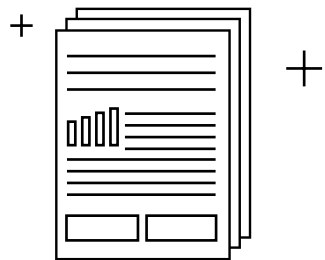


3 Areas of Focus to Improve Your Data Visualization Skills



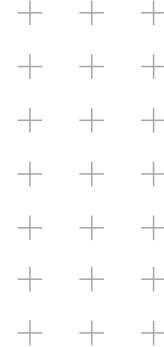
To help data practitioners better understand where to focus their efforts so that they can “level-up” their data visualization skills



This “cheat sheet” is designed for enterprise leaders and data practitioners who are interested in the meaningful, predictable, and repeatable visual communication of data; it’s meant to help you better understand where to focus your ongoing data visualization education.

The demand for data visualization knowledge and skills has never been greater.

In fact, the global data visualization market is expected to reach nearly \$20b by 2027, according to [Fortune Business Insights](#). At present, the demand for accurate, real-time data storytelling has never been greater, placing greater pressure on individuals and teams to “step up” their data visualization skills. Yet, many individuals—especially those who haven’t previously received classical design training—often lack the foundational knowledge needed to be successful.

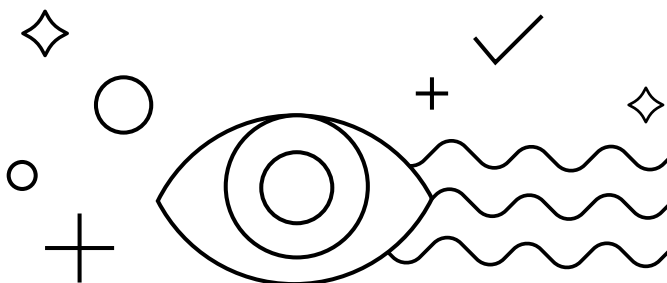




The field of data visualization is almost entirely dependent upon one's ability to absorb and process a variety of stimuli, primarily via our sense of sight. Our visual system, then, is the first line of absorbing and understanding data via visualization. Knowing how the visual system works is a crucial part of understanding how we can more effectively present and communicate key data stories.

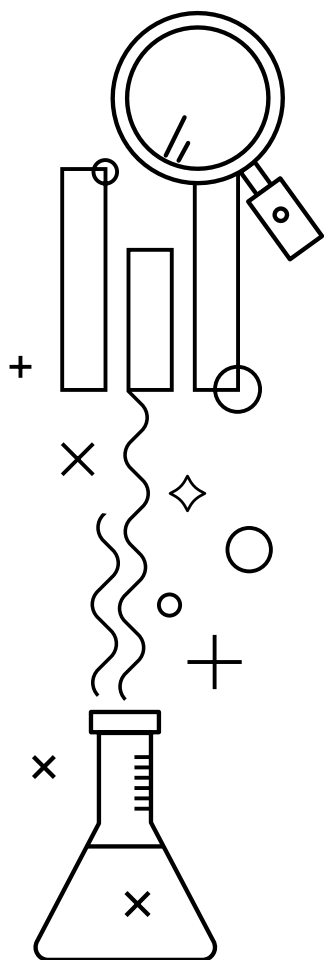
*CJ Weatherford
Principal Designer
RevUnit*

First Things First!



There's so much more to data visualization than charts, graphs, and BI tools.

Anyone interested in the meaningful, predictable, and repeatable visual communication of data should be actively looking to “up” their data visualization game. Doing so starts with a much more thorough understanding of the confluence of biology, psychology, and visual design (which we'll only briefly touch on in this cheat sheet). Yet, when you're able to understand even the foundational principles, you're then more easily able to translate your knowledge into practical guidelines for displaying complex information in ways that are more easily understood.



What You Can Do

Take an active interest in the more scientific aspects of effective data visualization

The unintentional misuse or miscommunication of data is one of the most common, yet consequential results of poor data visualization techniques. Yet, many of these errors can be corrected over time, especially if you learn to master the underlying principles that most directly influence our perception and understanding of statistical data. Even the slightest uptick in applied, foundational understanding can be a force multiplier toward better data storytelling.

So, perhaps more so than any other move you can make right now, your first and most critical step is to re-confirm what's most important to you, your team, and ultimately, your organization (since your objectives likely have shifted over the past few months). This is your starting point. Simply, if you have clarity of purpose and alignment to specific outcomes, you have meaning. And when you have meaning, you're able to create change—both for the organization and your team—because you can see the bigger picture.



