

NOTES ON DATA + INFORMATION DESIGN

Tell the stories. Free the data. Think visually.

I HAVE A QUESTION.

- Who is this person?
- What is information design?
- What is the design process?
- What about data visualization?
- What are some basic rules?
- Can you show me an example?
- What tools can I use?
- Where do I learn more?

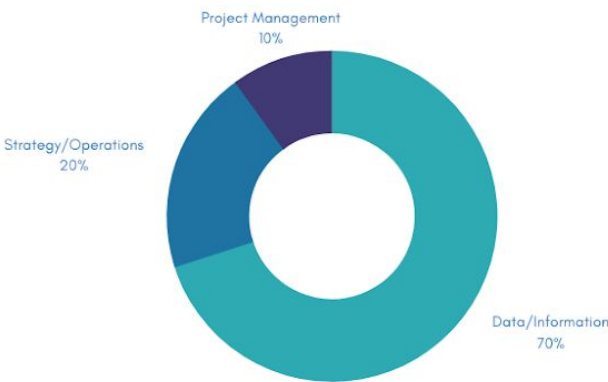


HOLLY HIGHLIGHTS

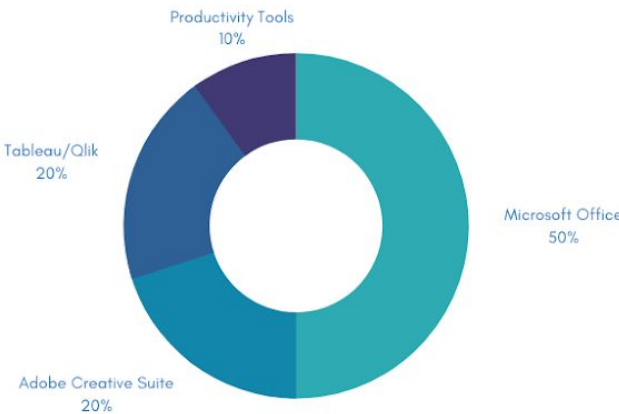
MY TIMELINE

- 2006** ● **AUGUSTA UNIVERSITY (MCG + ASU)**
Director of Institutional Research
- 2001** ● **MEDICAL COLLEGE OF GEORGIA**
Assistant Director of Institutional Research
- 1997** ● **MEDICAL COLLEGE OF GEORGIA**
Institutional Researcher
- 1996** ● **MEDICAL COLLEGE OF GEORGIA**
Employment Specialist
- 1995** ● **AREA HEALTH EDUCATION CENTER**
Assistant to the Director

SKILLS SUMMARY



TECHNICAL SKILLS



1999: THE EARLY YEARS. TABLES.

Medical College of Georgia

IRIS Home | A-Z Index | MCG Home

iris home → facts and figures → students → fall enrollment trends by school

related links / enrollment by race / enrollment by gender / legal residence

Fall Enrollment Trends by School

excel spreadsheet

	1997	1998	1999	2000	2001
Allied Health Sciences	429	390	338	323	456
Dentistry	218	225	225	225	219
Graduate Studies	335	406	412	378	216
Medicine	712	716	712	711	719
Nursing	326	316	287	292	324
Other	7	13	5	2	5
Total Enrollment	2,027	2,066	1,979	1,931	1,939

NOTE: Enrollment figures displayed on this page do not include residents.

SOURCE: Office of the Registrar

WHY NO VISUALS?

WHAT'S UP WITH THE COLORS?

~~DARK LINES~~

~~CENTERED #'s~~

2012: CHARTS + EXCEL TABLES

Georgia Health Sciences University - iris - research -

A-Z Index | GHSU Home | Site Search

IRIS: GHSU Facts and Figures

Data Categories

- Applicants
- Students
- Residents
- Graduates
- Alumni
- Enterprise Workforce
- Faculty
- GHSU Staff
- Research
- Finance
- Downloads
- IRIS to Go
- Fact Sheets
- Maps
- Related Links
- Institutional Effectiveness
- Data Request Form
- Peer Institutions List
- IRIS Update Calendar

Research.....

GRAPHS

Total Sponsored Activity

Fiscal Year	Total Sponsored Activity
FY 2007	\$79.4 million
FY 2008	90.8
FY 2009	98.6
FY 2010	103.2
FY 2011	99.3

Total Sponsored Research

Fiscal Year	Total Sponsored Research
FY 2007	\$65.3 million
FY 2008	73.8
FY 2009	83.8
FY 2010	86.9
FY 2011	84.4

SUMMARY

Research from NIH

Of Sponsored Research from NIH

72.7%

Submissions

Number of Research Awards Submitted During FY '11

940

Sponsored Research

FY '11 Total Sponsored Research

\$84.4M

Awards by Thematic Area

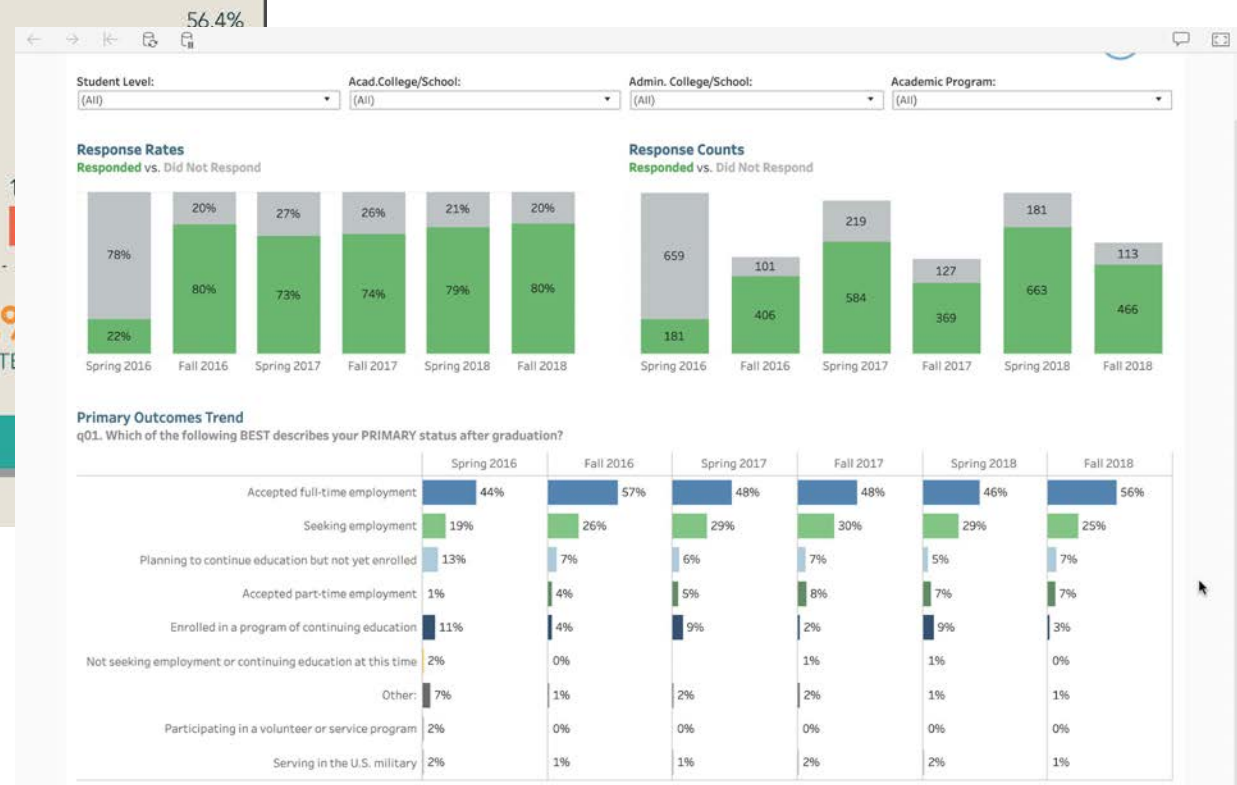
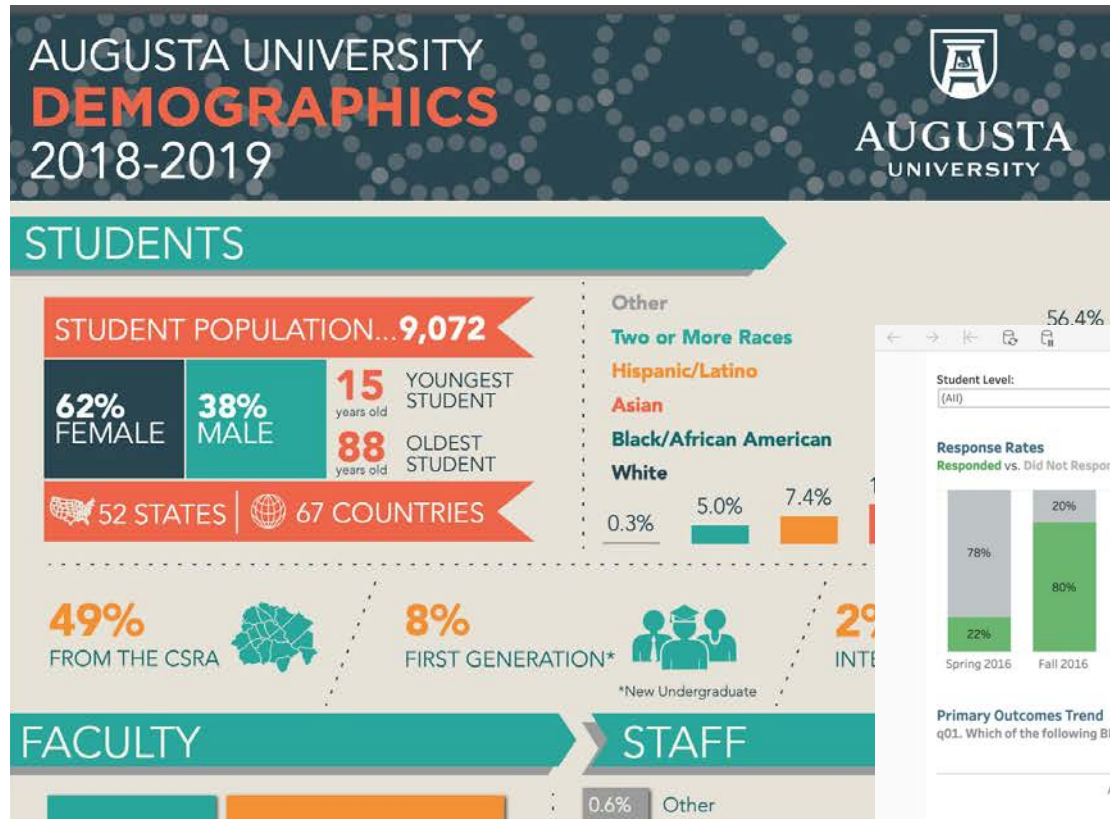
Research Awards in Cardiovascular Disease

\$30.7M

TABLES

- Extramural Grant & Contract Support Received Excel Archive
- 2011 Sponsored Awards Received Excel Archive
- 2011 Sponsored Awards Proposals Submitted Excel Archive
- 2011 Awards by Thematic Area Excel Archive
- 2011 Sponsored Awards by Type Excel Archive

2019: ICONS + INTERACTIVITY



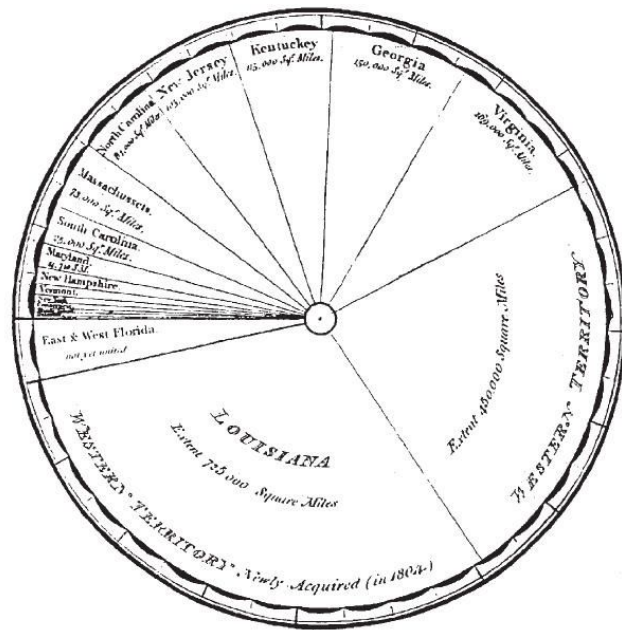
WHAT IS INFORMATION DESIGN?



Information design is all about understanding

- ***understanding*** the relationship between the information and the audience
- ***understanding*** and synthesizing all relevant information sources
- ***understanding*** how to craft a narrative and flow that will effectively communicate the message
- ***understanding*** how to enhance the information visually without distracting from the meaning
- ***understanding*** the need for feedback during and at the end of the design process

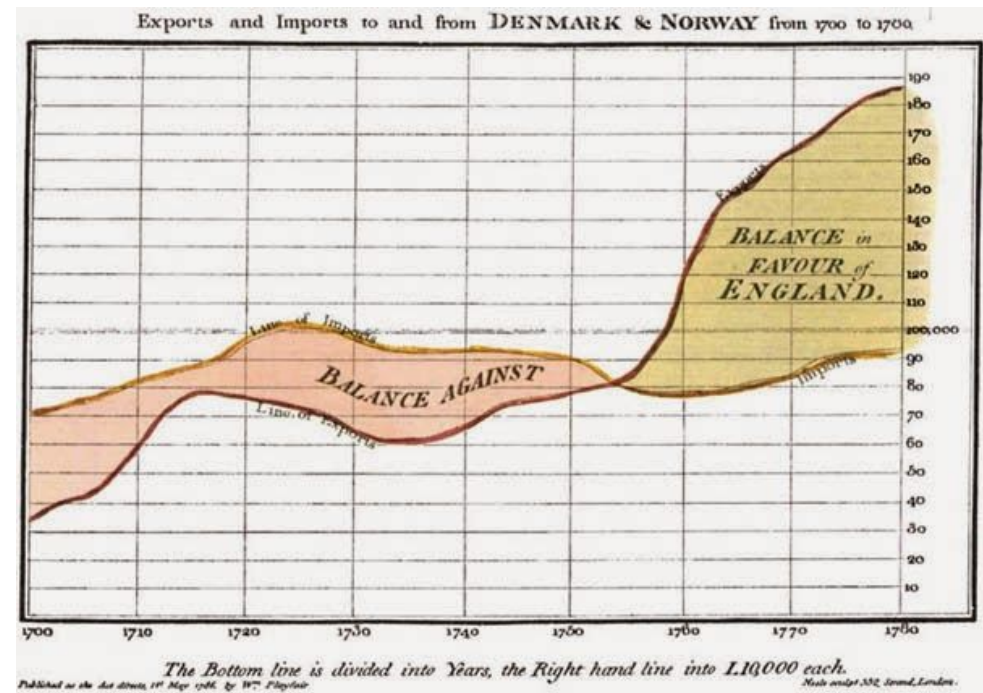
William Playfair was the most prolific data nerd of the 1700s. He invented the bar chart, the line chart and the pie chart.



STATISTICAL REPRESENTATION of the UNITED STATES of AMERICA .

by W. PLAYFAIR

The Simple, improved Method is intended to show the Proportions between the different in a striking Manner.
Total Extent 1,422,000 Square Miles or 422 Millions of Acres.



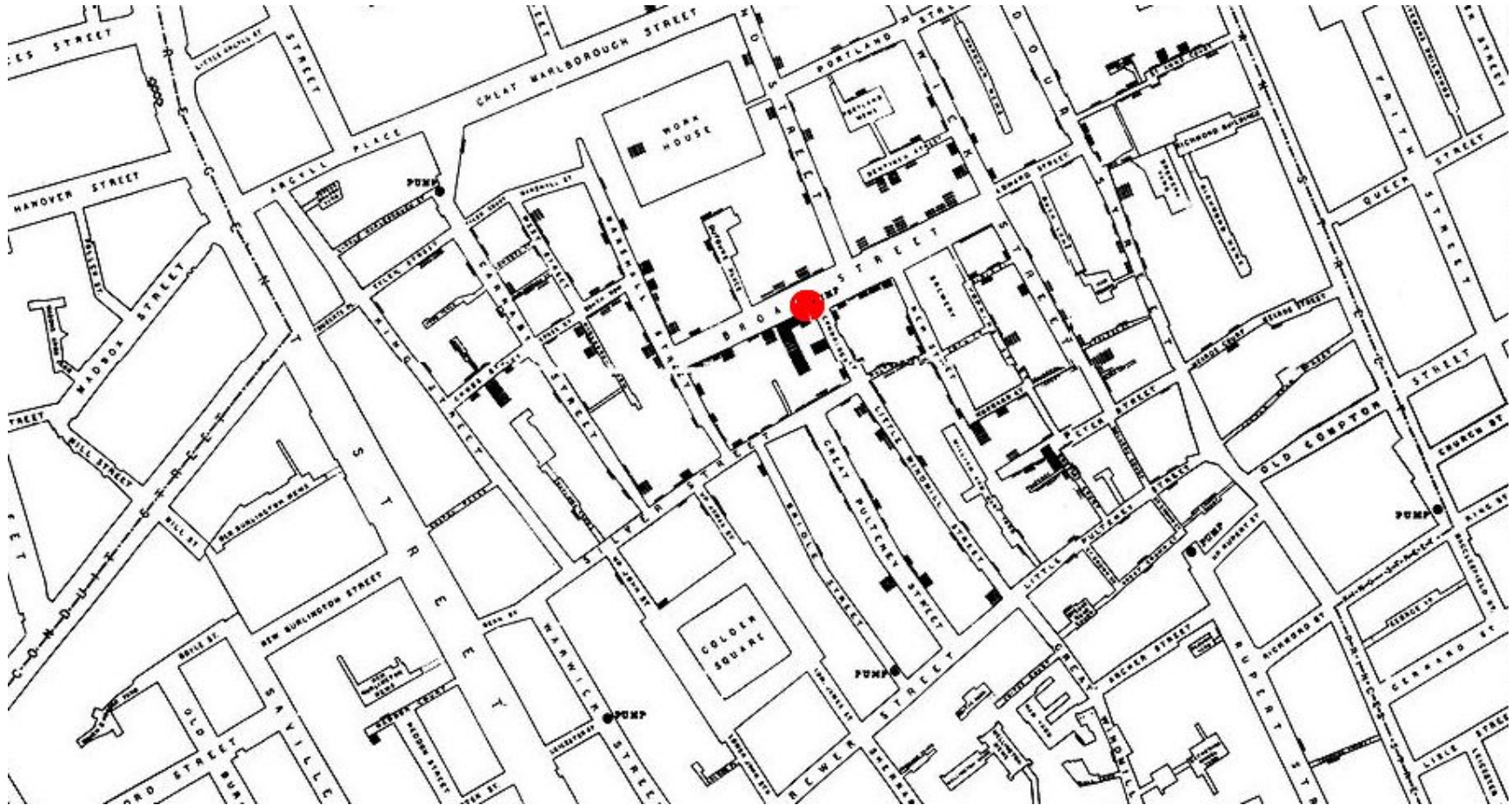
The Bottom line is divided into Years, the Right hand line into 100,000 each.

