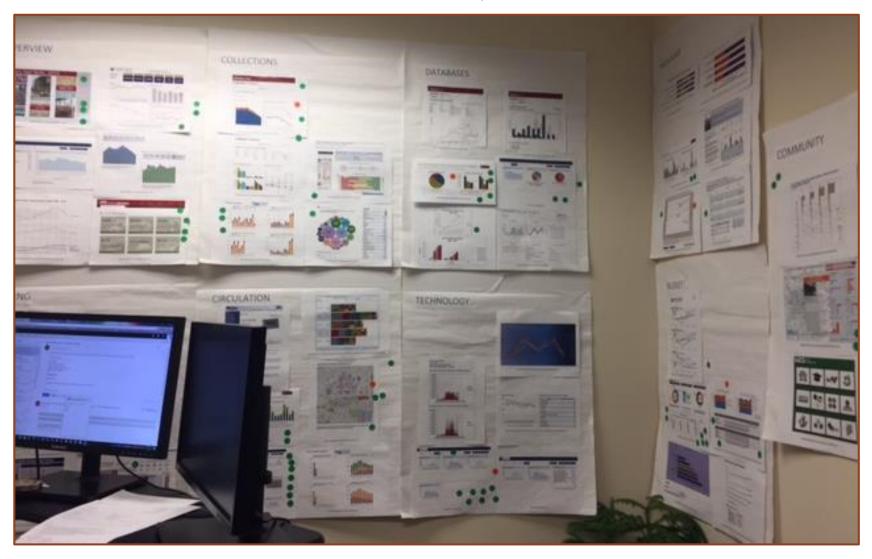
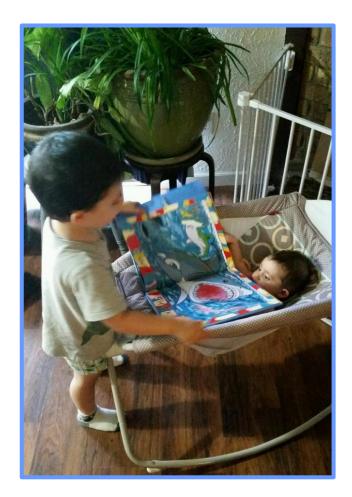
Data Dashboard Design

6 lessons learned in my first 6 months

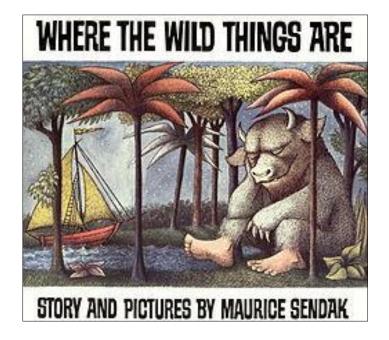


Jody Hoesly, SCLS Data Services Consultant September 2017

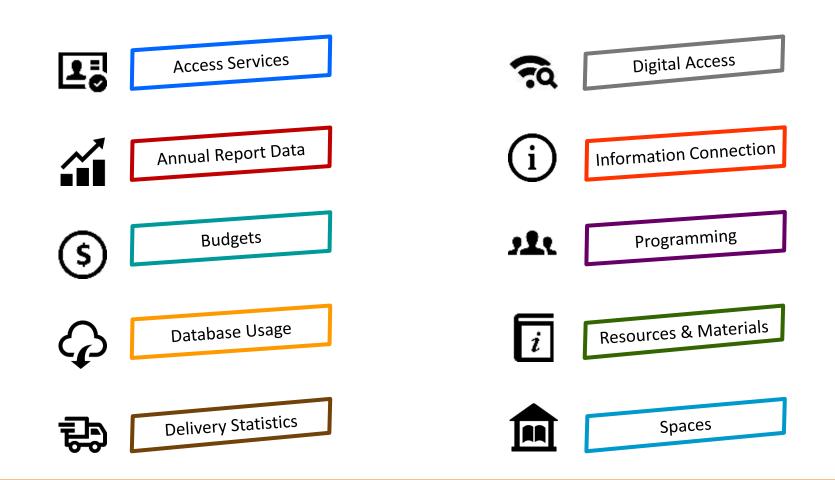
Thank-you for all you do!



