



3 STEPS FOR ES & MS STUDENTS TO ROCK GRAPHS - OCT 26, 2023 @ 8:00-9:00AM CDT

<https://dataspire.tiny.us/nsta-3steps-10-26-23>

Looking to help your students with data? Join our FREE Strategy Share-Out "3 Steps to Rock "Analyzing & Interpreting Data" This Year" on **Sunday, November 5th** (more details and register here:

<https://dataspire.mykajabi.com/strategy-share-out>)

Contact Kristin:

kristin@dataspire.org

609-212-3351

<https://dataspire.org>

@kristinhunterthomson ([LinkedIn](#))

@dataspire.edu.eval ([Facebook](#))

@dataspirededucators ([Facebook Group](#))

@dataspire5784 ([YouTube](#))

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3 Steps for ES & MS Students to Rock Graphs Description

Are you baffled by what your students do with data? Not sure how to get your students making better claims or graphs? Come explore classroom-ready and engaging strategies to build data skills in our youngest learners, while working less hard.

Please complete the Workshop Evaluation: [NSTA Workshop Evaluation](#) (or in the App)

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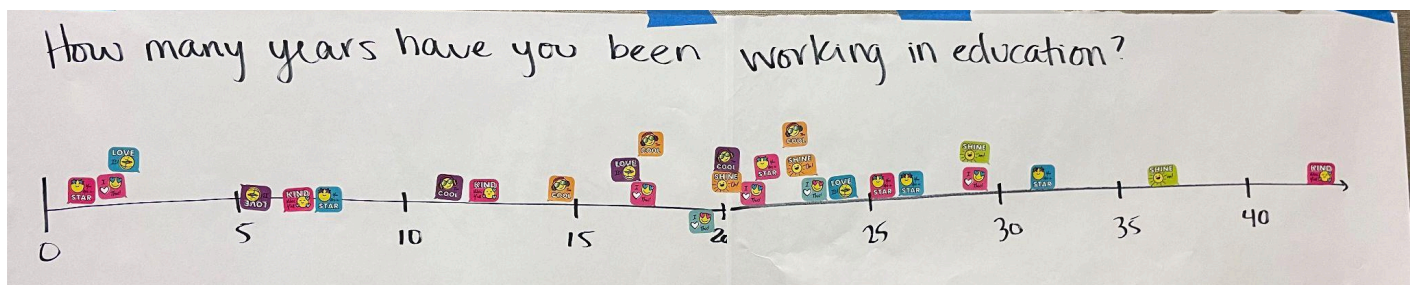
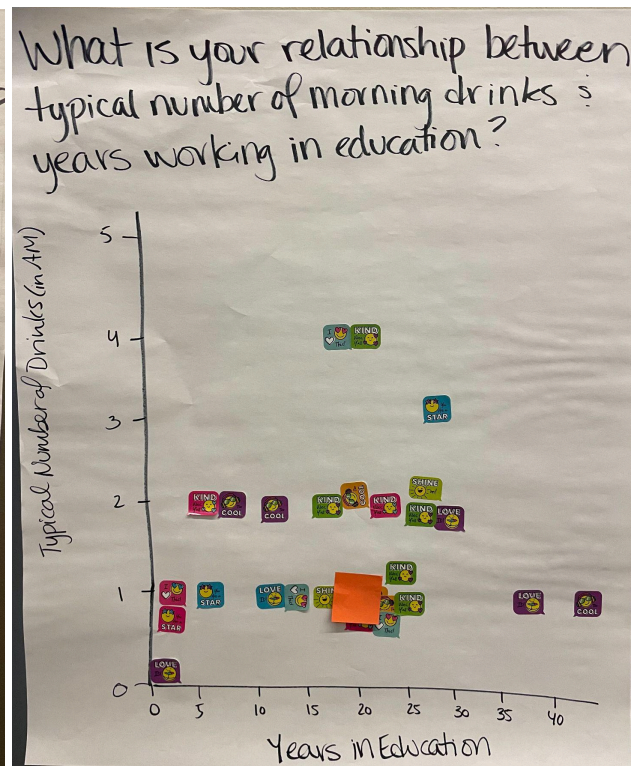
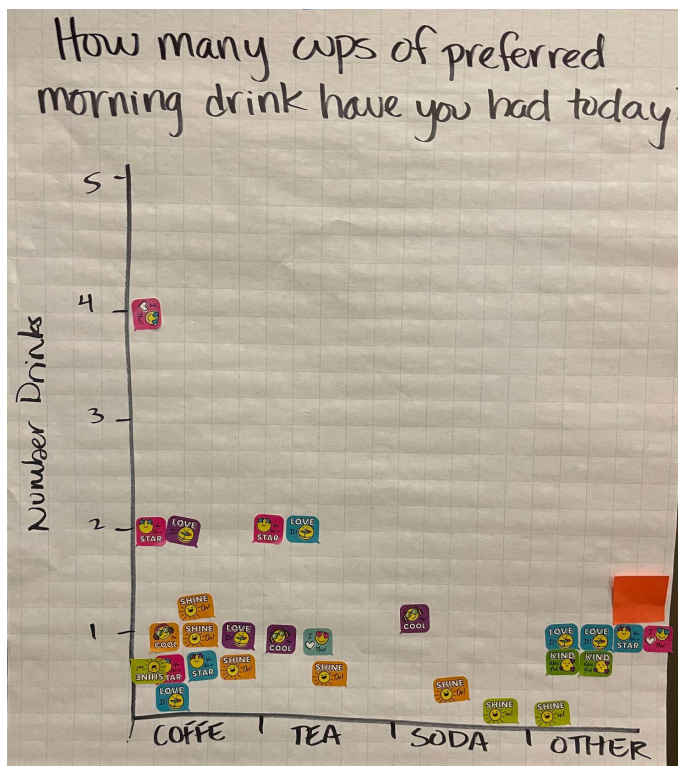
All are encouraged to:

