & representing it
xxvi. Use real-time "confidential" data that is student driven & more "techy" using DataFly
xxvii. Involve students in co-creating perhaps even school-wide
xxviii. Showing data to students with all 4 of my classes and not just the one students are currently in
xxix. Use data when sharing user for Design Thinking Challenge
xxx. Use DataFly!
xxxi. Always question who that data is representing and its implications
xxxii. Using this w/ our interns!
xxxiii. As an instructional coach, I want to try using interactive data during workshops w/ teachers.
xxxiv. I am also thinking about ways to get teachers to use this w/ students as a way to build onto what we do as a school with restorative practices. It feels like a way to bridge an academic skills w/ SEL times! Thanks!

Post-Workshop Resources:

Other STEAM & SEL Data Resources

- SAS DataFly - find more information
- Census at School or International Census at School (currently running in Australia, Ireland, New Zealand, Japan, South Africa, and the USA)
- CODAP - find more information
- Census at Schools + CODAP webinar

More Opportunities to Access Resources for Your Learners…

1. Grab your spot for a personalized FREE complimentary 30-minute "Student Results Breakthrough Session" with Kristin to get your individualized plan for next steps with using data with your learners / in your product: https://calendly.com/dataspire/chat

2. Join us March 13th for **3 Steps to Boost "Analyzing & Interpreting Data" Before Testing** (@ 3:00-4:15pm PDT | 6:00-7:15pm EDT) for a FREE strategy share-out: https://dataspire.tiny.us/031323-workshop

3. Sign up to join the Dataspire mailing list of upcoming workshop and curriculum opportunities

4. Join the mailing list for SAS DataFly to stay connected and up to date with our data literacy initiatives

Other Data Literacy Resources

- Check out more data teaching resources at: https://dataspire.org/data-resources
- Book ideas re: various data literacy, science education, & pedagogy topics - https://dataspire.org/data-and-science-literacy-book-ideas
- NSTA's Science Scope Interdisciplinary Ideas "Data Literacy 101" articles: https://dataspire.org/data-literacy-101-articles
- https://www.veryspecialgames.com/ - Order your own copy of Charty Party (or any other of the great games they make) with a **15% discount using code: DATASPIRE**