Step 01

Take the time to better understand how perception, memory, and psychology influence data visualization

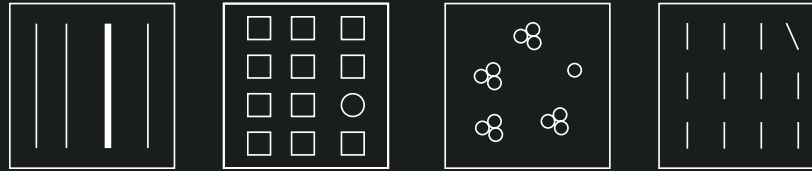


Psychology helps us better understand how humans find patterns and make meaning in visual space. Understanding our natural tendencies can help designers ensure meaning is easily accessed and understood from a noisy landscape. Humans are pattern-seeking creatures, so if we don't emphasize the patterns that matter most, viewers are left to create their own.

Allison Hu,
Director, Design
RevUnit

Suggested Areas of Focus for Continued Learning

- 01_ The anatomy and physiology of the human eye, especially its role in shaping perception
- 02_ How the different types of memory work together to make sense of information
- 03_ How cognitive bias affects perception and understanding, particularly in design
- 04_ How Gestalt psychology shapes the ways in which humans perceive the visual world

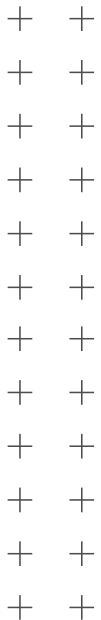


PRO TIP 01:

Learn More About the Role of Preattentive Processing in Data Visualization

Preattentive processing (PaP) is associated with our short-term, or "iconic," memory; it's often referred to as tapping into our "reptilian" brain in that it allows us to quickly process things at a superficial level for the sake of drawing our attention to things that might be of importance. Form, color, position, and motions are all examples of techniques that can be used in your data visualization work to take advantage of preattentive attributes.

PaP is a product of the rods and cones within the retina being drawn to the various ways that shape and color are constructed in the world around us. Shape and color are the two modes that are used in various capacities to either emphasize or de-emphasize objects, which, if used carefully and intentionally, can be manipulated for data visualization purposes in order to draw immediate attention to key elements in your data displays.



Step 02



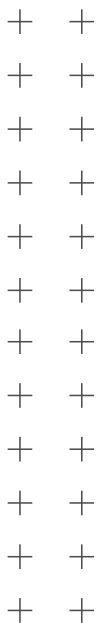
If you do a quick Google search for 'data visualization,' or if you simply browse the catalog of options in most BI tools, you'll find that there's no shortage of options available to you. But with each option, you should ask yourself, 'Is this simply an option, or is this an optimal, efficient, and effective option?' What generally happens when we become more intentional with a craft is we learn that there are basics that can be heavily leaned on to put us in a great position for success. It's no different when it comes to data visualization.

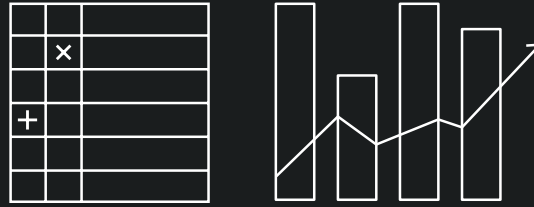
*Corey Campbell
Director of Design, Data
Visualization Specialist
RevUnit*

Learn to recognize when and where it's most appropriate to utilize certain visualization techniques

Suggested Areas of Focus for Continued Learning

- 01 — The difference between charts, graphs, tables, and other basic visualization formats
- 02 — The primary types of displays used to convey quantitative or categorical information
- 03 — How to select the most appropriate visual display based on your analytical needs





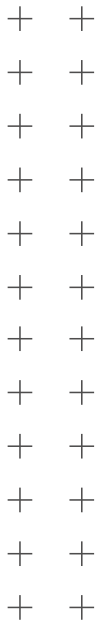
PRO TIP 02:

Learn More About the Role of Both Graphs and Tables in Data Visualization

Fundamentally, a table is a series of rows and columns in which textual information is used to denote relationships, whereas a graph is a visual representation of some information.

Tables are typically most appropriate when: (1) The display will be used to look up individual values, (2) the display will be used to compare individual values but not entire series of values to one another, (3) precise values are required, (4) the quantitative information to be communicated involves more than one unit of measure, and/or (5) both summary and detail values are included.

Graphs are typically most appropriate when: (1) The message of the data is contained in the shape (patterns, trends, exceptions, etc) rather than in the individual values, and/or (2) the display will be used to reveal relationships among whole sets of values.



Step 03

Take an interest in the principles of visual design to improve organization and clarity of information

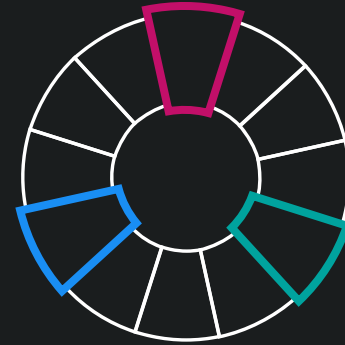


Visual designers are trained in using techniques and strategies to move a viewer's eye across a design in intentional ways. Use of even the most basic visual design techniques can help data practitioners—especially those who aren't designers by trade—explore visualization techniques that can be used to add a strong sense of organization, unity, hierarchy, and clarity.