Published as the Act directs, 1st May 1786, by W. Playfair.

Printed and sold by S. D. London.

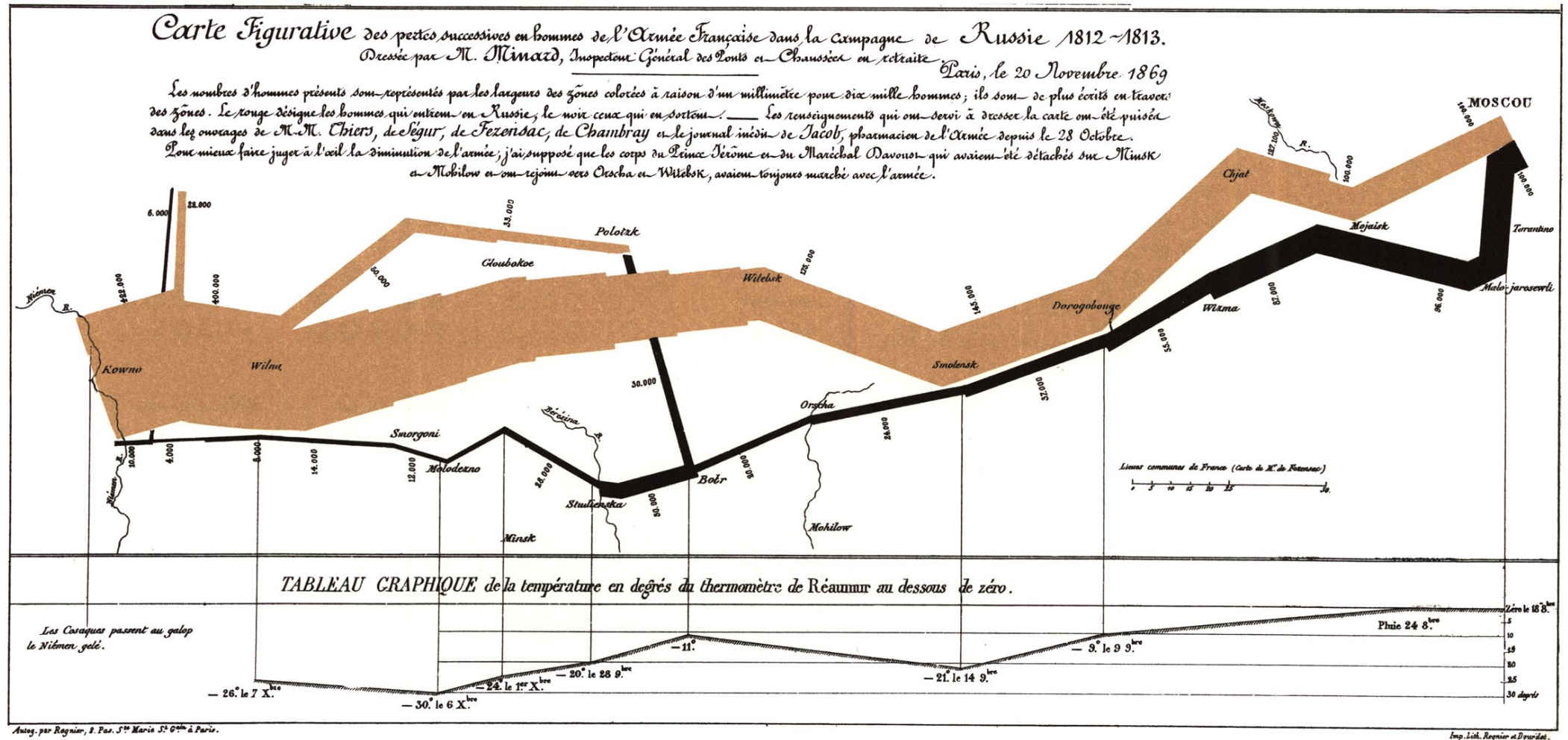
A Brief History

John Snow (not that one!) went a step further and saved people's lives with data! Cholera outbreak of 1854, bar charts on a map showed deaths by address finding a single contaminated water pump.



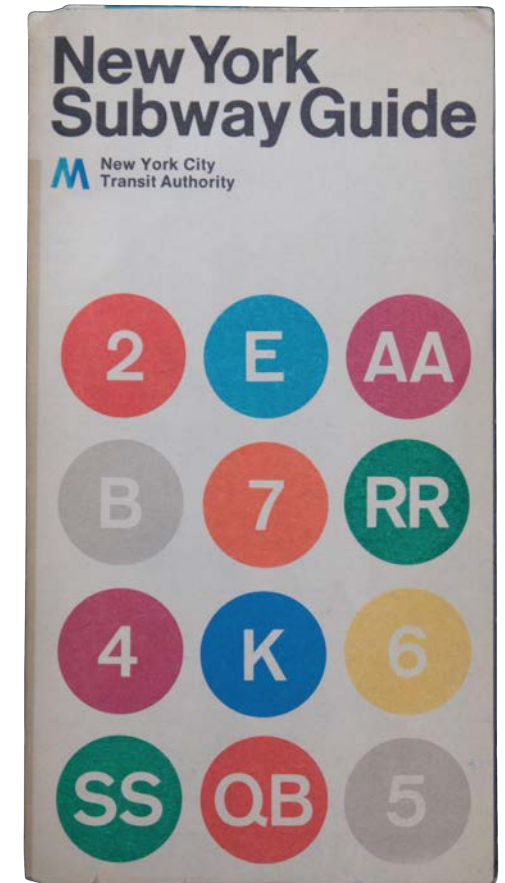
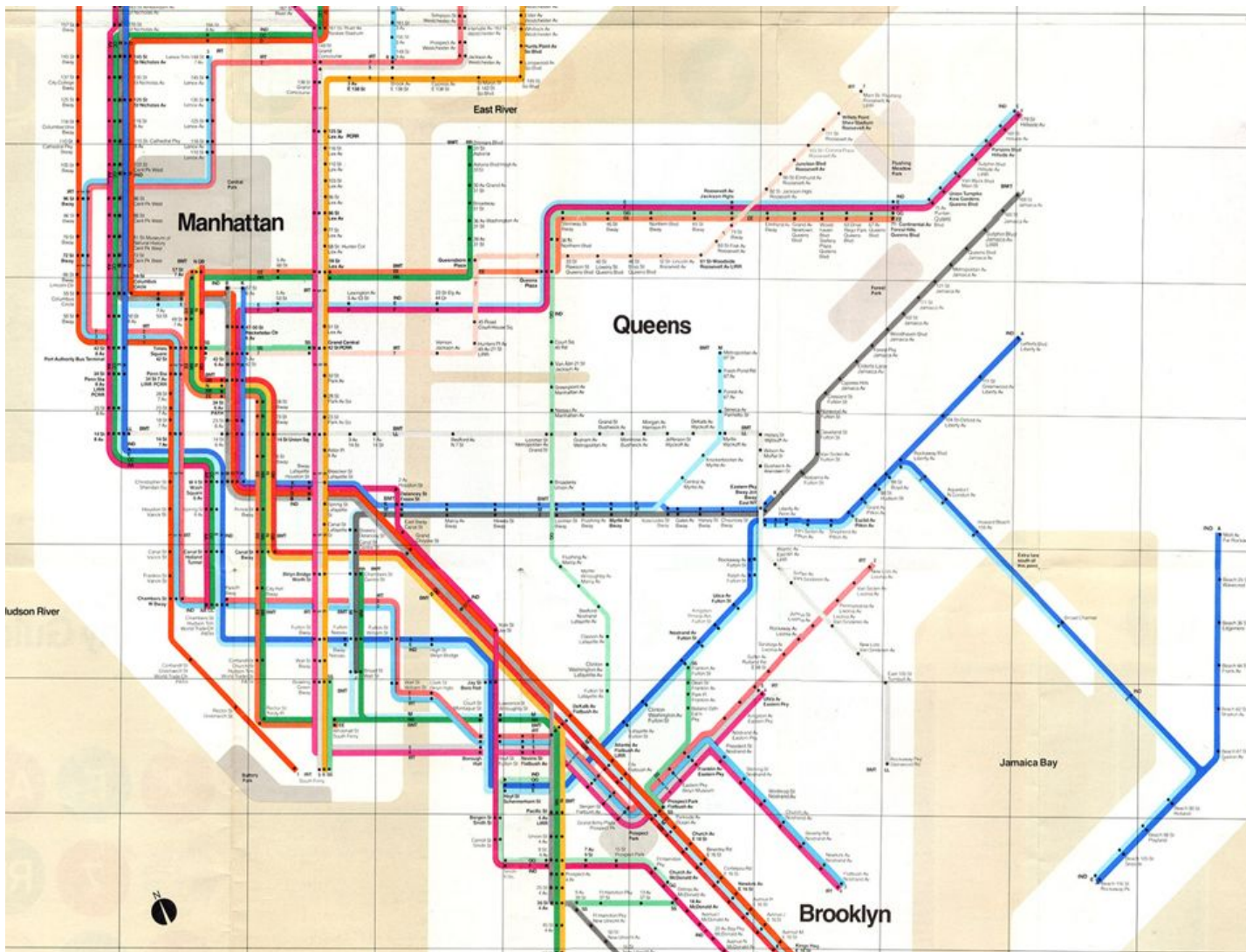
A Brief History

Charles Minard's 1869 chart of Napoleon's invasion of Russia in 1812 and the defeated army's march back to Poland. Thickness of the line represents people (from 422,000 to only 10,000 troops).



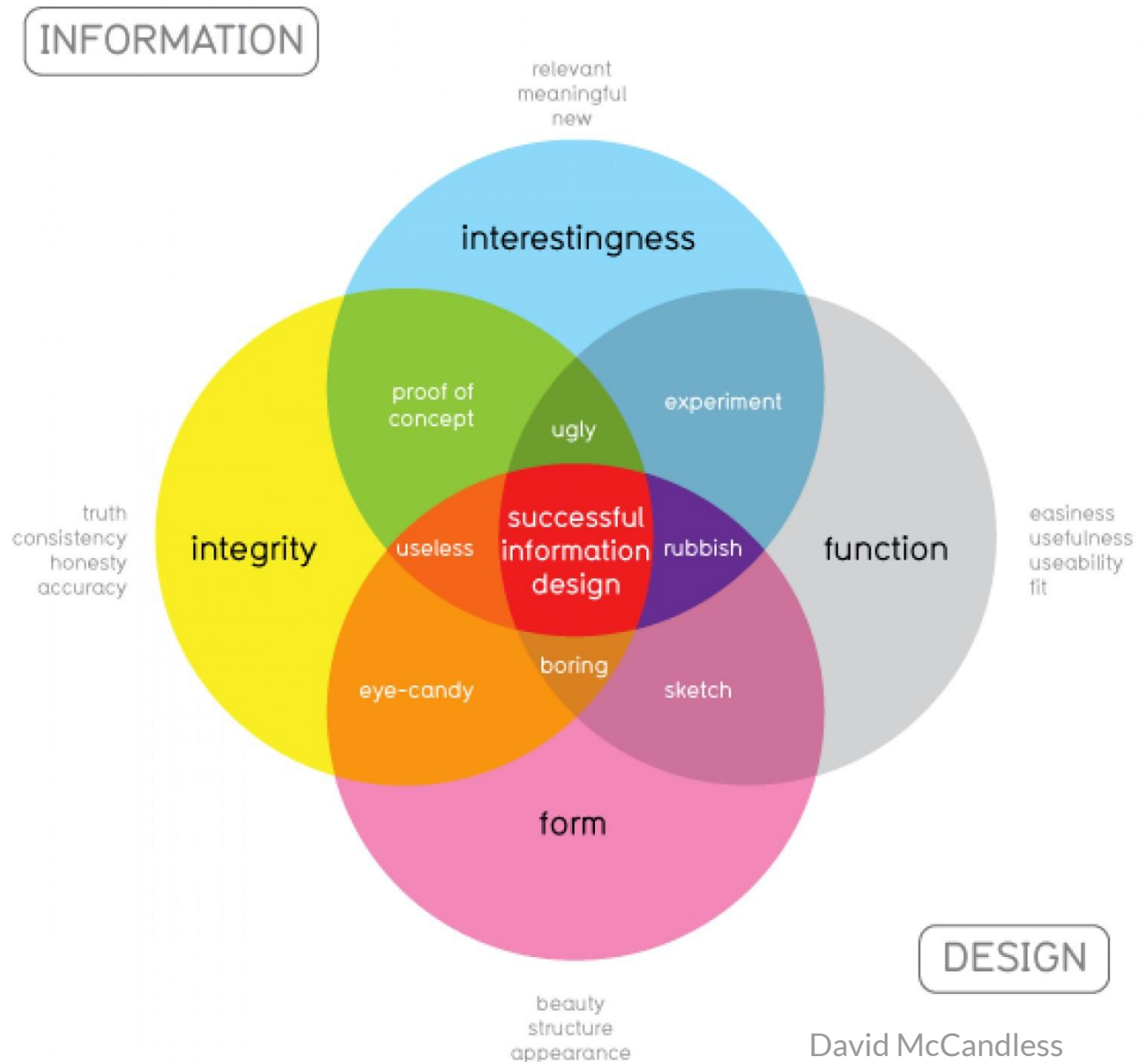
A Brief History

New York Subway Guide created in 1972 by Massimo Vignelli was a great example of form and function and a modern information design masterpiece.



A Brief History

What are the steps for designing data and information for maximum insight and impact?



1: DEFINE THE PROBLEM. PLAN THE PROJECT.

WHO?

- Who is the target audience?
- Consider their interests, passions, what inspires them



WHAT?

- What is your main goal for the project?
- Think about the desired outcome and what you want to achieve



HOW?

- How will you know the project was successful?
- Are there tools you can use to measure the results?



Design Process

2. COLLECT + ORGANIZE INFORMATION.

ORIGINAL

- Stick to primary sources
- Friends don't let friends use Wikipedia
- Tell the truth with your data and information



RELEVANT

- Questions about your data? Your audience will too!
- Data changes quickly; keep it current
- Most recent version available



RELIABLE

- Verify the source is legitimate and as unbiased as possible
- Avoid information that is anecdotal or based on hearsay

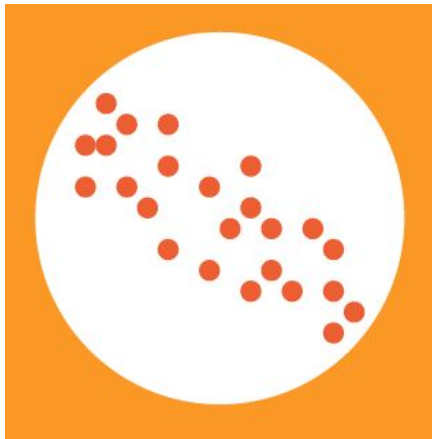


Design Process

3: ANALYZE THE DATA.

TRENDS

Look for consistent patterns/relationships between data points or data sets.



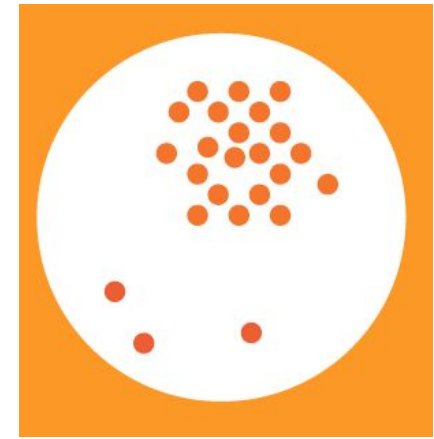
CORRELATIONS

Elements may have an obvious relationship, or will be revealed through data exploration.



OUTLIERS

Unusual or irregular occurrences often have an intriguing story or highlight an issue..