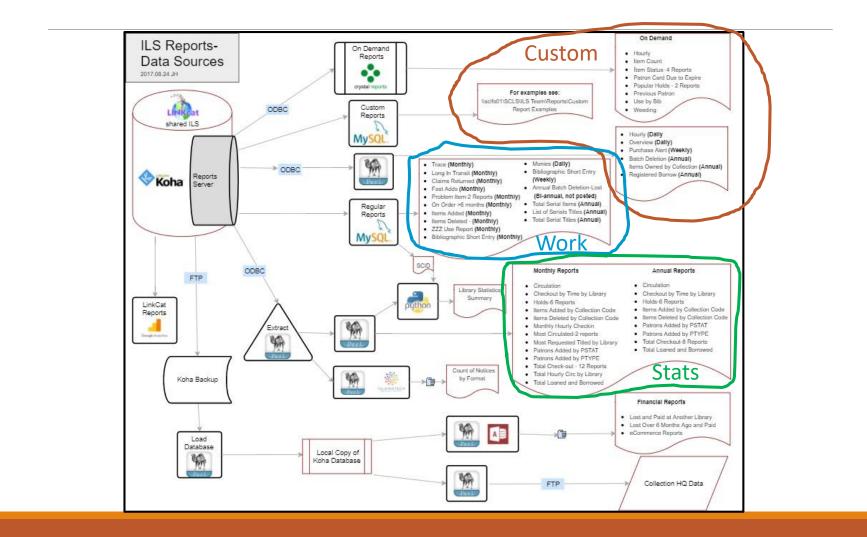
1. There is a lot of WILD data!



Library Data



ILS Data



Survey Data

Q

2.

3.

4.

Please take a few minutes for this brief survey and let us know if, as a result of participating in the Early Childhood Literacy program...

1. You learned something that you can share with your children

	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree	N/A
Yo	u feel more conf	ident to help you	ır children learn			
	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree	N/A
	u will spend mo ying)	re time interacting	g with your child	ren (e.g., rea	ding, talking, singing	, writing,
	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree	N/A
Yo	u are more awar	e of applicable re	sources and sen	vices provid	ed by the library	

Strongly Disagree Disagree	gree Neither	Agree	Strongly Agree	N/A
----------------------------	--------------	-------	----------------	-----

5. What did you like most about the program?

6. What could the library do to improve your children's enjoyment of reading?



Report Information Topic: Early Childhood Literacy Programs: See full list on page 2 Date Rance: None

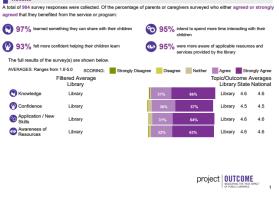
Overview

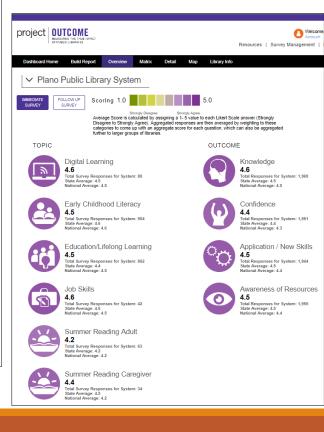
Wherever public libraries are working, possibility lives. People who work in public libraries know that library services apon new opportunities for anyone who enters – puting people on the path to library, technological know-how, or a better job. Libraries see evidence of this every day – what they are often missing is the data to support II. Measuring outcome data helps libraries demonstrate the good they are doing and the value their impacts having in the community. For example, the Project Outcome: Year merile and of positive impact on their lives in the last year, with a majority of patrons reporting that the educational aspect of these programs and services is what they like most. And these patron benefits are in high demand. Patrons most commonly suggested improvement for the library is new, more, or more frequent diases and programs.

Plano Public Library System Survey Work

Plano Public Library System staff distributed surveys to program participants to collect data and insights about how their early childhood Iteracy services and programs are supporting community needs. Plano Public Library System surveyed patrons using the Project Outcome Early Childhood Literacy Survey, which measures the impact of services designed to improve early literacy and learning skills to pragree children ages 0.5 to succeed in school. A total of 994 survey responses were collected.