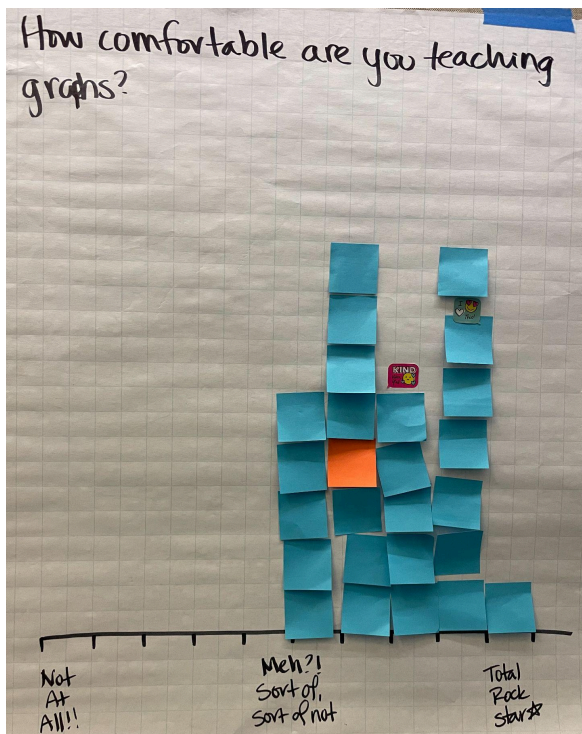
- Participate fully, openly, and inclusively for yourself and others
- Listen to understand
- WAIT – Why am I talking; Why aren't I talking
- Lean into your learning edge, it's OK to be raggedy
- Acknowledge and respect differences and similarities
- Speak from personal experience – use "I" statements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

WORKSHOP RESOURCES: ([SLIDEDECK](#))

Introductions:

- What about you? Add your responses onto the Flipcharts (Gallery Tour)





- Thought Swap (Turn & Talk)
 - What are the top three things you hope to gain or learn from this workshop?
 - Why are these important to you?

How do we know which graph type to use?