Design Process

4. CRAFT THE STORY.

OUTLINE

- Identify the flow of the narrative
- Map your data to support each point

ARRANGE CONTENT

- Have a logical flow

PROVIDE CONTEXT

- Data is supposed to clarify, not confuse

HIGHLIGHT NOTABLE INSIGHTS

- Key points need attention

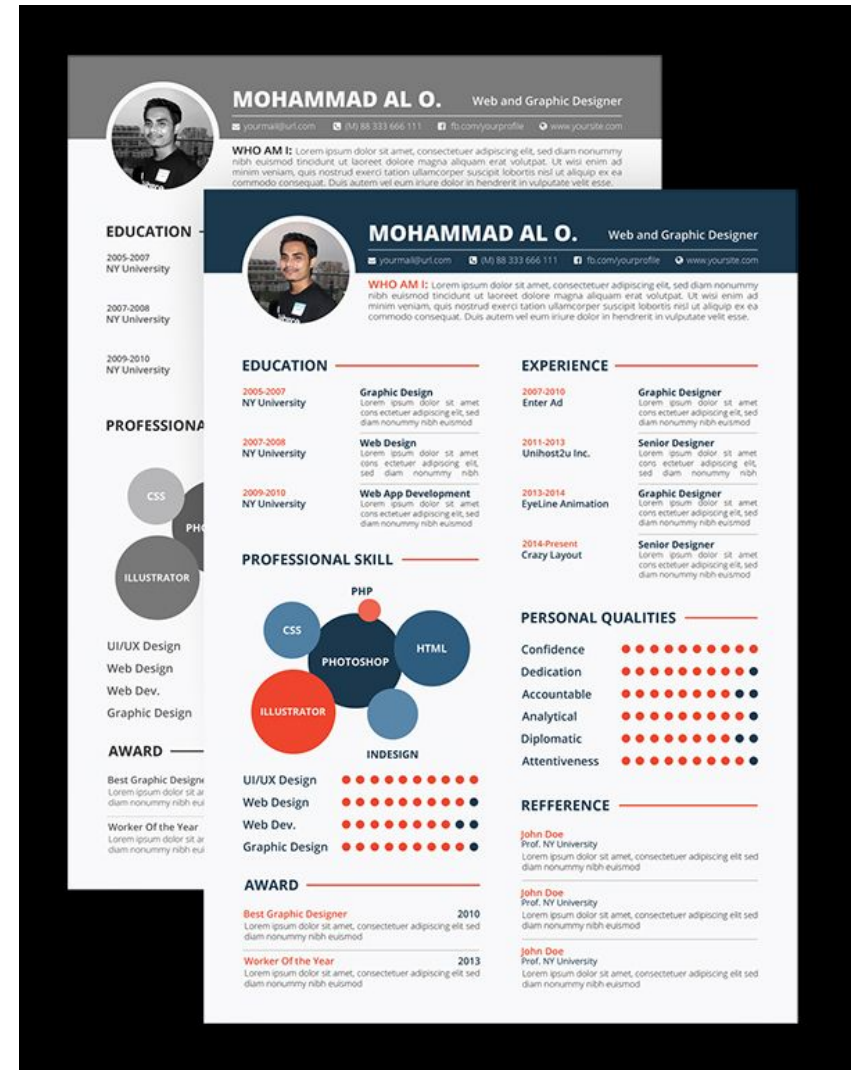
TRIM WHERE NECESSARY

- Don't overwhelm with data
- Include what is necessary and relevant



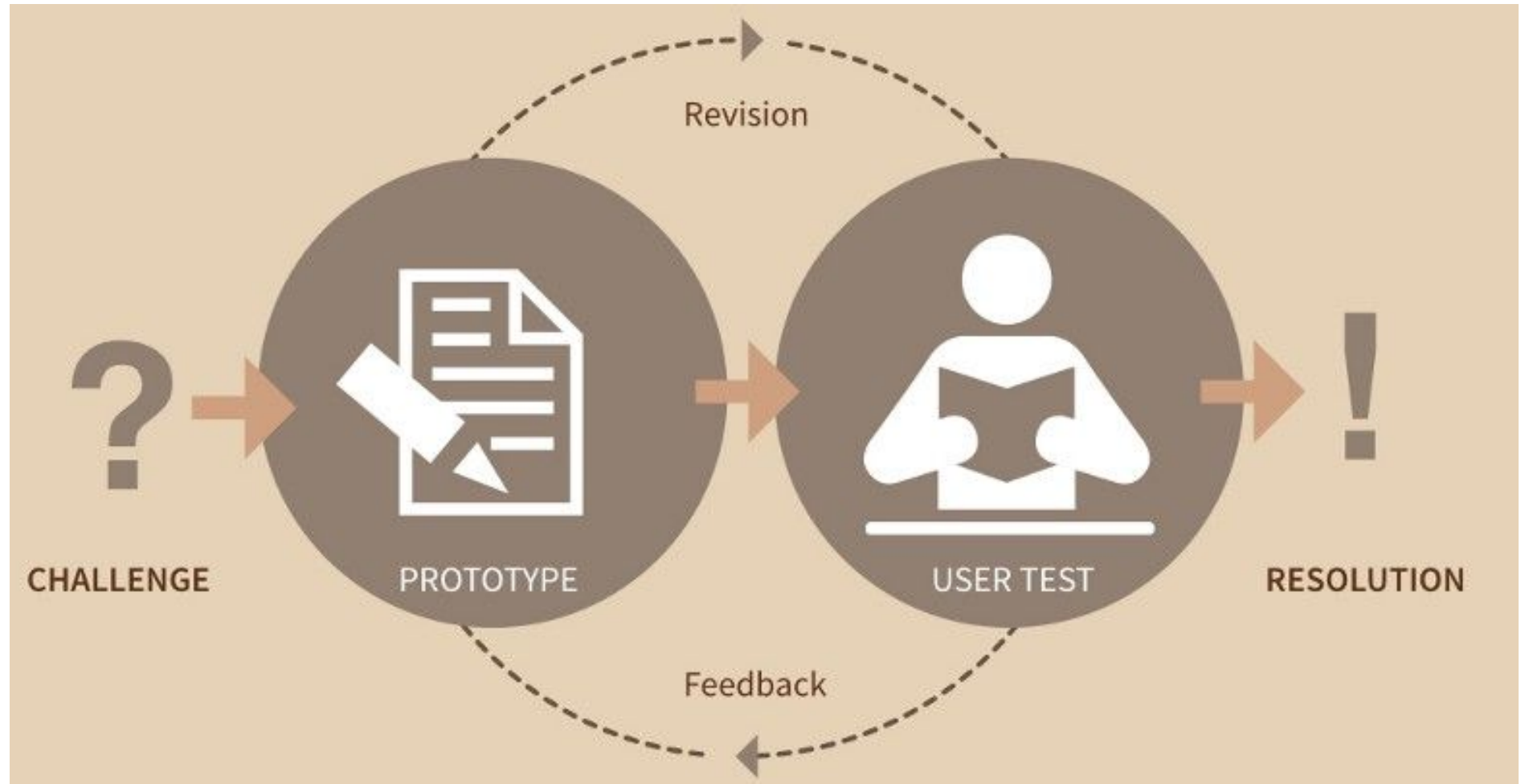
Design Process

5. DESIGN THE CONTENT.



Design Process

6. TEST, RINSE, REPEAT.



Design Process

7. IMPLEMENT, PUBLISH, LAUNCH, DELIVER.

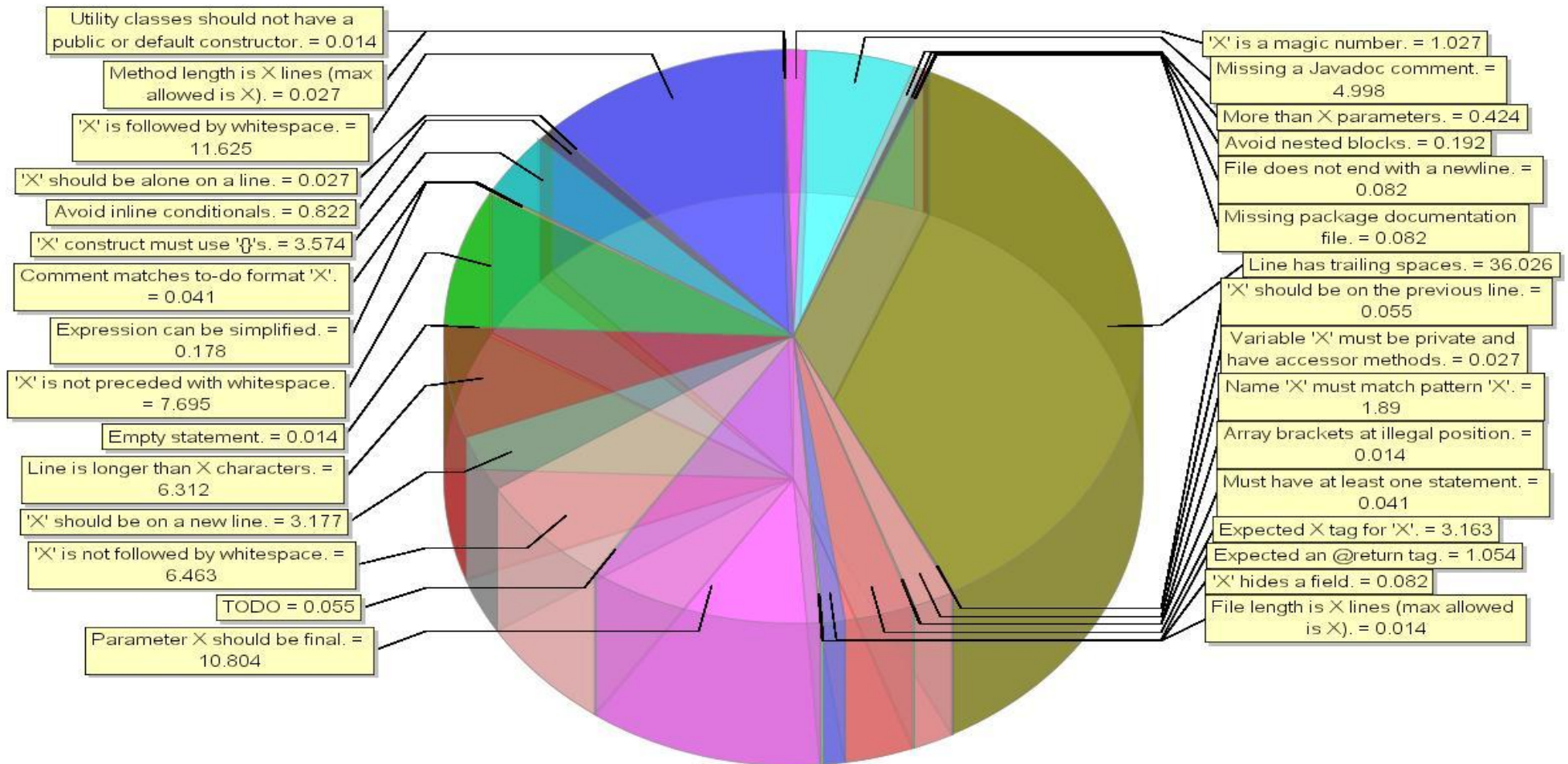


Design Process

8. GET FEEDBACK TO IMPROVE.



HOW DO YOU VISUALIZE DATA? NOT LIKE THIS.



WHAT IS DATA VISUALIZATION?

DATA



SORTED



ARRANGED



PRESENTED
VISUALLY



WHY VISUALIZE DATA?

Information Overload

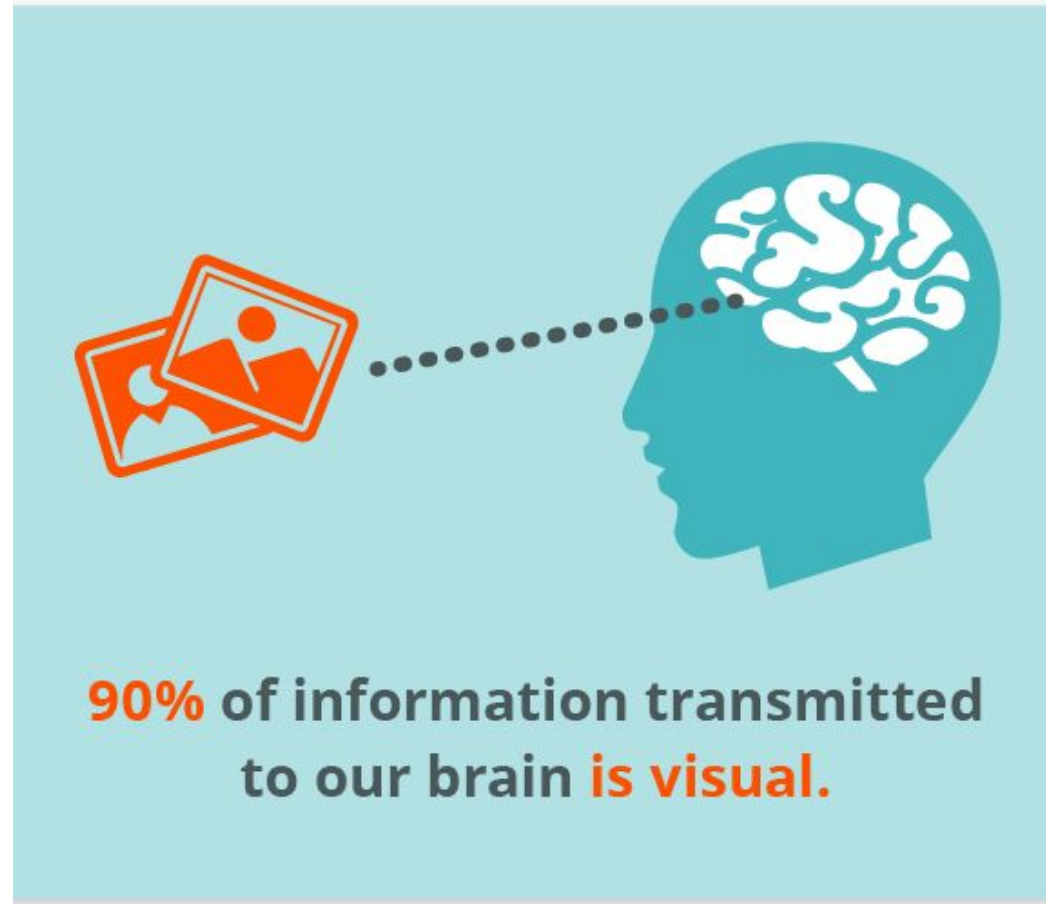
- Attention is a commodity.
- Retain 5-7 bits of info at a time.
- 8 second attention... I already lost it.



WHY VISUALIZE DATA?

“I am visual.”

- More **visual** thinkers.
Thanks internet!
- Faster **comprehension**.
Keep up!



WHY VISUALIZE DATA?

A Picture's Worth..

- Curb appeal sells.
- Improves credibility, change the default.



WHY VISUALIZE DATA?



WHEN TO USE DATA VISUALIZATION?

WHEN TO USE



ANSWER QUESTIONS

How many Web visitors last month?



ADD OBJECTIVITY TO AN ARGUMENT

This is why we should invest.



DISCOVER NEW INSIGHTS

The majority of people have green eyes.



COMMUNICATE QUICKLY AND EFFECTIVELY

Traffic to our website is up.

WAYS TO USE



MARKETING CONTENT

Public-facing content for thought leadership or promotion such as blogs, white papers, infographics



REPORTING

Data conveying change over time, pin-pointing outliers or performance results presented in a variety of formats



INTERNAL COMMUNICATION

Information delivered to leaders that influence planning and decision-making such as dashboards

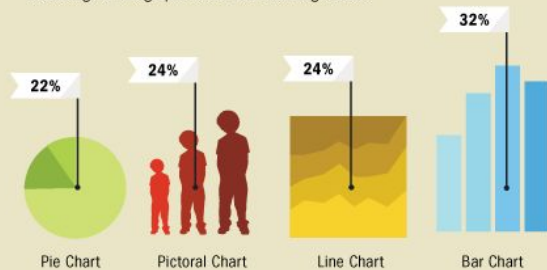
INFOGRAPHIC OF INFOGRAPHICS

Data visualization is a popular new way of sharing research. Here is a look at some of the visual devices, informational elements, and general trends found in the modern day infographic.

DESIGN

CHART STYLE

Percentage of infographics with the following charts:



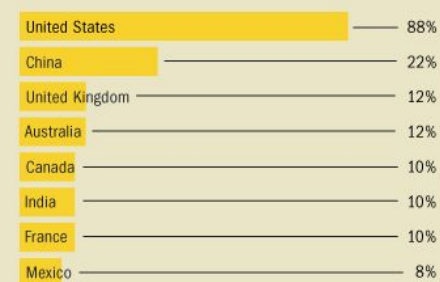
FONT

■ Sans Serif ■ Condensed Sans Serif
■ Serif



CONTENT

COUNTRIES FEATURED



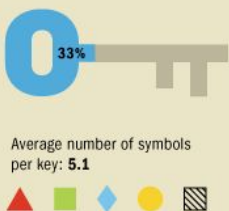
THEME

Relative popularity of different infographic themes:

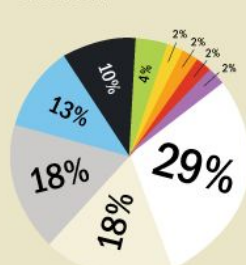


KEY INFO

Percentage of infographics with key:

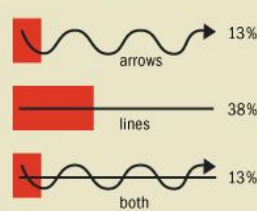


BASE COLOR

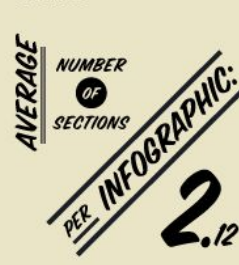


NAVIGATIONAL ICONOGRAPHY

Frequency of arrows & connecting lines in infographics:



SECTIONS



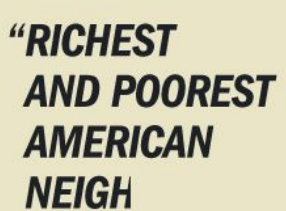
CREDITED SOURCES

Average number of sources per infographic: 2.29



TITLE

Average number of words per infographic title: 4.36



CONCEPT & DESIGN Ivan Cash

SOURCE 49 infographics collected at random from www.good.is/infographics

INFORMATION GRAPHICS

the lets break it down issue

GOOD

the design

LOGOTYPE **ARNAUD NERDER**

70% WHITE BACKGROUND PAGES

73% WHITE CONTENT PAGES

SOLID COLOR CONTENT PAGES **73%**

9% PHOTO BACKGROUNDS

TYPE: **BLACK** AND **2 SPOT COLORS**

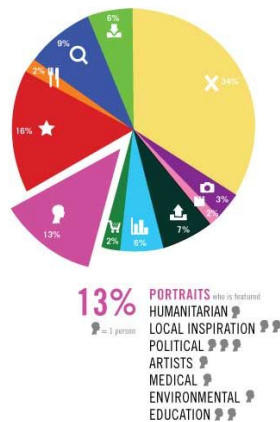
PAGE BY PAGE color coded / x marks size and number of ads



WHERE featured locations of each story



PAGE BY PAGE pie graph



KEY

ADS UPFRONT PORTRAITS INGREDIENTS FEATURE

IMAGES TRANSPARENCY THE ISSUE OUTBACK MARKETPLACE CONTENT

GOOD is for people who give a damn. It's an entertaining magazine about things that matter. Find out more: GOODMAGAZINE.COM

