

The Secret Language of Maps, copyright © 2022 by The Board of Trustees of the Leland Stanford Junior University on behalf of Hasso Plattner Institute of Design. Published in the United States by Ten Speed Press, an imprint of Random House, a division of Penguin Random House LLC, New York.

EDUCATORS' GUIDE

Secret Language of Maps

Desktop Data! Experience the power of maps using items from your backpack.

Data surrounds us, and building basic data visualization skills is a critical competency for every student. By mapping data with a range of frameworks, we can discover hidden relationships, articulate ideas, and spot patterns and opportunities. Maps are important tools for telling stories. Understanding how they work, and how to use them for yourself will enhance your skills of analysis, synthesis, spatial reasoning, and storytelling.

Data is the information used to construct a map. It's your raw material. It's the information that is sought, molded, stretched, and reconstituted into what becomes the map or data visualization. Data can be quantitative, qualitative, or somewhere in between. How data is collected, how it's selected, and how it's organized – all of these are critical decisions. The data included in a map is as important as the data that's left out.

This activity, based on concepts from *The Secret Language of Maps* by Carissa Carter walks you through how to take data from your backpack, purse, desktop, or kitchen cabinet and use different frameworks to sort it and find new relationships and possibilities. It has been adapted for use in both K12 and higher education classrooms.

Activity: Desktop Data Shuffle

LEARNING GOAL

To help learners understand how to organize information and look at data through multiple lenses. To help them develop critical thinking, observation, sensemaking, and creative problem-solving skills.

WHERE TO USE THIS ACTIVITY

Classrooms | Virtual learning sessions (Zoom, etc.) | Workshops

MATERIALS

Paper | Writing instrument | Five items from a backpack, purse, kitchen cabinet, desk, or somewhere else readily accessible. These should be selected on the spot and not pre-planned.

INSTRUCTIONS

- 1. Gather a “desktop” data set.** This data set should come from somewhere readily available to the student. It’s best not to pre-warn them that these items will become their data. Instead, just ask them to pull out five items from their backpack, or similar. They should be sized such that they fit on a desk.
- 2. Find a continuum in this desktop data.** Draw a line with two arrows on your paper. Then arrange your desktop data in some sort of continuum. You might arrange your items from oldest to youngest, most loved to most disliked, cleanest to dirtiest, etc. Anything goes. Label the continuum and give it a title.
- 3. Make a new continuum with the same data.** What new relationship can you find? Label this one as well.
- 4. Share around a classroom.** What are all the different types of continua you see? Are they quantitative, qualitative? Mixed? Are they humorous or serious? What makes them so? Does the act of making a second continuum cause you to think differently? What does a continuum help you realize?
- 5. Now draw a Venn diagram.** Two circles that overlap. Place one of your items in one circle, and a second in the other circle. Given those two circles, what might you label the overlap? Label and title. Repeat with two new pieces of data.
- 6. Discuss differences between continua and Venns.** What does one do that the other doesn’t? Which feels simpler or trickier to you? How else might you use these two simple frameworks?

7. As desired, and as time and experience allows, experiment with other base frameworks: nested systems, metaphor maps, and 2x2s. Use them to find interesting variables, relationships, and insights in your desk data. This is where things get really fun. It's also tricky and takes practice. Each of these types of frameworks will help illuminate your data in different ways.

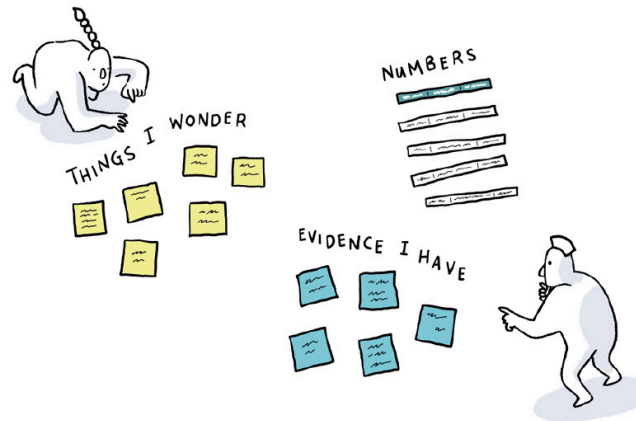
①
GATHER
THE DATA



②
HIGHLIGHT
INTERESTING
THINGS. GET
THEM OUT OF
YOUR HEAD.



③
MAKE
MODULAR PILES.
ONE THING
PER PAPER.
YOUR CATEGORIES
MAY DIFFER.

