

Data Communication & Visualization



Pictorial Superiority Effect: our visual dominance impacts memory.

Only 3-5 pieces of new information can be stored to long-term memory at a time.

Graphic elements are good at grabbing attention.

Graphic design helps readers digest our information.

The more they digest, the more they will retain in their long-term memory.



Use large, full bleed images.

Emotional connections assist in recording information into long-term memory

Repeat image or pieces of it to create a consistent visual message or brand.

Develop icons for quick visual communication.

Use logos to cutout extraneous details whenever possible.

Atomic theory of development: don't overwhelm working memory by presenting one piece of information at a time.

Give audience handouts if information is critical.

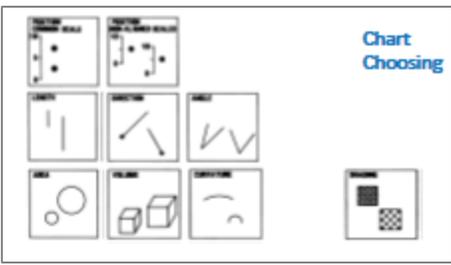
Image sources:

[Images.google.com](https://images.google.com)

Morgue File

[Library of Congress](https://www.libraryofcongress.gov/)

[Usa.gov/topics/graphics](https://www.usa.gov/topics/graphics)



Area is hard to interpret accurately. Humans are better at judging length.

Pie charts produce errors in interpretation.

Graph as high up in the hierarchy as possible.

Bubble, volume, and curvature charts result in more errors in interpretation.

Position on a common scale is the easiest for us to interpret.

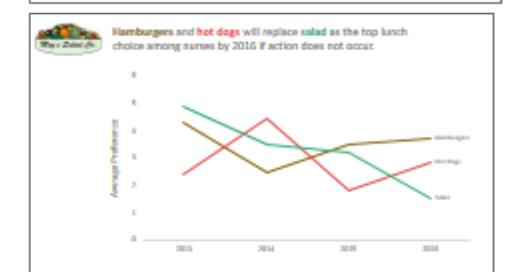
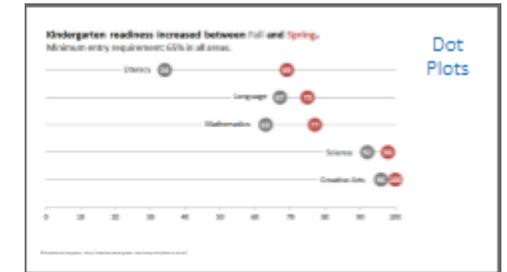
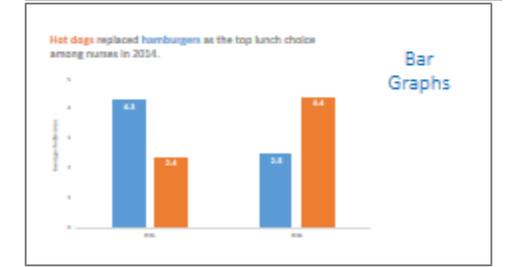
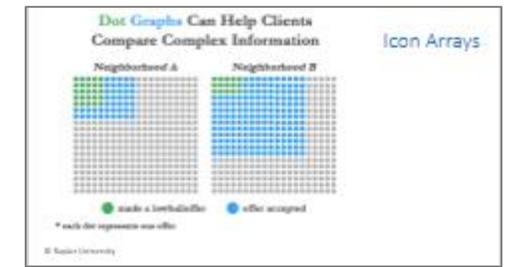
Length, direction, and angle are the next easiest.

Icon arrays require the least amount of data or number literacy and are great for highlighting key numbers.

Bar/column charts are ideal for comparing a max of 2 things.

Use dot plots to highlight gaps between points.

Small multiples are great for complicated data sets! Helps you isolate overall trends easily.





Color is PRE-ATTENTIVE!

Color subliminally tells us that something is more important than the surrounding items.

Choose one light, one dark, and one emphasis color.

Control the colors to make your key points more clearly understood; don't rely on defaults.

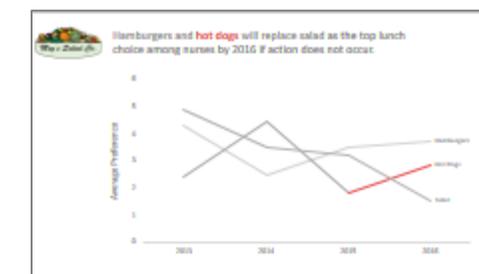
Color can be a barrier for working memory. Legibility hurts comprehension.

Color Resources:

- Adobecolor.com
- Design-seeds.com
- Colourlovers.com
- Vischeck.com
- Colororacle.org
- Colorbrewer2.org
- Achronism.com
- Cjolliffe.com/resources/CJGA-color-theory.pdf

Font Resources:

- Myfonts.com/whatthefont
- www.fontsquirl.com
- Make a Power(ful) Point



	% Unfavorable	% Neutral	% Favorable	Score	Num	TV-Score	Nat'l Magnet RN Ave Score
Hospital nurses feel less supported in balancing work and personal life than the average nurse at other Magnet® hospitals in the nation.							
1. My work unit works well together.	2.43%	4.87%	92.70%	4.46	1274	4.46	4.28
2. The person I report to treats me with respect.	4.16%	7.06%	88.78%	4.41	1274	4.42	4.3
3. The person I report to seems to care about me as a person.	6.07%	11.51%	82.41%	4.22	1268	4.24	3.98
4. Different work units work well together at the hospital.	8.54%	20.59%	70.87%	3.76	1253	3.8	3.69
5. The hospital conducts business in an ethical manner.	4.65%	14.74%	80.61%	4.09	1269	4.11	4.17
6. I am involved in decisions that affect my work.	18.22%	19.64%	62.15%	3.61	1268	3.66	3.66
7. Hospital leaders cares about employee safety.	4.55%	9.58%	85.87%	4.2	1274	4.25	4.11
8. The hospital provides high-quality care and service.	2.13%	5.91%	91.96%	4.38	1268	4.39	4.34
9. Changes affecting the hospital are communicated in a way I can understand.	14.27%	21.85%	63.88%	3.66	1268	3.71	
10. Hospital supports me in balancing my work life and personal life.	21.31%	20.83%	57.86%	3.49	1272	3.57	3.73
11. Information from this survey will be used to make improvements.	20.91%	33.60%	45.49%	3.3	1253	3.35	3.54
12. I like the work I do.	1.18%	5.04%	93.77%	4.54	1269	4.55	4.52
13. My job makes good use of my skills and abilities.	3.85%	5.58%	90.57%	4.35	1273	4.34	4.27



Data dashboard and infographics are popular for combining individual data visualizations.

The principles of simplify and emphasize are key.

Ease of interpretation should rule over flashy design.

Data Visualization Resources & Tutorials for APIC Attendees:

- Juice Labs Chart Chooser: <http://labs.juiceanalytics.com/chartchooser/index.html>
- Make simple icon arrays at: iconarray.com
- <http://stephanieevergreen.com/> - free blog with tutorials!
- Tutorial on Dot Plots in Excel: <http://stephanieevergreen.com/easy-dot-plots-in-excel/>
- Small Multiples: <http://stephanieevergreen.com/declutter-dataviz-with-small-multiples/>
- Tutorial on directly labeling items: <http://stephanieevergreen.com/directly-label/>
- Presenting Data Effectively: Communicating Your Findings For Maximum Impact (2013)
- <http://makeapowerfulpoint.com/>
- <http://www.presentationzen.com/> (also a book)