Issue 007
Winter 2010
\$4.95 U.S. \$5.95 Canada

NEW YORK

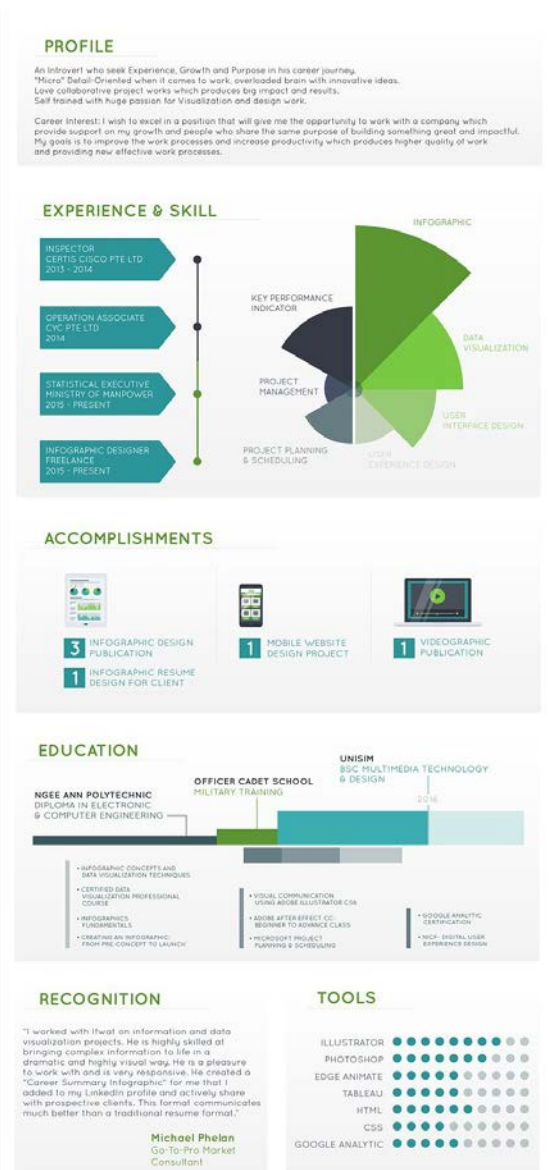
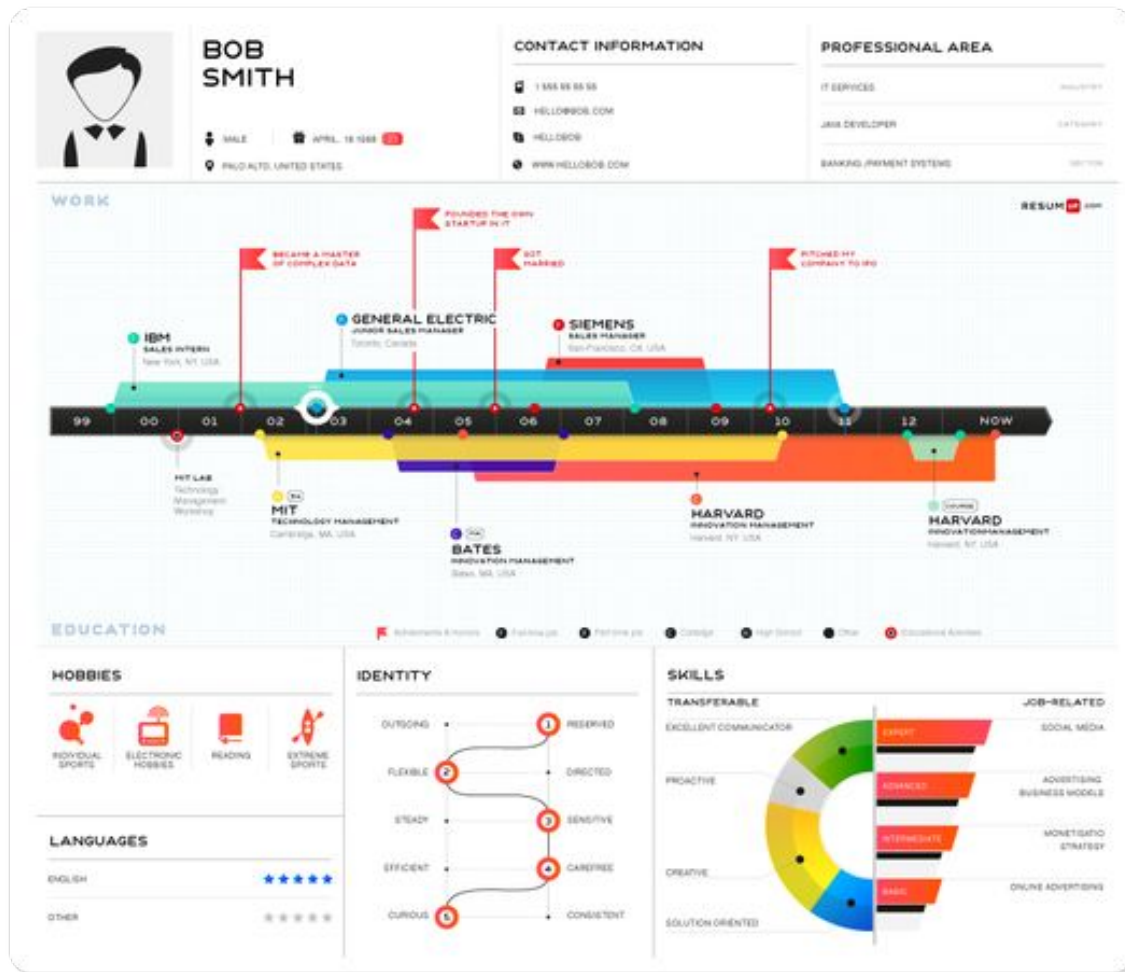
The Approval Matrix: Week of June 12, 2017

Our deliberately oversimplified guide to who falls where on our taste hierarchies. Mouse over or tap the image for related links.

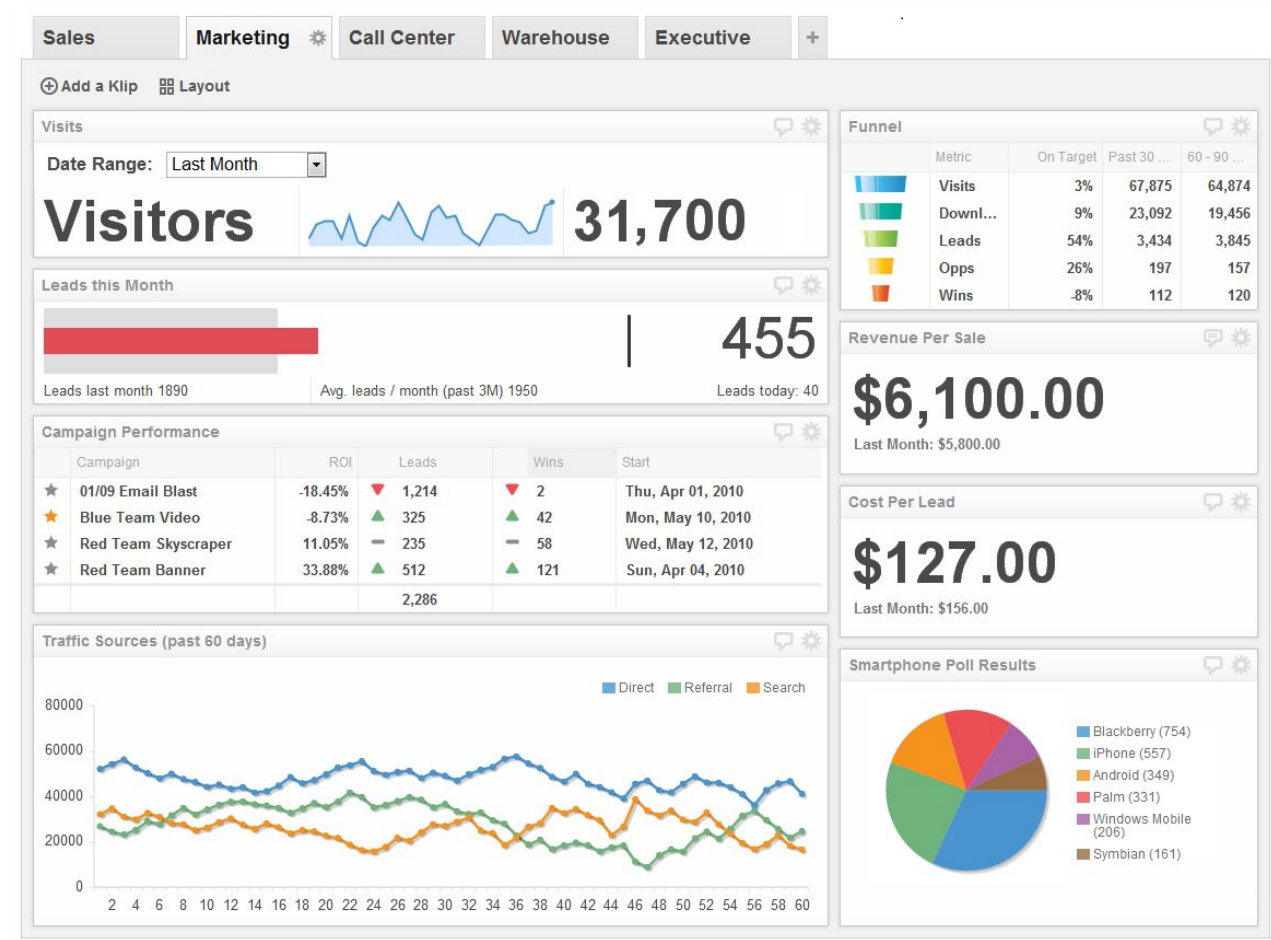
Published Jun 11, 2017



MAGAZINES / NEWS

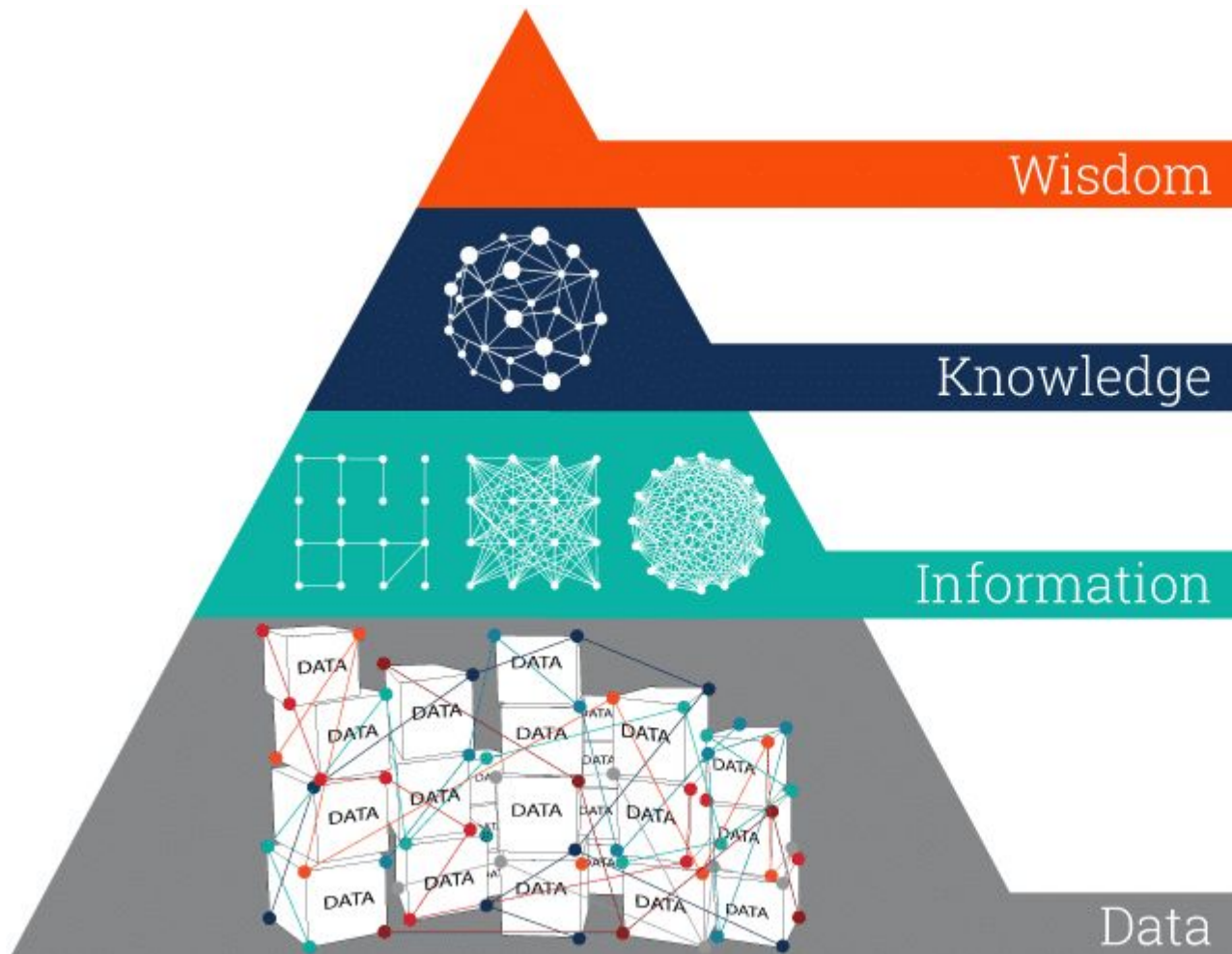


RESUMES/TIMELINES



DASHBOARDS / INTERFACES

HOW DO YOU MAKE SENSE OF DATA?



LET ME PROCESS.



SYMMETRY



SIMILARITY



SIMPLICITY



PROXIMITY



CLOSURE



COMMON REGION



CONTINUITY



CONNECTEDNESS



GIVE ME SOME SPACE.



SPACE



ALIGNMENT



HIERARCHY



PROXIMITY

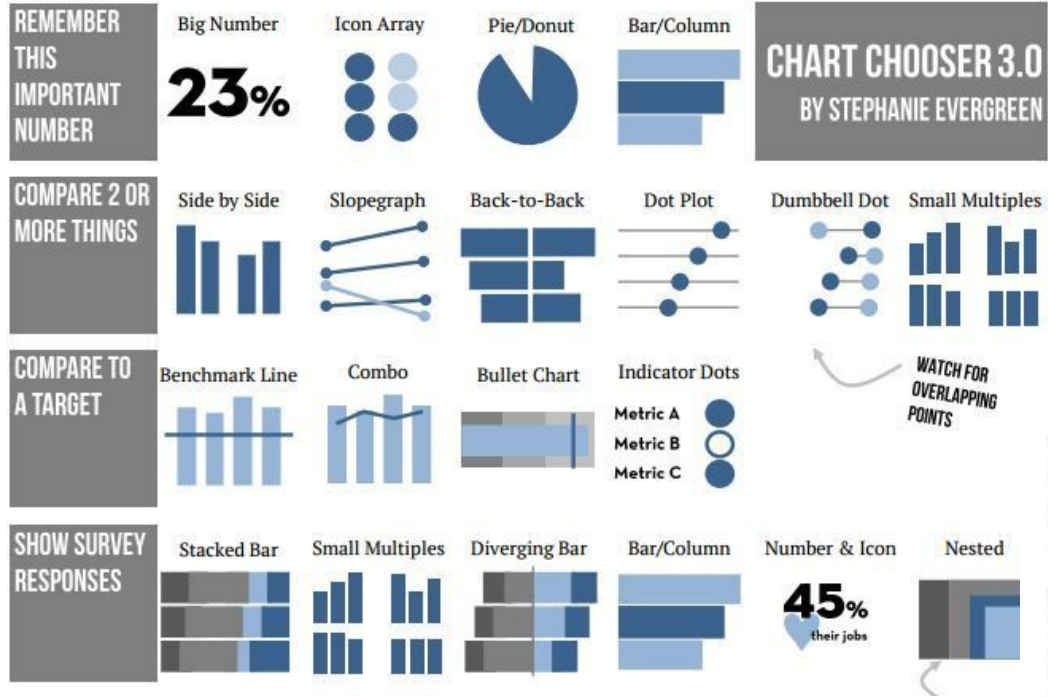


BALANCE



REPETITION

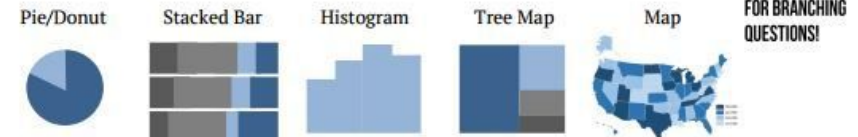
CHOOSE THE RIGHT CHART.



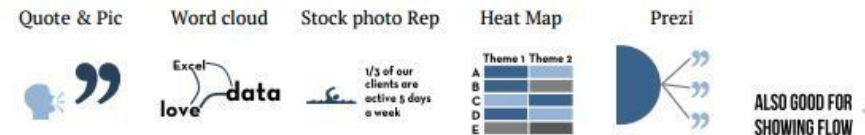
All things
Stephanie Evergreen.

Presenting Data Effectively is a great resource.