*Courtney Ulrich Smith
Director, Design Strategy
RevUnit*

Suggested Areas of Focus for Continued Learning

- 01** _ The techniques designers use to move a viewer's eye across a visual display
- 02** _ The basic principles of color theory, and its role in effective data visualization
- 03** _ How color schemes can serve to reinforce narratives and/or perceptions of data
- 04** _ How typography is used to create both visual hierarchy and clarity of information

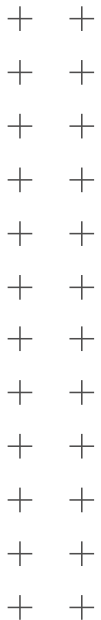


PRO TIP 03:

Learn More About the Role of Color Theory in Data Visualization

In essence, color theory is the study of color from both scientific and subjective perspectives to understand both how color works, and how you can use it in communication and design. While the subject itself can get quite broad, there are a few elements, in particular, that you should care about most when it comes to data visualization: (1) The parts of color, (2) The color wheel, (3) Color harmony, and (4) Strategies for using color with data.

The color wheel, in particular, is a useful place to start. The color wheel is literally a wheel of colors (primary, secondary, tertiary); the number of colors can vary depending on a variety of factors and there are multiple ways to use a color wheel for maximum impact. It's not imperative that you memorize the primary/secondary/tertiary scheme. What matters here is knowing how you can leverage the colors on the color wheel to provide adequate meaning in your data visualizations.



BONUS!

Practical data visualization design guidance for non-designers



I've yet to see a more straightforward and easy way to teach layout and visual design implementation than the C.R.A.P. method. Further, it has extra holding power due to the sweet acronym. Not to be confused with methods that we should throw away or ignore, the C-R-A-P method actually stands for Contrast, Repetition, Alignment, and Proximity.

*CJ Weatherford,
Principal Designer,
RevUnit*

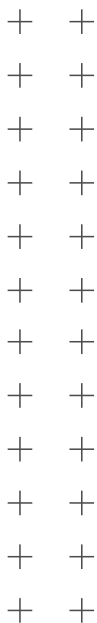
THE C.R.A.P. METHOD

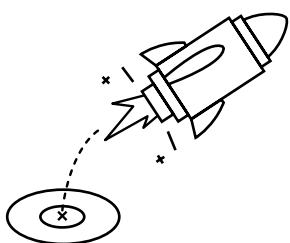
01_ Contrast

Contrast is an efficient way to differentiate what's important from what's not, and to aid in creating hierarchy to help a viewer find the information they're looking for.

02_ Repetition

Repetition is basically the fancy visual design code word for the Gestalt principle of "similarity. Repetition allows you to group like elements, assigning attributes to each as needed, then re-using those elements in your visualizations.





This “cheat sheet” is simply a starting point to help you begin to take legitimate action toward improving your data visualization skills. Clearly, there’s a lot more to consider beyond what we’ve listed here. So, we’ve included a few additional resources below where you can find more detailed information to help you gain better control of your data.

Wrapping Up

What to Take Away From This Cheat Sheet



Understand how perception, memory, and psychology influence data visualization



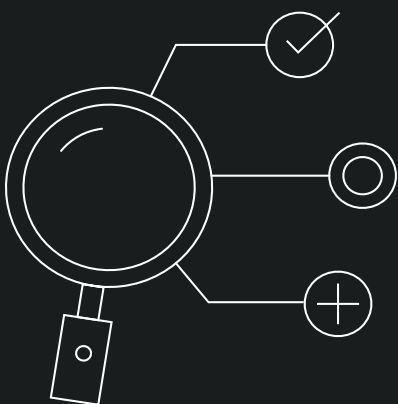
Learn to recognize when it’s most appropriate to utilize certain visualization techniques



Take an interest in the foundational principles of visual design



Additional Resources



RevUnit is a data technology studio.

We help enterprise teams create change with their data, faster, by applying agile product principles to their data systems.

[Learn more →](#)



CHEAT SHEET

Three Steps for Better Data Storytelling with Your BI Tools →

Visit the link above to view the most popular resource in our “cheat sheet” series. You’ll find three suggestions for more effective data storytelling, regardless of which BI tools you’re using.



CHEAT SHEET

Using Data to Drive Real Change →

Learn more about the five things every enterprise leader should be thinking about right now in order to make the critical transition into an even more competitive, data-driven environment.



OFFERING

Data Visualization Audit →

Are your data visualizations making the right impact on your business? Get a pricing sheet today.