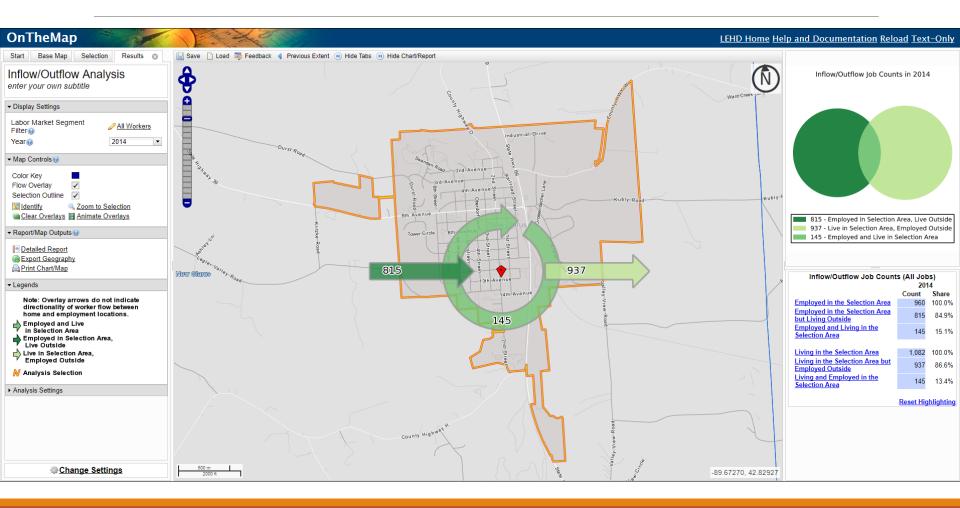
Results





www.projectoutcome.org

Demographic Data



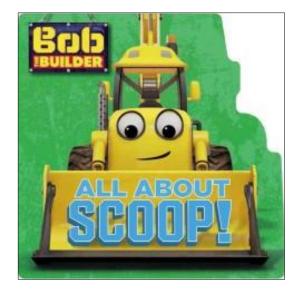
onthemap.ces.census.gov

DataSet Handout

South Central Library System South Central Library System Free DATASETS Free DATASETS Helping Libraries Serve the Public Helping Libraries Serve the Public For WI Public Libraries For WI Public Libraries American FactFinder: factfinder.census.gov Public Library Survey: Includes population, age, business and industry, education, governments, housing, income, origins and imls.gov/research-evaluation/data-collection/public-libraries-survey/explore-pls-data language, poverty, race and Hispanic origin, and veteran data. Annual survey results since 1988 on the state of public libraries in the United States. Census Bureau TIGER/Line Shapefiles: census.gov/cgi-bin/geo/shapefiles/index.php USDA National Agricultural Statics Service (Wisconsin): nass.usda.gov/Statistics_by_State/Wisconsin Shapefiles for U.S. census tracts, voting wards, county subdivisions, school districts, and more. Agricultural statistics that includes a Quick Stats searchable database that can be limited by geographic areas. Census Bureau Data Tools and Apps: census.gov/data/data-tools.html. WI Department of Administration (DOA) Demographic Services Center: A list of powerful analysis tools such as OnTheMap, QWI Explorer, and Census Geocoder. doa.state.wi.us/Divisions/Intergovernmental-Relations/Demographic-Services-Center Population estimates and projections for all Wisconsin towns, villages and cities. County Health Rankings: countyhealthrankings.org/app/wisconsin/2017/downloads Vital health factor and outcome measures. WI Department of Health Services Data & Statistics: dhs.wisconsin.gov/stats/index.htm Vital WI health statistics by topic. FoodShare Wisconsin Data: <u>dhs.wisconsin.gov/foodshare/rsdata.htm</u> Monthly case counts, recipients, and benefits by county and state. WI Food Security Project: foodsecurity.wisc.edu Data and charts about the food security infrastructure in Wisconsin. GetFacts: getfacts.wisc.edu Census and American Community Survey (ACS) data by state, county, or county subdivision. WI Geospacial Data: sco.wisc.edu/find-data.html A list of resources for downloading commonly-requested WI geospatial datasets including boundary maps. Global Libraries Data Atlas: glatlas.org Data visualization portal for tracking performance and impact metrics of international libraries. WI Information System for Education WISEdash: wisedash.dpi.wi.gov/Dashboard/portalHome.jsp Multi-year education data about Wisconsin schools. Home Based Private Education-Statistics: dpi.wi.gov/sms/home-based/statistics Enrollment of WI home schooled students by CESA, grade, district, and county. WI Information System for Education WISEdash data resources: dpi.wi.gov/wisedash/help/data-resources Data sources about students, schools (staff, programs, finance), performance reports, and types of schools. Homeless Student Enrollment by Public School District: dpi.wi.gov/homeless/data Enrollment of homeless students by WI school district. WI Public Library Service Data: dpi.wi.gov/pld/data-reports/service-data Annual public library statistics at the state, county, system, and library levels. Impact Survey results: impactsurvey.org Library patron technology survey results. WI School District Performance Report (SDPR): apps2.dpi.wi.gov/sdpr/spr.action Annual school report with multiple indicators and comparisons to districts in the same athletic conferences. Kids Count Data Center: datacenter.kidscount.org/data#WI Data and trend analysis that tracks the well-being of children in the United States. WI School Nutrition Program Statistics: dpi.wi.gov/school-nutrition/program-statistics Participation in nutritional programs including Wisconsin school free/reduced eligibility data. Madison Neighborhood Indicators: madison.apl.wisc.edu/profile.php Madison demographic, housing, public safety, health, economic vitality, and transportation indicators. WI State Legislature Open GIS Data: data-ltsb.opendata.arcgis.com Open GIS datasets including WI legislative district collections and election data. Open Enrollment Data and Reports: dpi.wi.gov/open-enrollment/data Open enrollment data on pupil and aid transfer in and out of each WI school district. WI WORKnet Data Table Menu: worknet.wisconsin.gov/worknet/datablelist.aspx?menuselection=da WI economic data on employment and unemployment, wages, occupations and industries. Pew Research Center Datasets: pewinternet.org/datasets Raw data from Pew Research. Project Outcome: projectoutcome.org Outcome data from library surveys throughout the United States. 09/06.2017 https://goo.gl/55RLkS https://goo.gl/55RLkS 1 09/06.2017 2