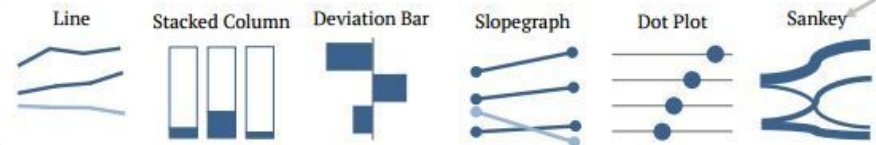
THESE ARE THE PARTS OF THIS WHOLE



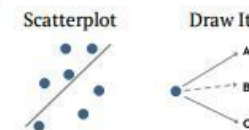
VISUALIZE OPEN-ENDED COMMENTS



HEY, THINGS CHANGED OVER TIME



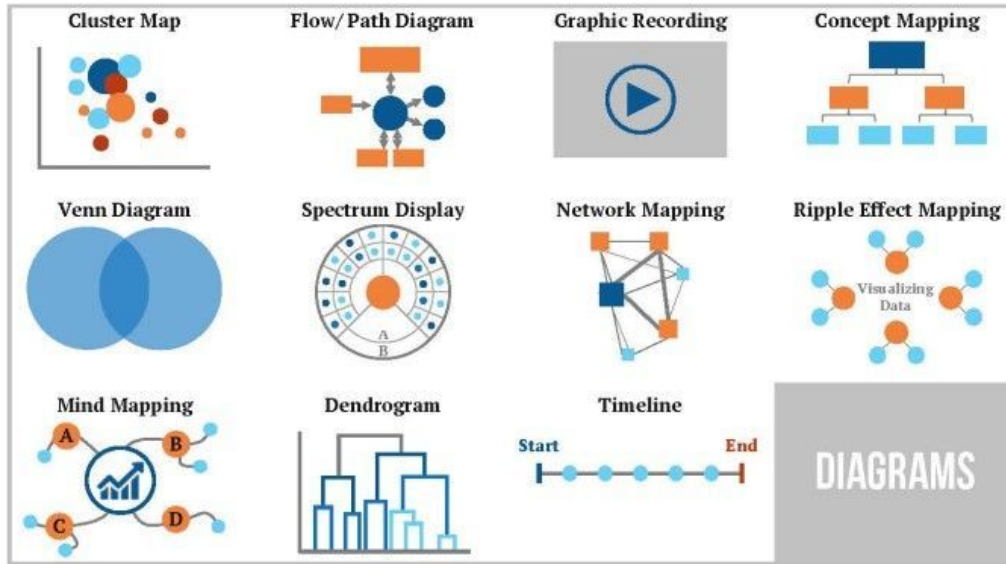
THIS THING CHANGES WHEN THAT THING DOES



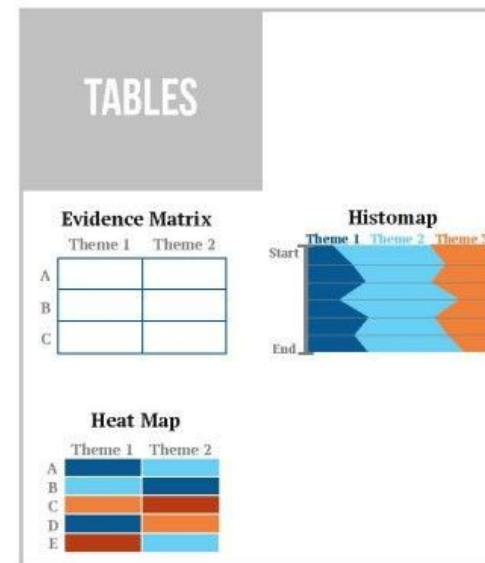
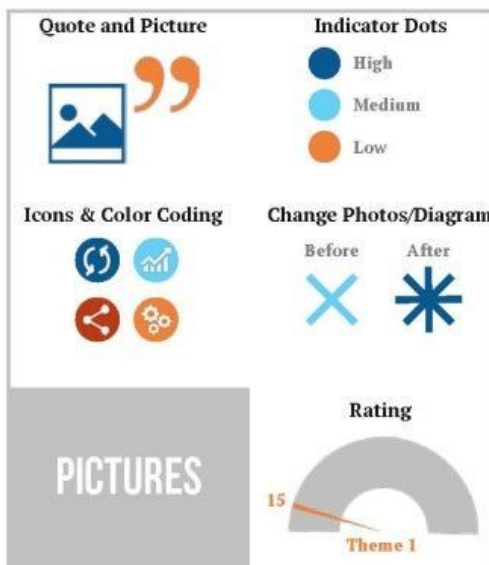
FOR MORE SEE

STEPHANIEEVERGREEN.COM/TAG/STEP-BY-STEP
STEPHANIEEVERGREEN.COM/BLOG
PRESENTING DATA EFFECTIVELY

CHOOSE THE RIGHT CHART.

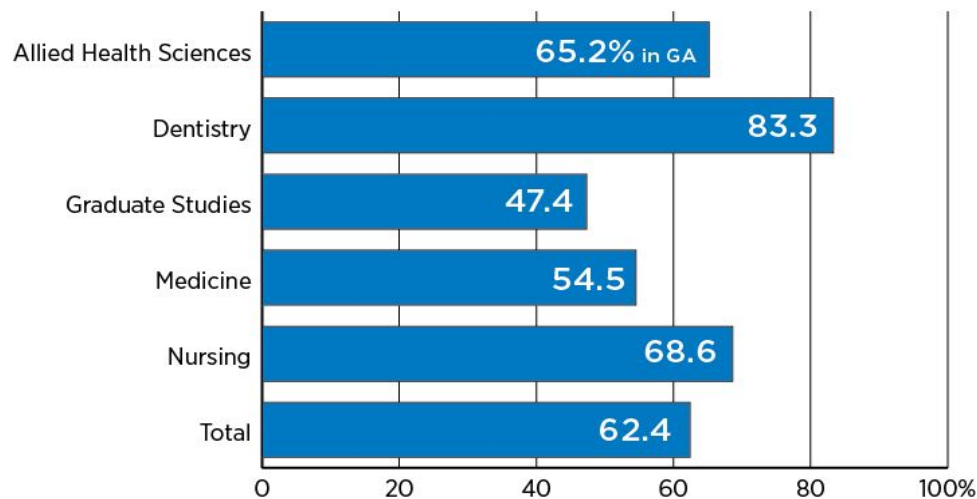


More Stephanie Evergreen.
This is the Quantitative
Chart Chooser.



SUMMARY AND DETAIL.

Choose the right **visualization** to tell the story. Don't make people do mental math. Provide detail for precision and deeper comparison.

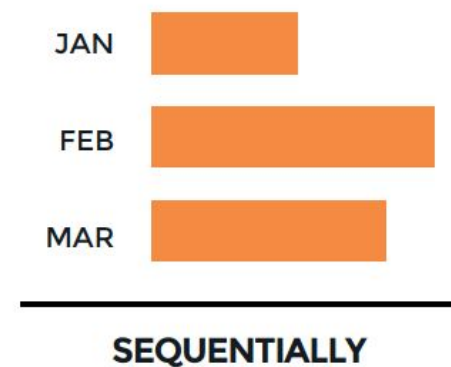
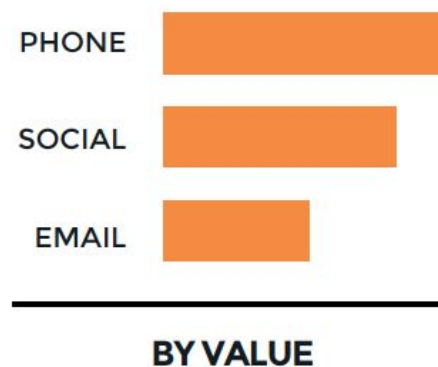
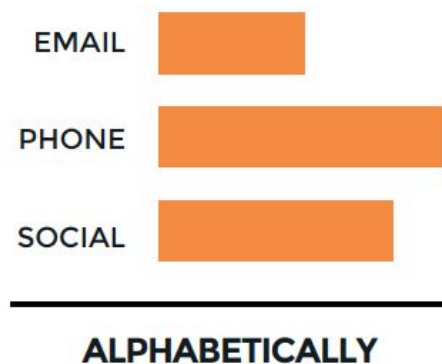


Georgia Health Sciences University						
IRIS - Online data and information system						
Alumni by State Codes, 2010						
Statecode	Allied Health	Dentistry	Graduate Studies	Medicine	Nursing	Total
AK-Alaska	7	4	2	9	8	30
AL-Alabama	108	13	56	237	94	508
AR-Arkansas	12	1	7	13	4	37
AZ-Arizona	28	3	14	44	30	119
CA-California	58	13	61	162	94	388
CO-Colorado	42	14	22	67	51	196
CT-Connecticut	11	0	11	26	7	55
DC-District of Columbia	1	1	3	10	8	23
DE-Delaware	3	1	5	5	1	15
FL-Florida	343	43	110	425	238	1159
GA-Georgia	4458	1521	1172	4042	4230	15423
GU-Guam	1	0	0	0	0	1
HI-Hawaii	9	1	1	13	8	32
IA-Iowa	6	1	6	10	5	28
ID-Idaho	7	2	2	14	4	29
IL-Illinois	22	7	26	39	20	114
IN-Indiana	24	1	13	28	18	84
KS-Kansas	11	1	10	7	13	42
KY-Kentucky	18	2	22	49	30	121
LA-Louisiana	26	1	14	51	20	112
MA-Massachusetts	13	0	21	50	18	102
MD-Maryland	38	7	41	72	37	195
ME-Maine	7	0	5	15	2	29
MI-Michigan	28	2	10	27	18	85
MN-Minnesota	11	1	12	22	7	53
MO-Missouri	18	2	18	32	9	79
MS-Mississippi	23	1	7	29	24	84
MT-Montana	7	1	4	13	10	35
NC-North Carolina	290	22	103	419	193	1027
ND-North Dakota	0	0	0	3	0	3
NE-Nebraska	10	0	7	6	3	26
NH-New Hampshire	5	2	2	5	4	18
NJ-New Jersey	22	2	22	25	13	84
NM-New Mexico	9	2	5	20	10	46
NV-Nevada	10	0	5	22	8	45
NY-New York	27	4	37	77	21	166
OH-Ohio	23	2	27	42	28	122
OK-Oklahoma	8	2	14	15	8	47
OR-Oregon	26	6	13	43	18	106
PA-Pennsylvania	33	2	34	49	30	148
PR-Puerto Rico	0	0	0	0	1	1
RI-Rhode Island	7	0	6	8	2	23
SC-South Carolina	594	76	207	432	441	1750
SD-South Dakota	3	0	2	4	1	10
TN-Tennessee	149	18	64	290	109	630
TX-Texas	98	11	87	159	113	468
UT-Utah	13	0	27	6	7	53
VA-Virginia	95	20	70	169	86	440
VI (Virgin Islands)	0	1	0	0	2	3
VT-Vermont	1	1	6	5	2	15
WA-Washington	40	7	17	38	31	133
WI-Wisconsin	11	1	13	23	6	54
WV-West Virginia	8	1	9	12	3	33
WY-Wyoming	3	2	1	3	2	11
Total	6825	1826	2432	7407	6150	24640

ORDER CATEGORIES LOGICALLY.



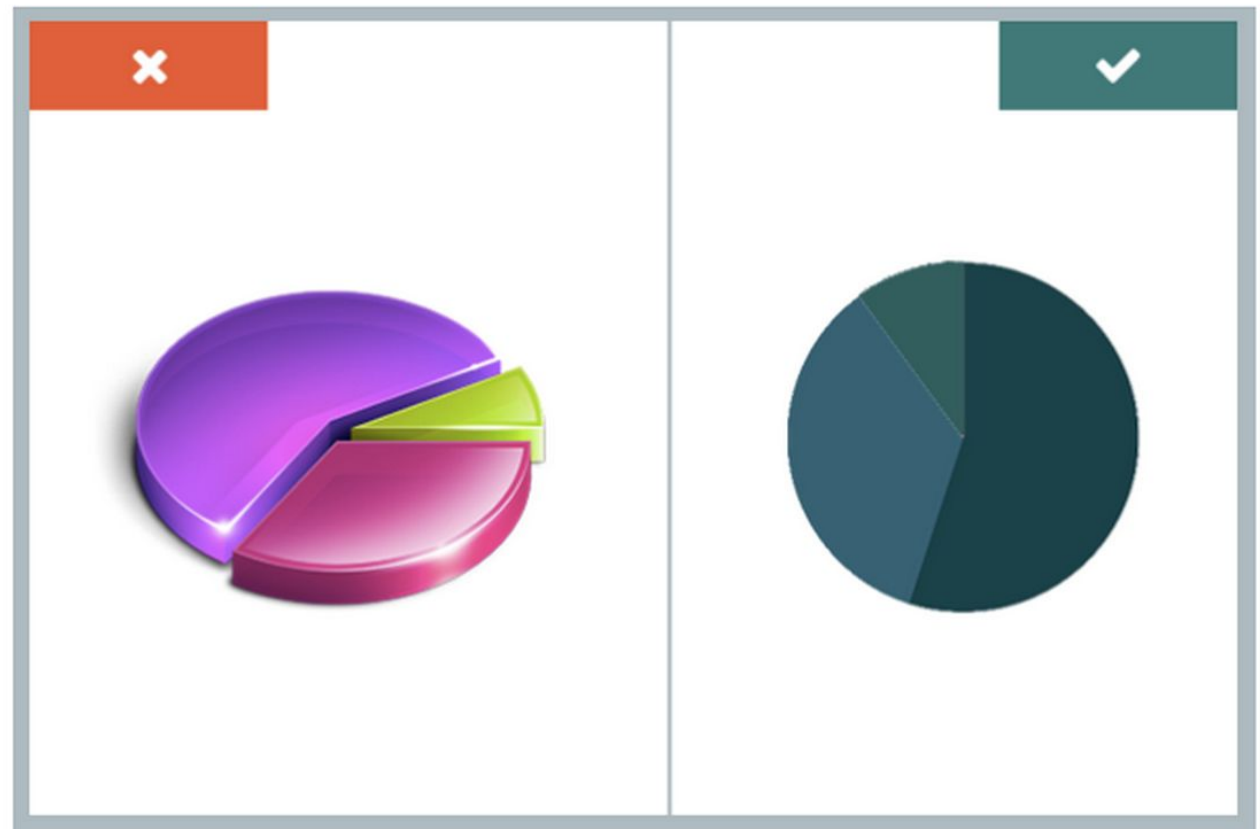
Intuitive ordering helps aid comprehension by shortening the time it takes to become oriented.



ACCURATE DATA OR FORGET IT.

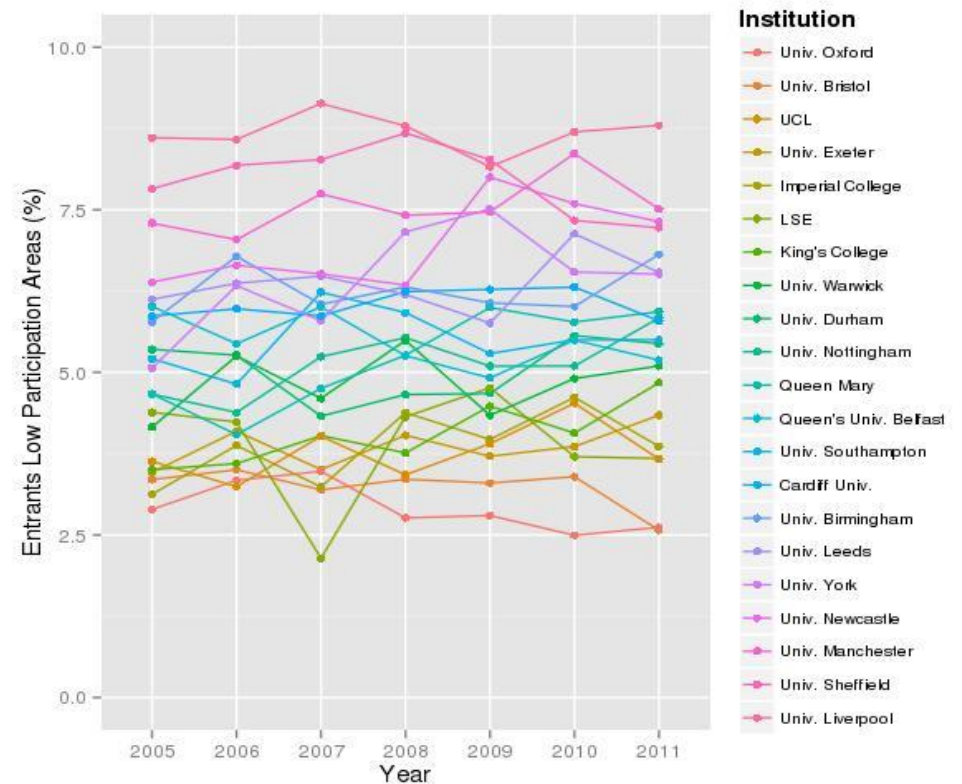


- Don't skew data with decorative displays.
- If precision is sacrificed for the sake of design, credibility will be at risk.



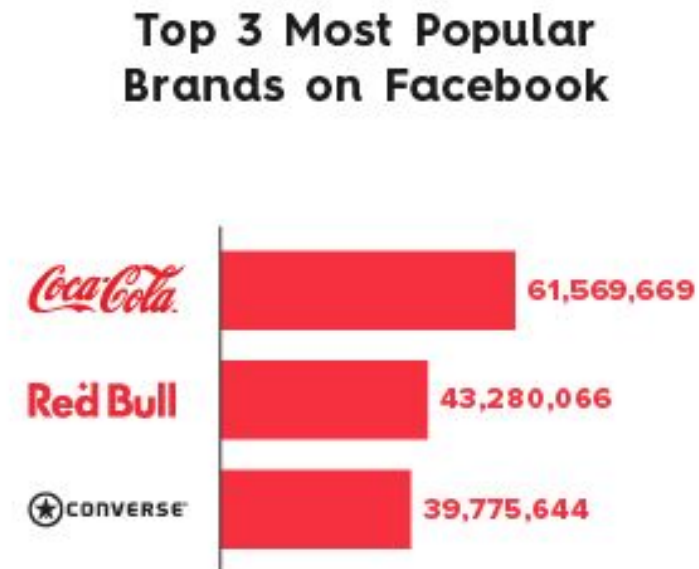
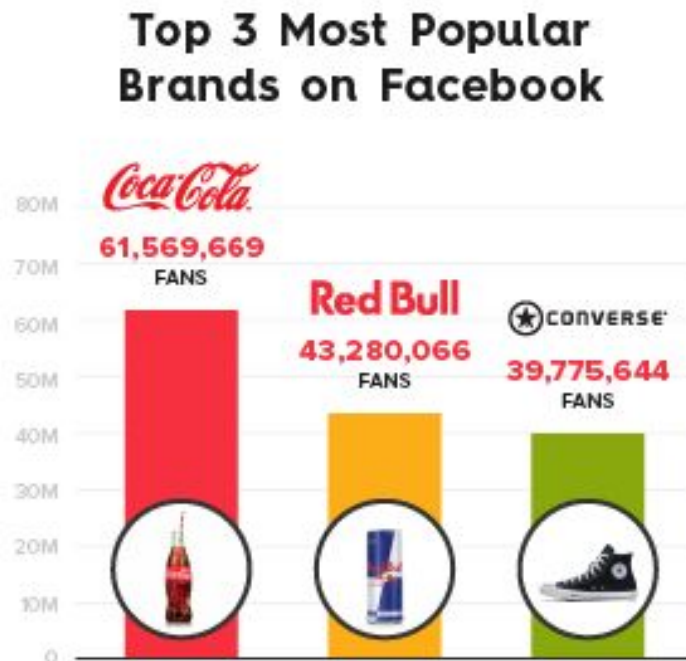
SPLIT OUT LOTS OF VARIABLES.