- Share out:
 - What kinds of graphs do your students make?
 - bar charts/graphs
 - line graphs
 - line plots
 - pie charts / circle diagrams
 - pictographs
 - How do they know which graph to make?
 - We tell them

- Data Visualization Key: Work with partner(s) to create your own “graph key”

Type of Question	Describing Words of Data
Comparisons: Comparing two or more groups (same/different or correlated)?	before/after, categories, compare, contrast, over time, peaks, rank, trend, types, valleys, related, correlated

Distributions: Looking at variability of a group?	cluster, distributed, from/to, plotted, points, spread, spread over, relative to, transfer, range of
Compositions: Looking at how total is proportioned into sub-groups?	components, divided up, group, makes up, of the whole, parts, percentages, pieces, portion, proportion, subsections, total

How can we best set our students & ourselves up for success?

- Reflections: ES & MS Data Viz...add your responses onto the Flipcharts (Gallery Tour)
 - How have these activities prompted you to think differently about using data visualizations in your teaching/work?
 - Making graphs less “sciency” and more approachable
 - Teaching the “how”
 - Will encourage 3-5 teachers to use data / graph as a common practice
 - These activities have made me rethink the way I plan to teach this unit in the future. It made me realize all the things I assumed my students knew that they actually did not know
 - Session made me think about difference between mechanically preparing a graph and understanding why + when to use a type of graph
 - I need to evaluate the type of graphs we are using and make sure they fit the purpose
 - I’m thankful to have narrowed the focus for types of graphs from ALL to some - knowing the developmental level is SO helpful
 - More manipulatives to show data
 - Somethings that I never thought of regarding data visualization is using them to tell a story (really love this idea) and also I never thought so deeply about the importance of graph choice!
 - I need to use other ways to teach about graphing - flipchart activity of move bodies to represent data
 - Deep connection between types of questions + graph types which can help guide student choice
 - How can you expand how you use data visualizations in your teaching/work?
 - Broaden the subject to more than just science but what students are interested in
 - Align math/science
 - I can see how overwhelming graphs can be & picking the right one
 - I feel graphing things then care about 1st will help w/ understanding it
 - This was great! The 8am hour flew by...Your ES → K12 sequence helped clarify why misconceptions about data analysis perpetuate

- I can't wait to take this to my PLC + focus on data literacy instead of "plug + chug" graph creation
- I am excited to try the chart paper and stickers to get my students moving while graphing
- Get students to reflect on why they used a type of graph + what they hoped to achieve
- I'm looking forward to using more data visualizations to help my students think about the data they collect + the best way to display it!
- I want to incorporate more graph making into my science investigation and be more mindful of graph choice for purpose
- Need to focus on all middle school graphs
- Use data/graph types to allow students to create based on their learning - lean into box plots
- How we use graphs needs to be realigned from ES → MS → HS
- Move graphing off the grid. Think flexibility about interactive ways to practice data visualization
- I'm going to focus on the elementary graphs and have my students respond to a graph everyday or 2 when coming in, take 3-5 min to share/compare, etc. and gain familiarity
- Knowing which types of graphs to focus on and how to change them to fit my students
- Provide opportunities for students to represent their data and utilize in CER – and rework data presentation/graph – as needed
- Realizing the # of graph types
- Understanding the progression from ES – MS – HS
- Apply in fun scenarios to tell a story
- Exposing students to multiple types of data visuals – share with coworkers focus on upcoming units

POST-WORKSHOP RESOURCES:

More Opportunities to graphing & sensemaking with data...

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2. Join our private Facebook Group: <https://www.facebook.com/groups/dataspiirededucators>
3. [Sign up to join the Dataspire mailing list](#) of upcoming workshop and curriculum opportunities

Other Graphing Resources

- [Graph Type Matrix resources](#) - activity components and keys for ES, MS, HS, and Undergraduate levels
- Hunter-Thomson, K. 2019. [Data Literacy 101: Which is the Best Graph to Use?](#) *Science Scope* 42(5): 26-31.
- Hunter-Thomson. July/August 2021. [How Can We Use and Interact With Graphs Better? \(Data Literacy 101\)](#). *Science Scope* 44(6): 8-14.

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.verbspecialgames.com/> - Order your own copy of Charty Party (or any other of the great games they make) with a **15% discount using code: DATASPIRE**

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