https://goo.gl/55RLkS

2. There are powerful (& fun) tools!



Data Visualization Tools









Datawrapper

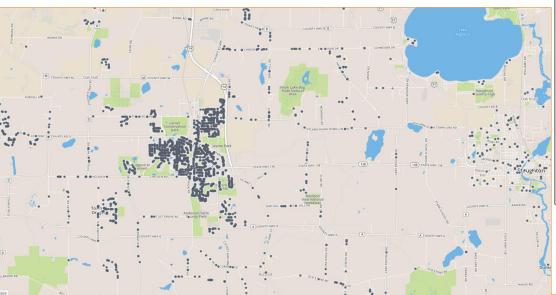


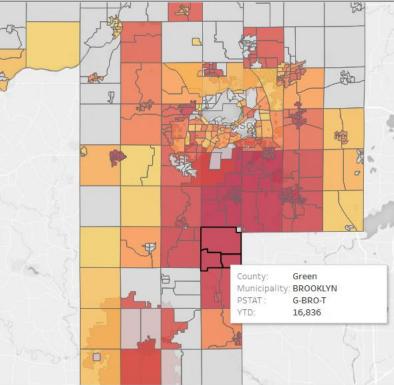
Other Tools



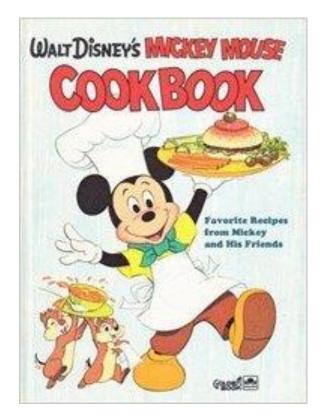


Where do patrons live who checked out books in 2016 at the Oregon Public Library?