- Pay attention to **weights and lengths of lines**.
- Don't plot more than four lines on a single graph.
- Try to label lines directly if possible, legends require the user to do extra work.
- **(SMALL MULTIPLES!)**



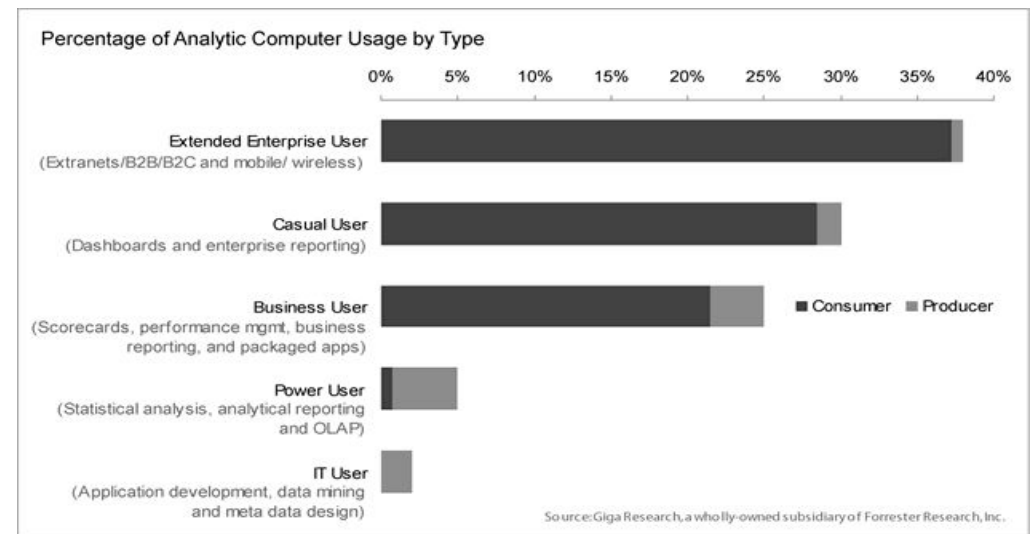
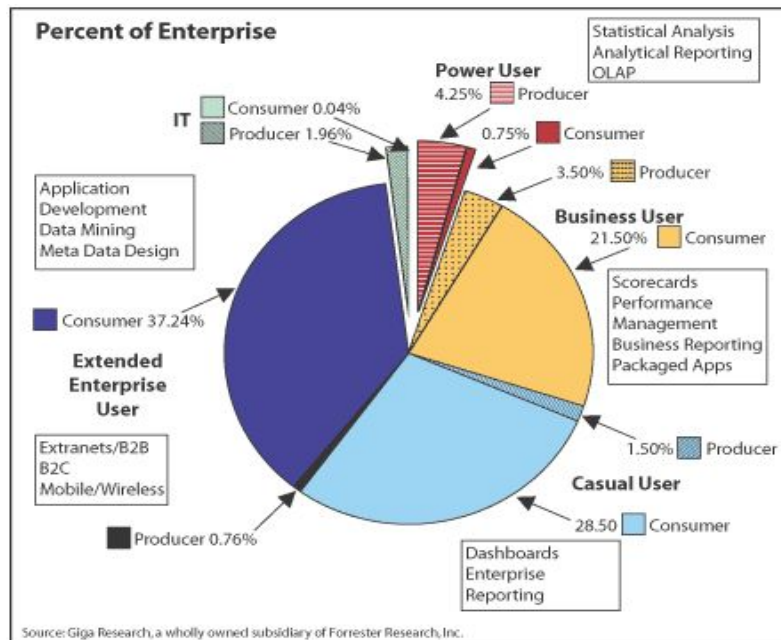
STRIP AWAY THE NON-ESSENTIAL.

No chart junk. Exciting graphics aren't always the most accurate. What do you want the user to take away from this?



MINIMIZE DESIGN ELEMENTS.

Limit use of **colors, fonts, patterns, lines, 3D, drop shadows** – too much detracts from data.



KEEP IT CONSISTENT.

THE PERIODIC TABLE OF JAZZ

AN EVOLUTION OF JAZZ STYLE, IMPROVISATION AND INNOVATION VISUALIZED

THE PERIODIC TABLE OF JAZZ

AN EVOLUTION OF JAZZ STYLE, IMPROVISATION AND INNOVATION VISUALIZED

TENOR SAXOPHONE

TRUMPET

PIANO

MILES DAVIS

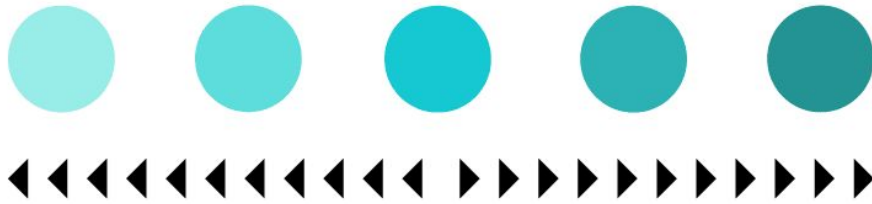
ALTO/BARI SAXOPHONE

DRUMS/BASS/GUITAR

BAND/BANDLEADER OR COMPOSER/ARRANGER

L ¹ Louis Armstrong																	Jr ² Jelly Roll Morton				
Hk ³ Coleman Hawkins	Pz ⁴ Lester Young															Ro ⁵ Roy Eldridge	Lu ⁶ Jimmie Lunceford	A ⁷ Art Tatum	B ⁸ Benny Goodman	C ⁹ Count Basie	D ¹⁰ Duke Ellington
Bi ¹¹ Charlie Parker	Dz ¹² Dizzy Gillespie															Dx ¹³ Dexter Gordon	Mx ¹⁴ Max Roach	Le ¹⁵ Lee Konitz	Tr ¹⁶ Lennie Tristano	Bd ¹⁷ Bud Powell	Th ¹⁸ Thelonious Monk
Nk ¹⁹ Sonny Rollins	Cl ²⁰ Clifford Brown	Go ²¹ Benny Golson	Ha ²² Hank Mobley	Gz ²³ Stan Getz	Ju ²⁴ Gerry Mulligan	Ca ²⁵ Cannonball Adderley	Ch ²⁶ Chet Baker	M ²⁷ Miles Davis	G ²⁸ Gil Evans	Lm ²⁹ Lee Morgan	Mq ³⁰ John Lewis	Bu ³¹ Art Blakey	Ly ³² George Russell	Ni ³³ Herbie Nichols	Ag ³⁴ Horace Silver	Da ³⁵ Dave Brubeck					
T ³⁶ John Coltrane	O ³⁷ Ornette Coleman	Ay ³⁸ Albert Ayler	Do ³⁹ Eric Dolphy	Sh ⁴⁰ Archie Shepp	Jm ⁴¹ Jackie McLean	Jh ⁴² Joe Henderson	W ⁴³ Wayne Shorter	Mi ⁴⁴ Miles Davis	F ⁴⁵ Freddie Hubbard	Mu ⁴⁶ Charles Mingus	Ah ⁴⁷ Andrew Hill	El ⁴⁸ Elvin Jones	Ce ⁴⁹ Cecil Taylor	Hb ⁵⁰ Herbie Hancock	Mc ⁵¹ McCoy Tyner	Be ⁵² Bill Evans					
Wr ⁵³ Weather Report	Ma ⁵⁴ Mahavishnu Orchestra	Ac ⁵⁵ Art Ensemble of Chicago	Br ⁵⁶ Anthony Braxton	Ja ⁵⁷ Jan Garbarek	Eb ⁵⁸ Eberhard Weber	Lb ⁵⁹ Dave Liebman	Gr ⁶⁰ Steve Grossman	MI ⁶¹ Miles Davis	Wo ⁶² Woody Shaw	Kw ⁶³ Kenny Wheeler	Jp ⁶⁴ Jaco Pastorius	Or ⁶⁵ Oregon	Pb ⁶⁶ Paul Bley	Ch ⁶⁷ Chick Corea	Z ⁶⁸ Joe Zawinul	K ⁶⁹ Keith Jarrett					
Sk ⁷⁰ Wynton Marsalis	St ⁷¹ Branford Marsalis	Lo ⁷² Joe Lovano	Co ⁷³ Steve Coleman	Zn ⁷⁴ John Zorn	Tb ⁷⁵ Tim Berne	Mb ⁷⁶ Michael Brecker	Kg ⁷⁷ Kenny Garrett	Te ⁷⁸ Terence Blanchard	Rb ⁷⁹ Randy Brecker	Tm ⁸⁰ Tom Harrell	Sc ⁸¹ John Scofield	Pm ⁸² Pat Metheny	Cb ⁸³ Carla Bley	Ad ⁸⁴ Anthony Davis	Ga ⁸⁵ Geri Allen	Dt ⁸⁶ Kenny Kirkland					

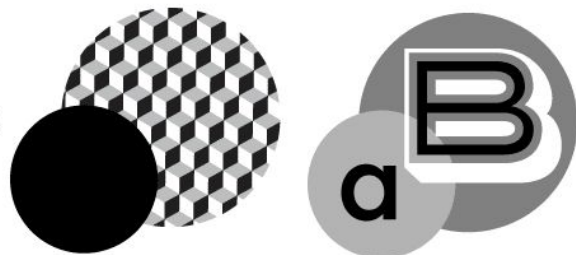
CONTRAST AND COMPARE.



Lighter

Middle
Value

Darker



Using Patterns for Contrast & Visual Interest



INTRODUCING...

Lorem ipsum dolor sit amet,
consectetur adipiscing elit, sed
do eiusmod tempor incididunt
ut labore et dolore magna
aliqua.




INTRODUCING...


Lorem ipsum dolor sit amet,
consectetur adipiscing elit, sed
do eiusmod tempor incididunt
ut labore et dolore magna
aliqua.



YOU'RE
INVITED
to our
free
event

Hosted by: 



Hosted by: 

Contrasting
Fonts

Yellowtail
MONTSERRAT

NORWESTER
Arvo Italic

LEAGUE GOTHIC
Georgia

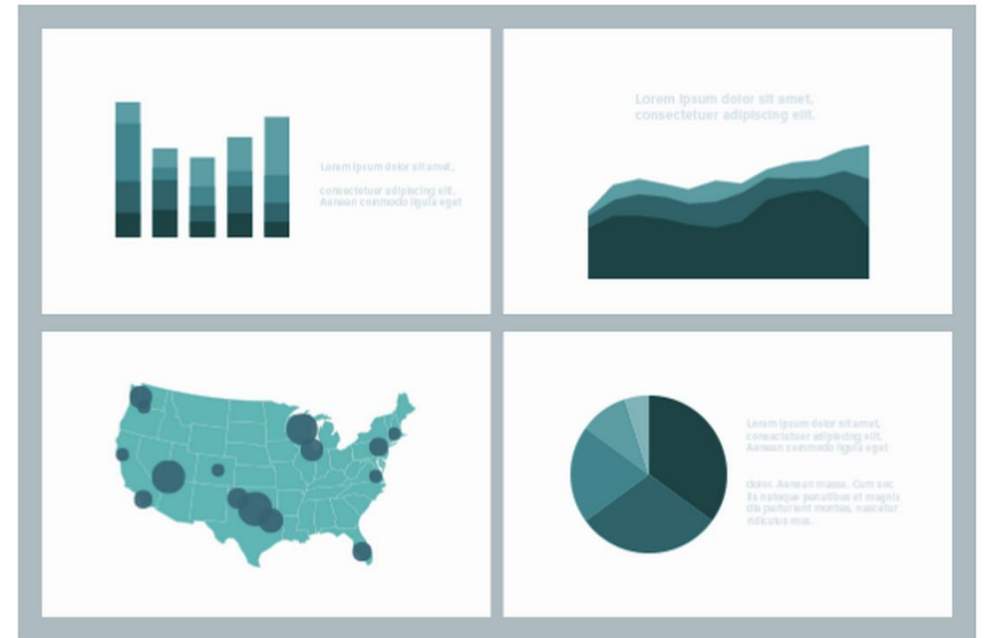
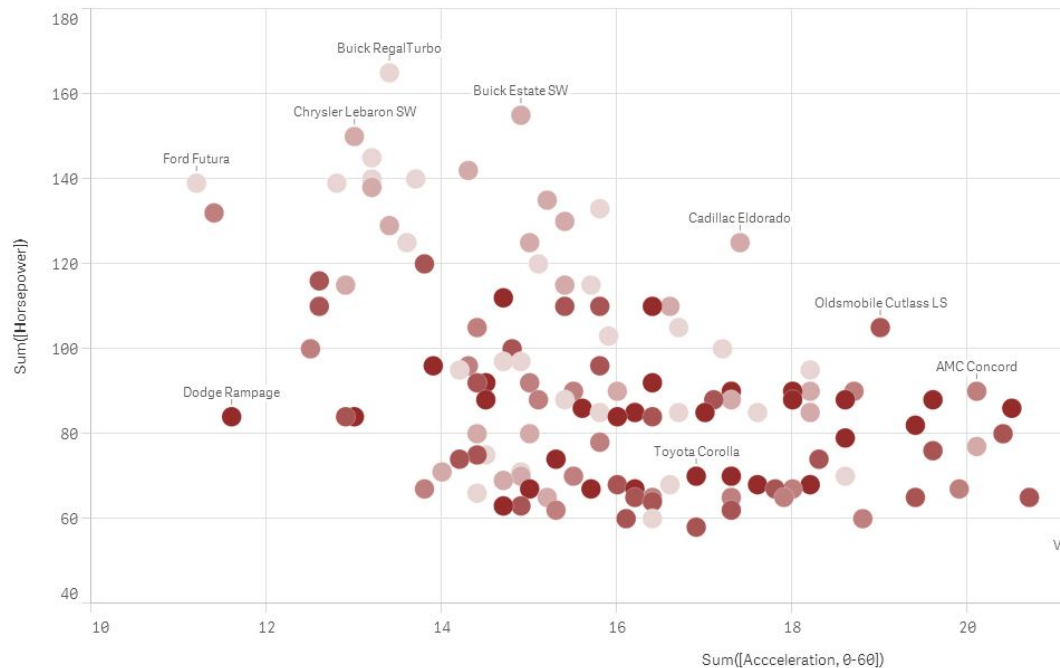
Abril Fatface
Lato Light

USE COLOR TO CONTRAST VALUES.



CONTRAST provides emphasis to a particular pattern or trend when comparing values.

Clustering by Year



USE COLOR WISELY.



5 OR LESS. Color should be used sparingly to highlight important information.

SEQUENTIAL

color reordered from high to low



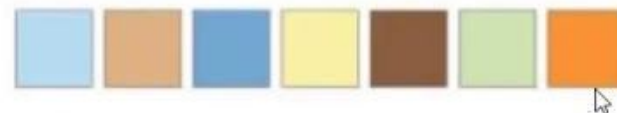
DIVERGING

two sequential colors with a neutral midpoint



CATEGORICAL

contrasting colors for individual comparison



HIGHLIGHT

color used to highlight something



ALERT

color used to get reader's attention



COLOR TIPS TO REMEMBER.

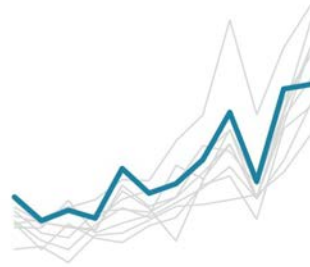


- **Color encodes value** but using too many is confusing.
- Don't use multiple colors to represent the same kind of data (**no color wheels**).
- Grayscale is still a powerful way to visualize data.
Contrast is key.

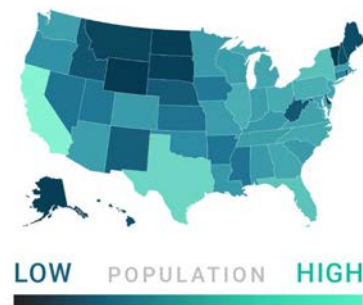
NOT IDEAL



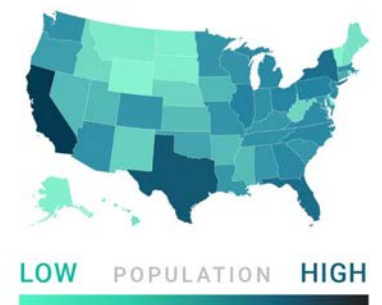
BETTER



NOT IDEAL



BETTER



CHOOSE THE RIGHT FONT.



Comic Sans
is never an
acceptable font.
Unless you are
an 8 year old
girl writing
a poem about
unicorns.

bad

**EVENBAD
LOOKSGOOD
WITHHELVETICA**

Helvetica Hel-ve-ti-ca [hel-vetika]
Grotesque sans serif face, also classified as lineal under the vox-atypi classification of type. The
strokes in helvetica are monotone in weight and the overall forms of the typeface itself are based on
akzidenz-grotesk from berthold around 1898.

DESIGN YOUR WORDS.

LIMIT YOUR FONTS

Title heading
Sub heading
This is my body text for the design.

PICK FONTS THAT PAIR WELL

I am first
I am second

AVOID STRETCHING FONTS

HELP ME

ENHANCE READABILITY

✓ CAN YOU SEE ME?
✗ CAN YOU SEE ME?

HANDLE WIDOWS / ORPHANS

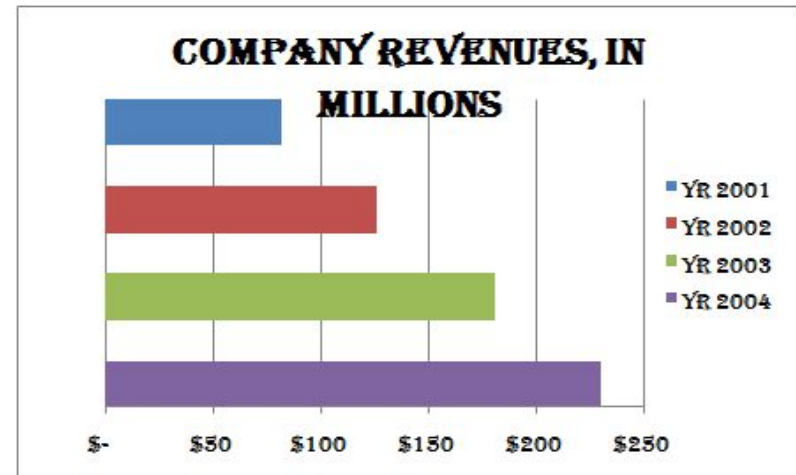
orphan widow

DON'T USE TRENDY FONTS

Lobster

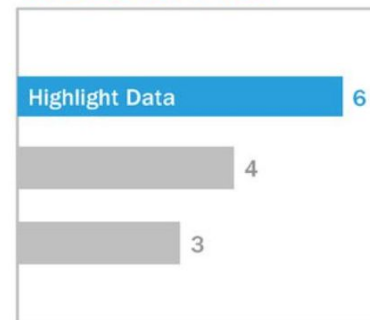
DON'T LET FONTS WIN.

- Be consistent with fonts and styles.
- Try not to use more than 2 or 3 fonts or a font family
- Don't use ~~decorative~~ fonts to display numbers.
- Soften axes and labels using gray type instead of black.