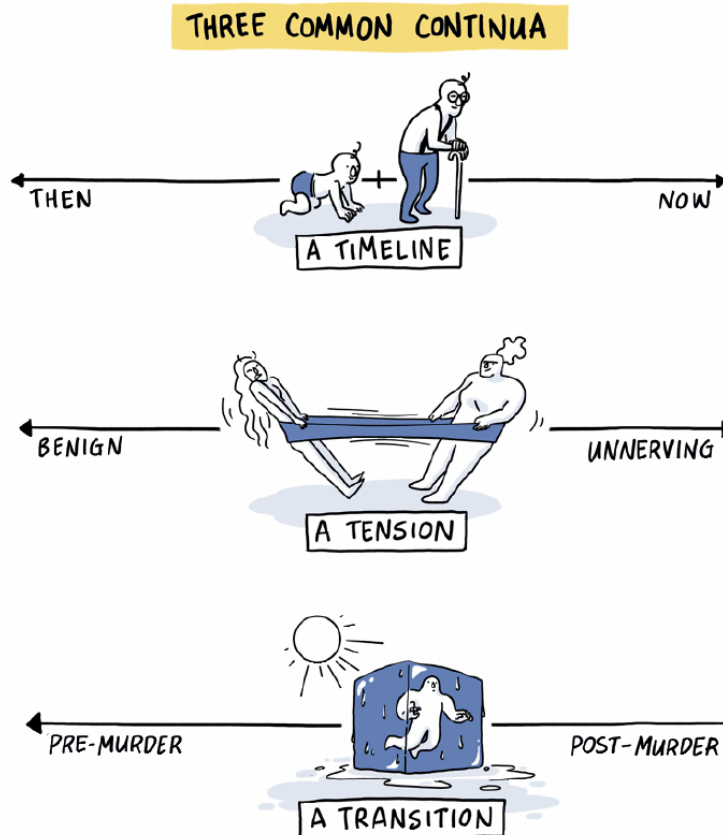


Base Frameworks

A base framework is the way that data is organized. Use them to explore your data as well as explain the phenomena you notice. Not all of these frameworks will work for you, but they're a great place to start.

Continua

Continua are the most versatile type of map. In every data set, quantitative and qualitative, there is at least one continuum—and often many. If you identify the most interesting ones in your data, you can leverage them into myriad maps. Draw a nice large continuum—really just a line with points or arrows on each end—on a piece of paper, label the endpoints,



and move your data around to see how it lands. If you're unsure where to begin with your endpoints, start by trying to find a timeline, a tension, and a transition in your data. Start with simple endpoints that may even seem too obvious. Don't try to be clever.

Venn Diagrams

Venn diagrams are good for forcing yourself to find relationships between things that might seem unrelated. Draw two circles that overlap. Start by labeling or putting pieces of your data in the big circles, then focus on figuring out what they have in common. Some will be obvious, and in others the "aha!" will be in the overlaps. Remember, don't try to think and then write. Just place a data point in each circle then figure out how they are related.

The Nested System

Nests are good for expanding your current ideas about the boundaries of your data set. Draw a series of concentric circles and place one piece of data in one of the layers. Then force your thinking outward— what is a larger container for that kind of data? Force it inward— what is a subset of it? Use as many layers as you need. There are many ways you can expand and contract. Be creative and try a few.

The Metaphor Map

Metaphor maps help highlight relationships within and among your data. Use them as arbitrary frameworks that you can force data into, seeking an insight. Let's say your data is a solar system: What part of it is the sun? Who orbits whom? Say your data is a river: What is the main fast flow? What are the banks? If your data is a convenience store: What are the different aisles? What's near the cash register?

2x2

Use a 2x2 to overlay variables and make insights pop. The 2x2 is the continuum's cousin. Overlay a couple of your continuum ideas and determine what data would fall in each quadrant. Consider what each quadrant represents. Sometimes empty quadrants are the exciting ones. As you fill in the 2x2, you are processing your data. You are making sense of the information you have. A new insight or a story might emerge.

WE'D LOVE YOUR FEEDBACK!



This educators' guide is a **prototype (hooray!)**. We're hoping to understand what types of materials are useful to educators and learners in K12 and higher education classrooms. If you used this, please share your feedback with us in this four-question survey.

WANT TO READ MORE?

Check out *The Secret Language of Maps!* The book offers even more ways to nurture an inquisitive mind and the ability to act with intention.

Learn about all of our d.school books at dschool.stanford.edu/books.

To request a complimentary examination copy to review for use in your classroom, contact Penguin Random House Education at k12education@penguinrandomhouse.com for PreK–12 Education or highereducation@penguinrandomhouse.com for Higher Education.