3. There are cookbook style resources!

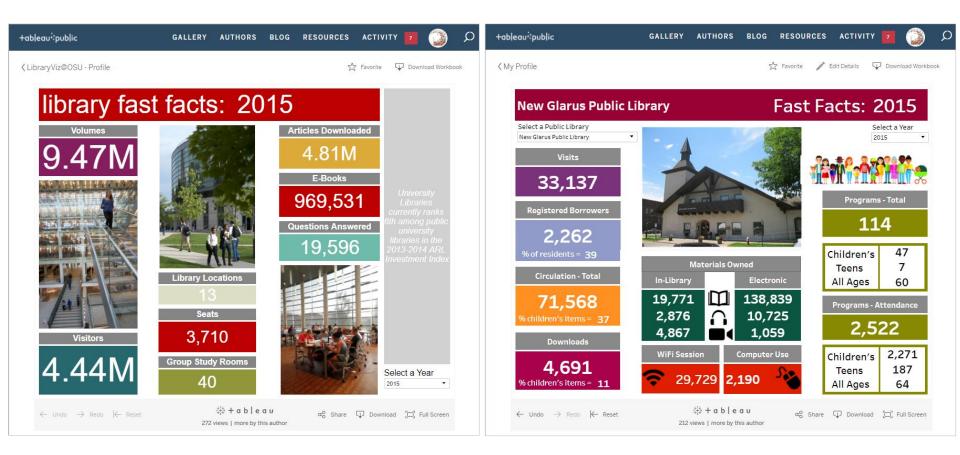


Experts

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() ,	Bethany Lyons Condon, UK Collowing	20 20 20 20 20 20 20 20 20 20 20 20 20 2	d Bath Property Analysis Jun 23, 2017		
	Filippo Mastroianni Milan, Milano, Italy	Rapport Million and a	f UK workers at risk of being rep ws Sep 7, 2017	placed by robots	
MY DATA TALIS IT AL	Pablo Gomez O London, United Kingdom	and the set of the set	rests in the National Football Le Aug 29, 2017	ague Since 2000	