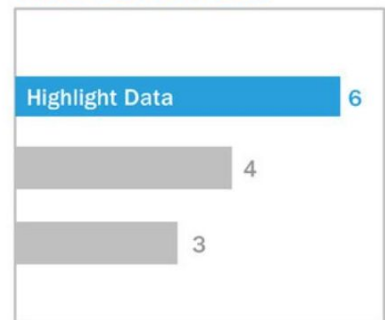
Top Level Font

Mid Level Font



Low Level Font

Mid Level Font

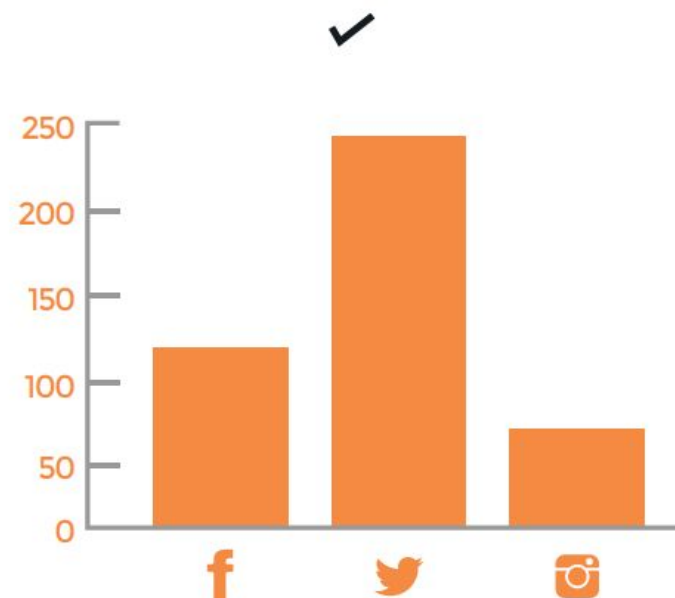
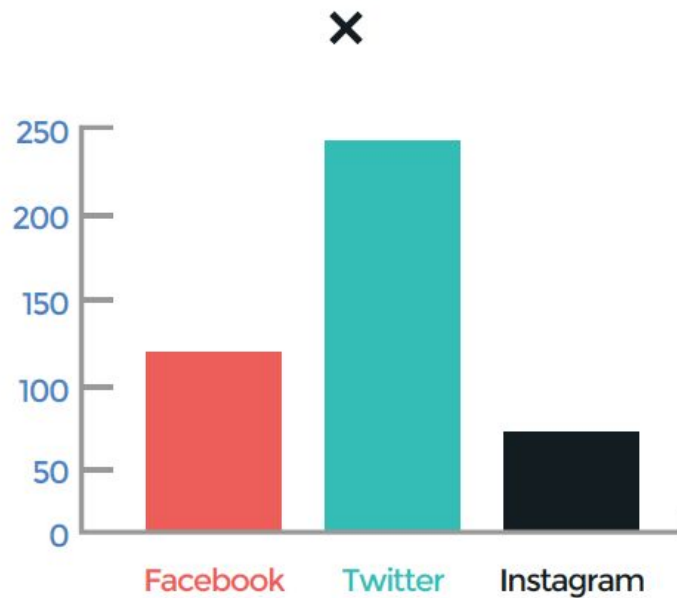


Low Level Font

SO ICONIC.



Use icons for faster comprehension.





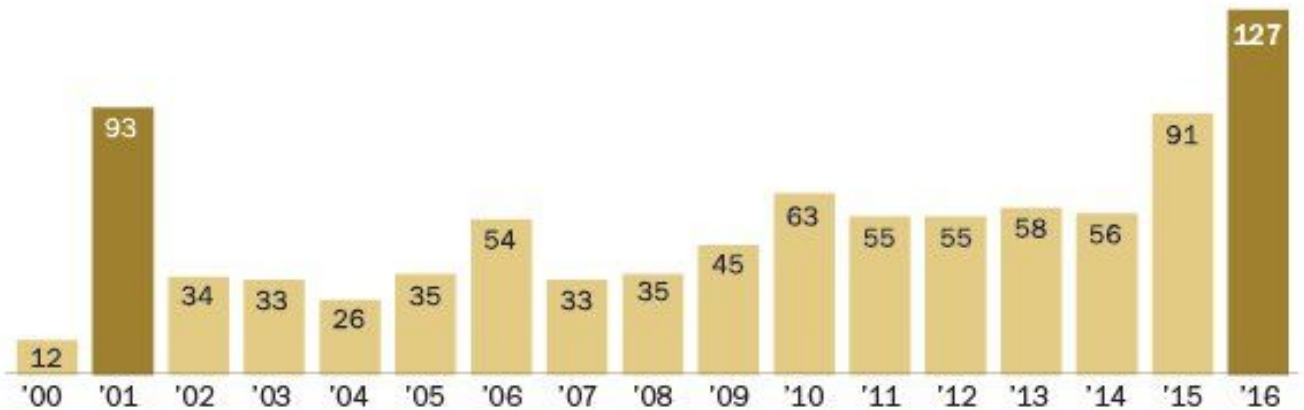
NOTES ON A GOOD CHART



- Good header and subheader
- Note:
- Source:
- From Where:
- Label inside the bar
- Gradient colors on bar
- Different weights type

Anti-Muslim assaults exceed 2001 total

Anti-Muslim assaults in U.S. reported to the FBI



Note: Includes simple and aggravated assaults.

Source: Federal Bureau of Investigation.

PEW RESEARCH CENTER

DATA DESIGN CHECKLIST



1 | DO USE ONE COLOR TO REPRESENT EACH CATEGORY.



2 | DO ORDER DATA SETS USING LOGICAL HEIRARCHY.



3 | DO USE CALLOUTS TO HIGHLIGHT IMPORTANT OR INTERESTING INFORMATION.



4 | DO VISUALIZE DATA IN A WAY THAT IS EASY FOR READERS TO COMPARE VALUES.



5 | DO USE ICONS TO ENHANCE COMPREHENSION AND REDUCE UNNECESSARY LABELING.



6 | DON'T USE HIGH CONTRAST COLOR COMBINATIONS SUCH AS RED/GREEN OR BLUE/YELLOW.



7 | DON'T USE 3D CHARTS. THEY CAN SKEW PERCEPTION OF THE VISUALIZATION.



8 | DON'T ADD CHART JUNK. UNNECESSARY ILLUSTRATIONS, DROP SHADOWS, OR ORNAMENTATIONS DISTRACT FROM THE DATA.



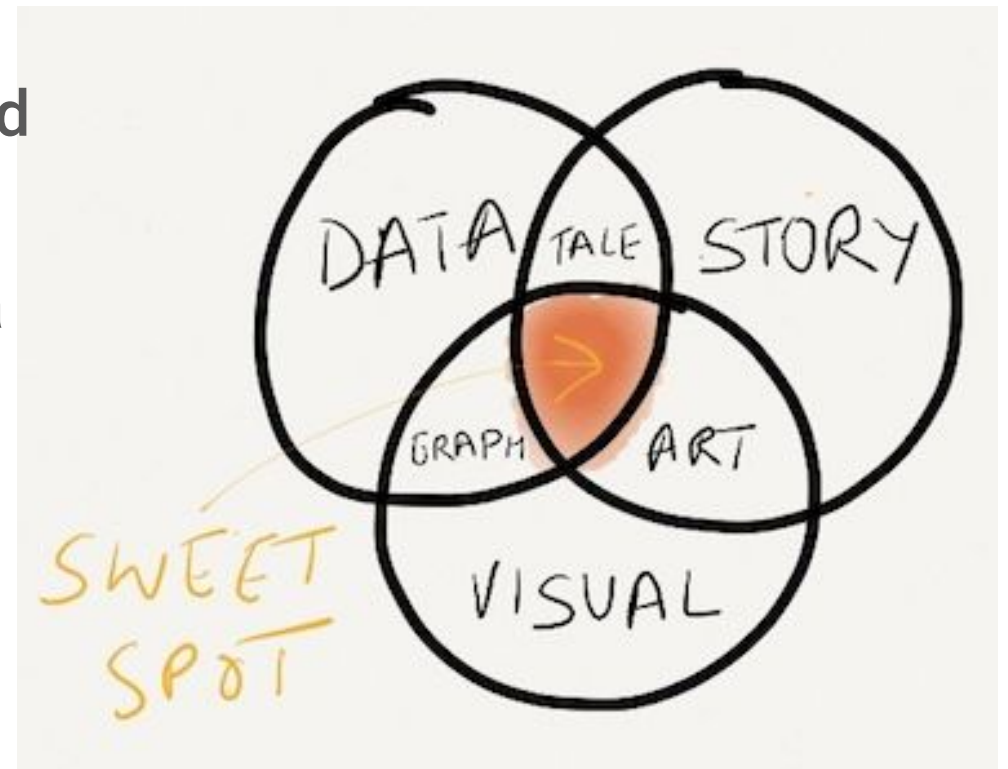
9 | DON'T USE MORE THAN 6 COLORS IN A SINGLE LAYOUT.



10 | DON'T USE DISTRACTING FONTS OR ELEMENTS (SUCH AS BOLD, ITALIC, OR UNDERLINED TEXT).

GIVE ME AN EXAMPLE.

1. **ASK** questions
2. **LOOK** for inspiration
3. **COLLECT + ORGANIZE** data and information
4. **DISCOVER** the story in the data
5. **CREATE** the prototype
6. **TEST, RINSE, REPEAT**
7. **IMPLEMENT, PUBLISH, LAUNCH, PRESENT**
8. Don't forget **USER FEEDBACK**



WHAT IS THE PROBLEM?

- **Example:** Request for information graphic from Dean Kelehear
- **Problem:** Need for Literacy Center in Richmond County



WHO IS THE AUDIENCE?



BEGINNER

New to the subject,
but not too elementary.



GENERALIST

Aware of the topic. General
comprehension, major
themes.



MANAGER

In-depth, actionable
understanding.
They want details.



EXPERT


The expert wants less
storytelling and more details.



EXECUTIVE

Executives have little time.
Significant points with
conclusions.

HOW WILL THE INFORMATION BE ORGANIZED?

- 
- Start with a simple **outline**.
 - Identify the **logical flow** of the narrative.
 - Map **data sources** to support each point.
 - Provide **context** for the data.
 - Summarize **key points**.
 - Include data that is **relevant and necessary** to tell the story.

LITERACY IS A PROBLEM

DATA: Educational progress and achievement

WHO IS AT RISK?

DATA: Children K-3

WHERE ARE THEY AT RISK?

DATA: Population indicators by state/county

WHAT DOES THIS MEAN?

DATA: Loss in educated future citizens

WHAT CAN BE DONE?

DATA: Interventions such as literacy center

HOW WILL THE INFORMATION BE CONSUMED?



- Presentation?
- Document?
- Website?
- All of the Above?



Report



Infographic



**Slide Presentation
PPTX**



Data Tables



Survey Instrument

LOOK FOR INSPIRATION.

Get Georgia Reading Campaign

[Out of School Suspensions, System Level](#)
[Children in Poverty \(5-17\), System Level](#)
[Directly Certified, System Level](#)
[Directly Certified, School Level](#)
[Birth to Females with less than 12th Grade Education, County](#)
[Low Birthweight Births, County Level](#)

SELECT A COUNTY

When selected, the table and scatterplot will filter to show county value. Click outside of the map to deselect system.



% OF LOW BIRTHWEIGHT BIRTHS

Darkers purple represents highest rates

County	%
Appling	11.8%
Atkinson	7.0%
Bacon	8.2%
Baker	
Baldwin	10.1%
Banks	4.8%
Barrow	8.7%
Bartow	8.6%
Beech Hill	15.1%

ALL CHILDREN READING: A GRAND CHALLENGE FOR DEVELOPMENT

793 MILLION ADULTS WORLDWIDE CANNOT READ THESE WORDS.
1 out of 4

GLOBAL LITERACY CHALLENGES

In some sub-Saharan African countries, children with 5 years of education still have a 40% chance of being illiterate.

73% of illiterate adults live in South and West Asia and sub-Saharan Africa.



In low income countries the majority of students do not acquire basic reading skills even after four years of primary school.

61 MILLION PRIMARY SCHOOL-AGE CHILDREN ARE OUT OF SCHOOL

IN SUB-SAHARAN AFRICA ALONE, **10 MILLION** DROP OUT OF PRIMARY SCHOOL EVERY YEAR.



MORE THAN 70% of children in primary grades cannot read at grade level in Mali, Pakistan and Peru.

LITERACY PLAYS A TREMENDOUS ROLE IN FUTURE SUCCESS

HEALTH
A child born to a mother who can read is 50% more likely to survive past age 5.

ECONOMY
Countries that have experienced surges in literacy rates by 20-30% have seen simultaneous increases in GDP of 8-16%.

YOU CAN MAKE A DIFFERENCE

You can make a difference in the lives of millions. Through All Children Reading a Grand Challenge for Development, USAID and partners seek and share innovations and solutions for:

- Widespread access to improved teaching and learning materials
- Better education data to support decision-making, transparency, incentives and accountability

Visit www.AllChildrenReading.org to learn more, offer and share ideas, and part of the solution. Together, let's get All Children Reading.

Please find all facts and their references at www.allchildrenreading.org/sources.

2015 KIDS COUNT PROFILE GEORGIA

OVERALL RANK **40**

THE ANNE E. CASEY FOUNDATION

ECONOMIC WELL-BEING

DOMAIN RANK

43

Children in poverty

2013

27%

651,000 CHILDREN

WORSENE

2008 20%

Children whose parents lack secure employment

2013

33%

814,000 CHILDREN

WORSENE

2008 28%

Children living in households with a high housing cost burden

2013

36%

908,000 CHILDREN

IMPROVED

2008 37%

Teens not in school and not working

2013

10%

56,000 TEENS

IMPROVED

2008 11%

EDUCATION

DOMAIN RANK

40

Children not attending preschool

2011-13

52%

146,000 CHILDREN

WORSENE

2007-09 51%

Fourth graders not proficient in reading

2013

66%

N.A.

IMPROVED

2007 72%

Eighth graders not proficient in math

2013

71%

N.A.

IMPROVED

2007 75%

High school students not graduating on time

2011/12

30%

N.A.

IMPROVED

2007/08 35%

N/A NOT AVAILABLE

HEALTH

DOMAIN RANK

37

Low-birthweight babies

2013

9.5%

12,064 BABIES

IMPROVED

2008 9.6%

Children without health insurance

2013

10%

238,000 CHILDREN

IMPROVED

2008 11%

Child and teen deaths per 100,000

2013

28

741 DEATHS

IMPROVED

2008 32

Teens who abuse alcohol or drugs

2012-13

5%

43,000 TEENS

IMPROVED

2007-08 6%

FAMILY AND COMMUNITY

DOMAIN RANK

40

Children in single-parent families

2013

40%

933,000 CHILDREN

WORSENE

2008 36%

Children in families where the household head lacks a high school diploma

2013

14%

359,000 CHILDREN

IMPROVED

2008 15%

Children living in high-poverty areas

2009-13

17%

418,000 CHILDREN

WORSENE

2006-10 11%

Teen births per 1,000

2013

30

10,322 BIRTHS

IMPROVED

2008 50

Georgia Family Connection Partnership, Inc. | www.gafcp.org | 404.527.7394

Learn more at datacenter.kidscount.org/GA

Health literacy for clinicians



LOW HEALTH LITERACY

Having low health literacy means your patients don't have the knowledge they need to find, understand and use information about their health and health care. You can help change this.



COMMISSION QUALITY IN HEALTH CARE

www.safetyandquality.gov.au



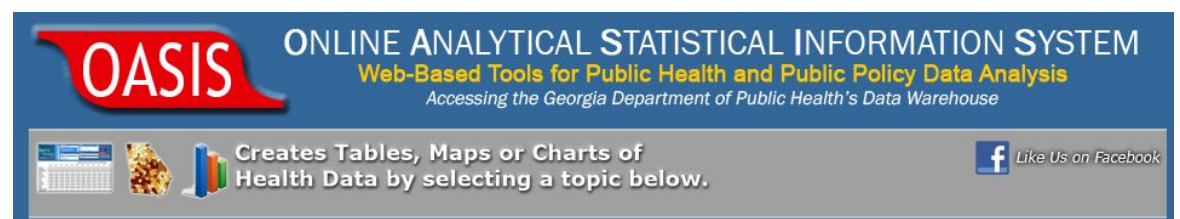
34% READING PROFICIENTLY
66% NOT READING PROFICIENTLY

COLLECT + ORGANIZE INFORMATION

Focus on collecting information that will provide a solid framework to help answer your question.

A good data source is:

- ORIGINAL
- COMPREHENSIVE
- CURRENT
- RELIABLE



DISCOVER THE STORY IN THE DATA.

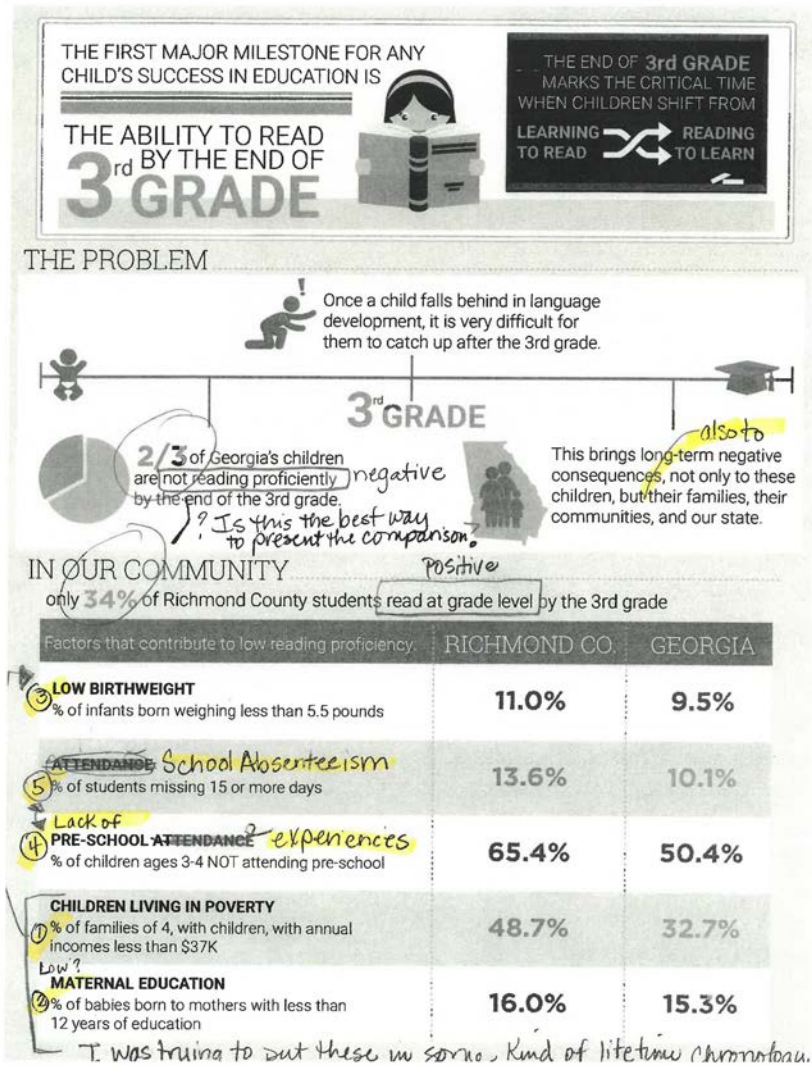
Your goal is to shape a concise and coherent narrative around the data to compel your audience to take some sort of **ACTION**.



Healthy Children

Indicator	Year	Richmond		Georgia
		Number	Rate	Rate
Low-birthweight babies	2016	363	12.5%	9.8%
Infant mortality (per 1,000)	2016	33	11.4	7.4
Children enrolled in Medicaid or Peachcare	2016	32,112	-	-
Children without health insurance ⁺	2016	2,343	4.9%	7.7%
Children enrolled in the WIC program, birth through 4	2016	4,049	-	-
Child deaths, ages 1-14 (per 100,000)	2016	16	43.5	18.7
Teen pregnancies, ages 15-17 (per 1,000)	2016	93	26.6	14.4
Teen births, ages 15-19 (per 1,000)	2016	224	35.4	23.5
Teen mothers giving birth to another child before age 20, ages 15-19	2016	35	15.8%	17.1%
9th grade students reporting alcohol use in the past 30 days	2016	211	10.4%	8.8%
9th grade students reporting perception of negative risk with alcohol consumption	2016	1,377	68.0%	76.2%
STD incidence for youth, ages 15-19 (per 1,000)	2016	739	54.2	29.8
Teen deaths, ages 15-19 (per 100,000)	2016	4	*	60.7
Teen deaths, by homicide, suicide and accident, ages 15-19 (per 100,000)	2016	2	*	45.0

CREATE THE PROTOTYPE.



THE IMPACT

AUGUSTA UNIVERSITY

ITERATE, PUBLISH + PRESENT.

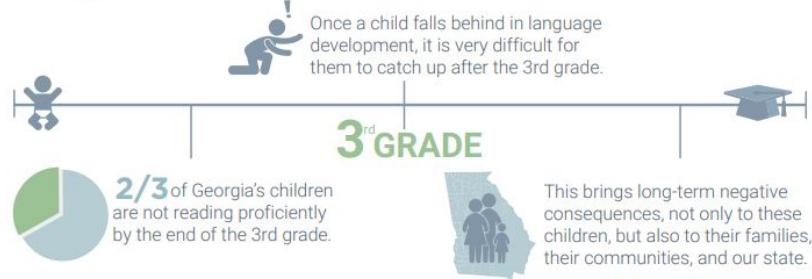
THE FIRST MAJOR MILESTONE FOR ANY CHILD'S SUCCESS IN EDUCATION IS

THE ABILITY TO READ
BY THE END OF
3rd GRADE



THE END OF **3rd GRADE** MARKS THE CRITICAL TIME WHEN CHILDREN SHIFT FROM
LEARNING TO READ → **READING TO LEARN**

THE PROBLEM



IN OUR COMMUNITY

66% of Richmond County students are not reading at grade level by the 3rd grade.

Factors that contribute to low reading proficiency:	RICHMOND CO.	GEORGIA
CHILDREN LIVING IN POVERTY % of families of 4, with children, with annual incomes less than \$37K	48.7%	32.7%
MATERNAL EDUCATION % of babies born to mothers with less than 12 years of education	16.0%	15.3%
LOW BIRTHWEIGHT % of infants born weighing less than 5.5 pounds	11.0%	9.5%
LACK OF EXPERIENCES % of children ages 3-4 NOT attending pre-school	65.4%	50.4%
SCHOOL ABSENTEEISM % of students missing 15 or more days	13.6%	10.1%

THE IMPACT

LITERACY PLAYS A TREMENDOUS ROLE IN FUTURE SUCCESS

Children who cannot read proficiently by the end of the 3rd grade are more likely to:



EXPERIENCE
POOR HEALTH



BECOME TEEN
PARENTS



HAVE DISCIPLINE
PROBLEMS



DROP OUT OF
HIGH SCHOOL

WHAT CAN OUR COMMUNITY DO?



The Get Georgia Reading Campaign has developed four research-based pillars that work together to provide a platform for success. Our goal is for the community to help promote literacy by incorporating these four pillars. We will offer an intentional and situated intervention for children and families so that the work we do with them is within context and aligned to the needs of the child and family.

Together we can make sure that **ALL** of Augusta's children are reading by the 3rd grade!

LANGUAGE NUTRITION	ACCESS	POSITIVE LEARNING CLIMATE	TEACHER PREPARATION & EFFECTIVENESS
<p>Physical Health & Early Literacy Experiences</p> <ul style="list-style-type: none"> Family Education Literacy Resources Tutoring Partnerships Professional Support for Childcare & Pre-K Educators Quality Childcare 	<p>Support Intervention Services</p> <ul style="list-style-type: none"> Community Resource Providers Health Services Assistance Family Education 	<p>Attendance, Engagement, Student Success</p> <ul style="list-style-type: none"> Community-driven activities Family Education Academic Tutoring Counseling 	<p>Best Teachers for our Community</p> <ul style="list-style-type: none"> Pre-service teacher internships In-service professional learning Free diagnostic reading support for community

AUGUSTA UNIVERSITY

References: <https://www.gafcp.org>, <http://getgeorgiareading.org>, <https://www.readrightfromthestart.org>

Be part of the solution!
Contact Augusta University College of Education
706-737-1499 www.augusta.edu/education/

[illegible]

Publisher

Recent

You haven't opened any publications recently. To browse for a publication, start by clicking on Open Other Publications.

Open Other Publications

Search for online templates:

Suggested searches: Brochure Label Card Certificate Flyer

FEATURED BUILT-IN

Blank 8.5 x 11"

Blank 11 x 8.5"

More Blank Page Sizes

Birthday invitations

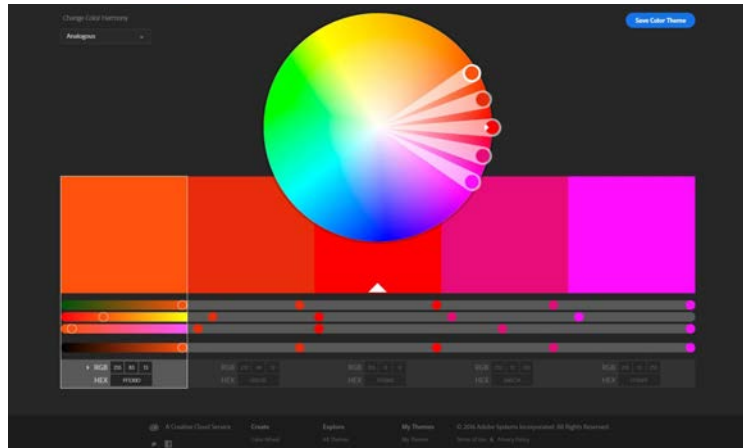
Modern menu cards

Address labels

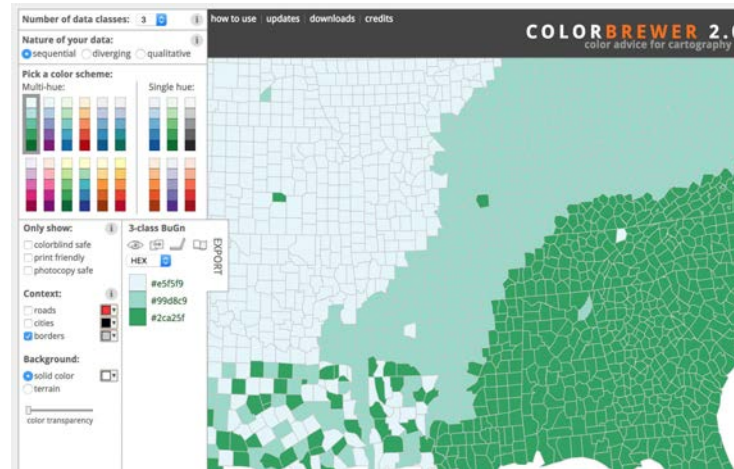
Lesson planner

microsoft publisher

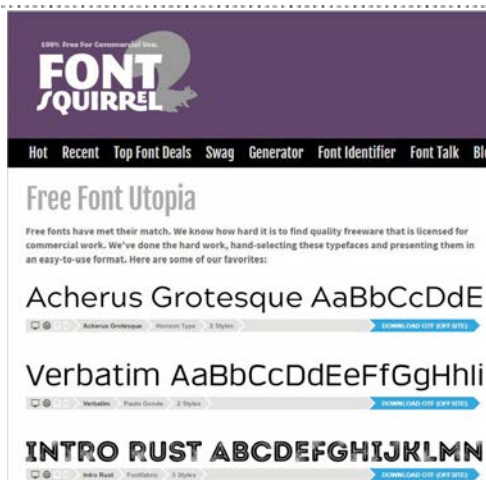
GIVE ME THE KEYS: COLOR and FONTS



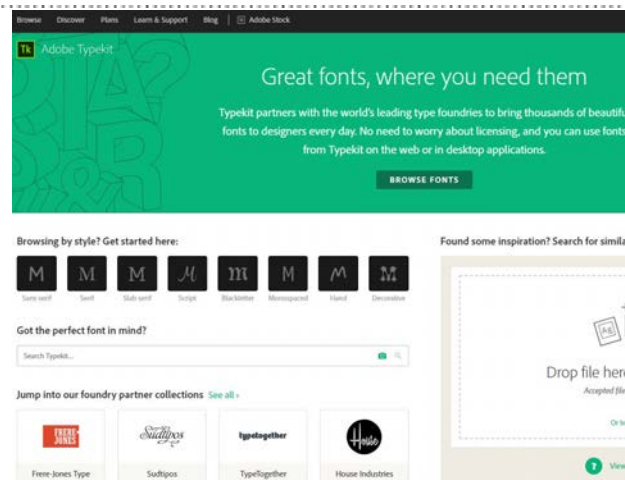
color.adobe.com



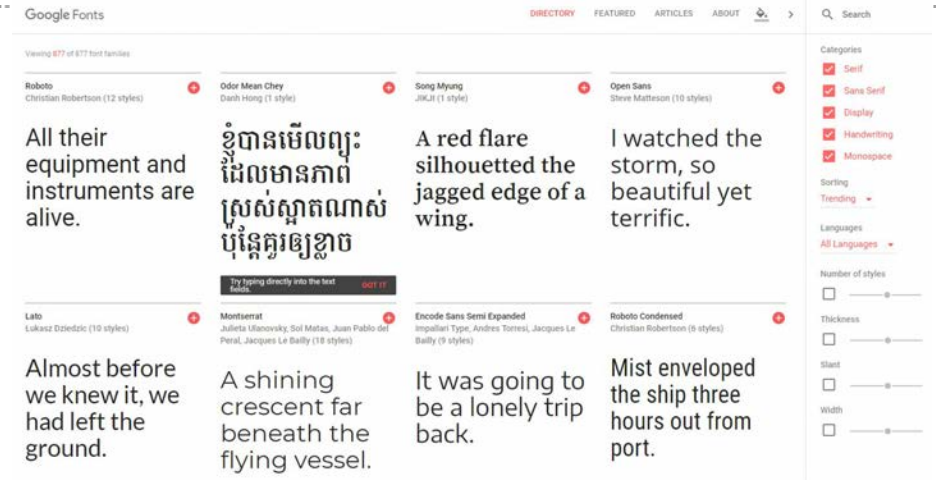
colorbrewer



font squirrel

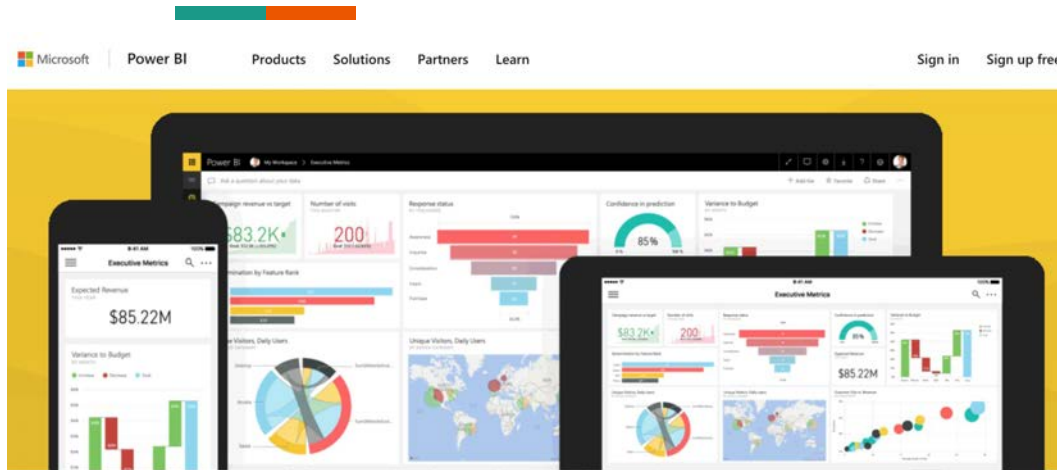


typekit

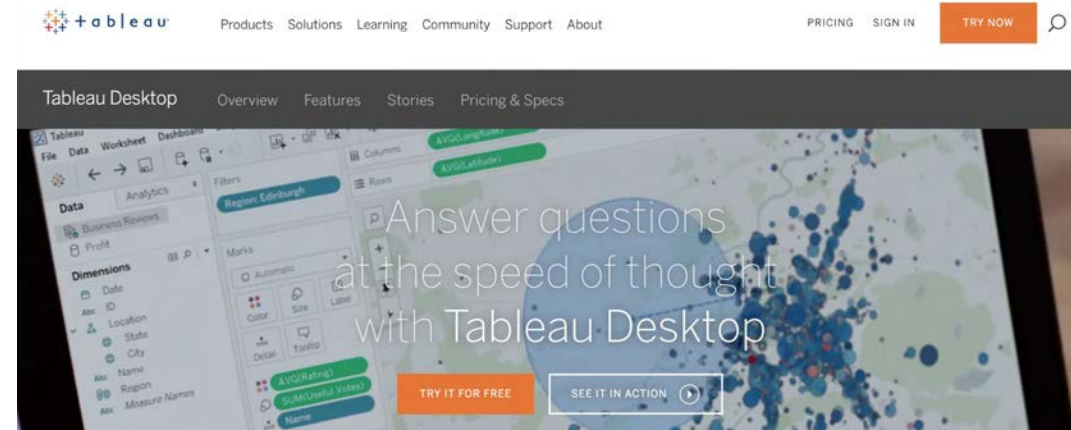


google fonts

GIVE ME THE KEYS: DATA VIZ TOOLS



Microsoft BI + Excel



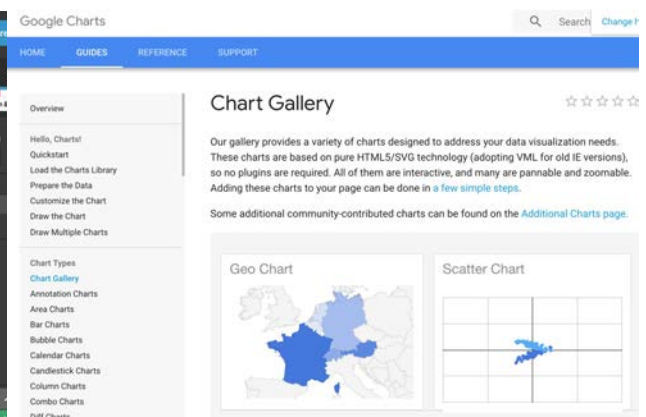
Tableau



Datawrapper

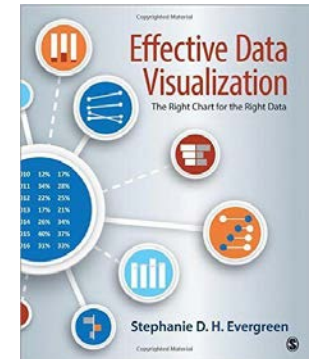
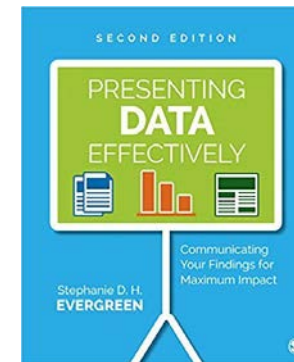
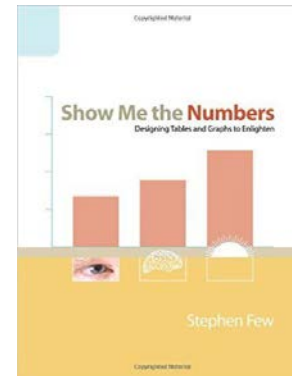
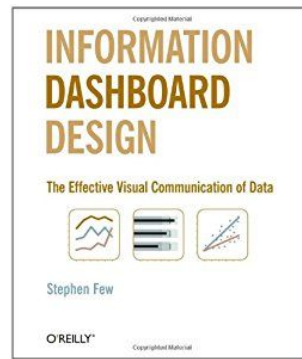
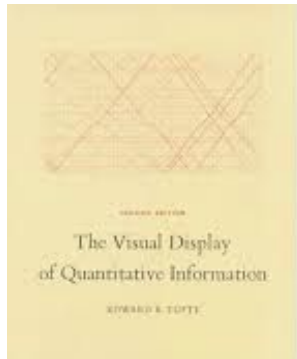


Infogram



Google Charts

OH CAPTAIN, MY CAPTAIN.



Edward Tufte - there's only one

[.tufte.com/](http://tufte.com/)

Stephen Few - the master of data viz

perceptualedge.com/

Stephanie Evergreen - the queen of presenting data

stephanieevergreen.com/



Feltron - his annual reports are in a museum, simply beautiful

feltron.com



Giorgia Lupi - data viz artist, no seriously

giorgialupi.com/

KEY TAKEAWAYS



Start with a **question**, then look for the information that will answer or give you more insight into your problem



Work with a solid information that comes from **relevant sources**



Craft a story around your **key points and takeaways** to deliver your message



Follow information **design best practices** to ensure your communication makes the greatest impact

GET IN TOUCH!

Holly Goodson Rubio



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Linkedin: <http://linkedin/hollyvann>