https://public.tableau.com/profile/scls

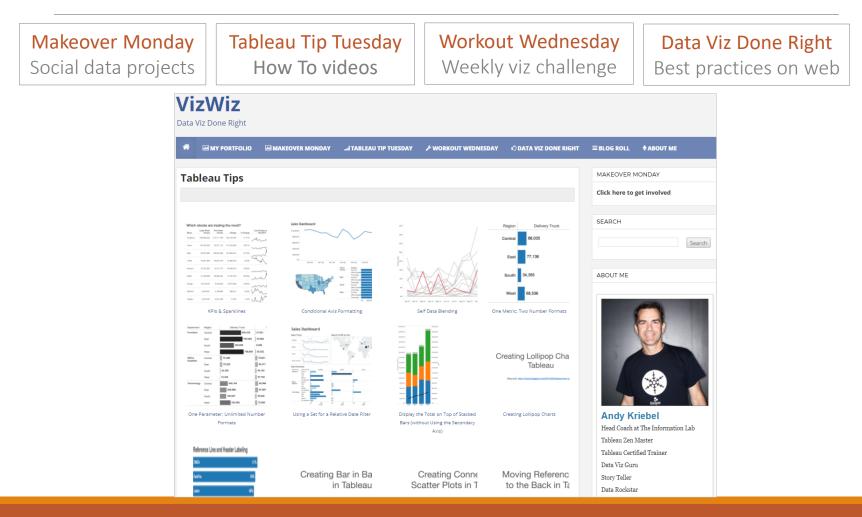
Shared (Recipes) Workbooks



https://goo.gl/Vvoz3e

https://goo.gl/4mWgZA

Blogs, Videos, & Online Help



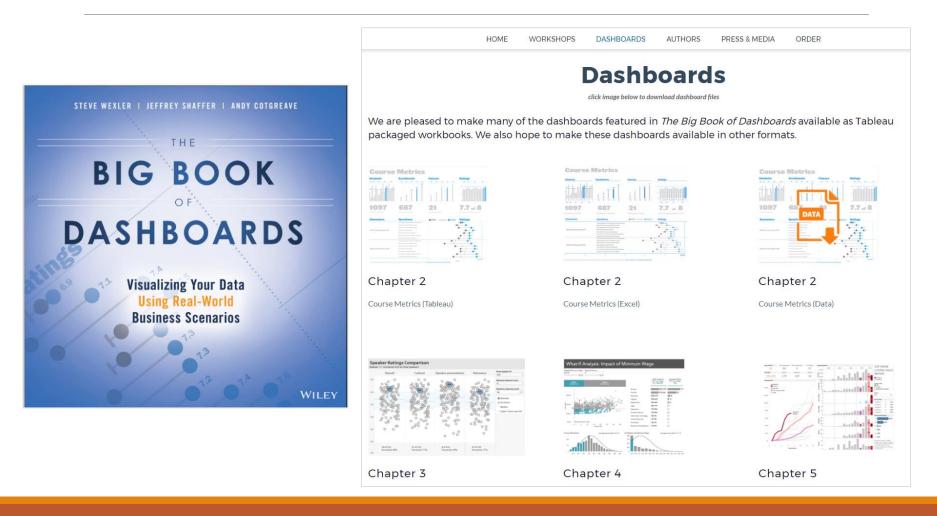
vizwiz.com

User Groups





Books



www.bigbookofdashboards.com/index.html

Tableau Resources

South Central Library System Helping Libraries Serve the Public

Tableau Dashboard Resources

Getting Started For Free

- 1. Download Tableau Public Desktop: https://public.tableau.com/en-us/s/download. Did I mention this is EREE!
- 2. Locate a Dataset. For starters, use a report in Excel, CSV, or Google Sheets. Tableau lets you combine datasets.
- 3. Create a Tableau Public Profile: https://public.tableau.com/auth/signup. This is where you will save and share your work.

Learn from the Experts

In Tableau Public you can follow authors, download (and save) their workbooks, and use them to re-engineer something similar. The South Central Library System (SCLS) Tableau Public https://public.tableau.com/profile/scls profile currently follows:

- Tableau Zen Masters <u>https://www.tableau.com/ZenMasters</u>
- Tableau Ambassadors https://www.tableau.com/tableau-ambassadors
- Tableau Public Gallery Authors https://public.tableau.com/en-us/s/gallery
- Other Library Related Profiles

Tableau Training Materials

- Tableau Training Videos: <u>https://www.tableau.com/learn/training</u>
- Tableau Public Videos: <u>https://public.tableau.com/en-us/s/resources</u>
- Online Help: http://onlinehelp.tableau.com/v10.3/pro/desktop/en-us/help.htm
- Visual Analysis Best Practices: A Guidebook https://www.tableau.com/learn/whitepapers/tableau-visual-guidebook

Tableau Conference 2016 Youtube Videos: https://youtu.be/CRFfyNkl47k

- Tableau Tips for Beginners: <u>https://youtu.be/FDCd44U7JVY</u>
- How to Excel with Tableau: <u>https://youtu.be/9R1blwedIrl</u>
- S0 tips in S0 Minutes: https://youtu.be/0hi8CO-ROSA
- Understanding Continuous Dimensions and Discrete Measures: https://youtu.be/l13laAOBeyY
- How to Map Anything in Tableau: <u>https://youtu.be/akzRkwckb0Y</u>
- Intersecting Interactivity: The official guide to Legends, Filters, Highlighters, Parameters, & Actions: https://youtu.be/HWZDA6EKQGU

YouTube Channels

- Andy Kriebel: https://www.youtube.com/channel/UCTIX7UppASrldmx5_CpG3CA
- The Information Lab: https://www.vputube.com/user/theinformationlab/videos

		(pesly)	

https://gob.gl/iBCTTr

South Central Library System Helping Libraries Serve the Public

Tableau Dashboard Resources

Blog Posts

- Datablick:http://www.datablick.com/
- Data Revelations: Turning Information into Insight <u>http://www.datarevelations.com</u>
- Drawing with Numbers: <u>http://drawingwithnumbers.artisart.org</u>
- VizCandy: http://www.vizcandy.ca/
- VizPainter: Tableau Tips and Tricks, Story Telling, Beautiful Data Visualizations <u>https://vizpainter.com</u>
- VizWiz Data: Viz Done Right: vizwiz.com http://www.vizwiz.com/

Books (Many more!)

- 1. Few, S. (2013). Information dashboard design: Displaying data for at-a-glance monitoring. Burlingame, CA: Analytics Press.
- 2. Knaflic, C. N. (2015). Storytelling with data: A data visualization guide for business professionals. Hoboken: Wiley.
- 3. Sleeper, Ryan. (2017). Practical Tableau: 100 Tips, Tutorials, and Strategies from a Tableau Zen Master, Oreilly & Associates Inc.
- 4. Tufte, E. R. (2015). The visual display of quantitative information. Graphic Press: Cheshire, Connecticut.
- 5. Wexler, S., Shaffer, J., & Cotgreave, A. (2017). The big book of dashboards: Visualizing your data using real-world business scenarios.
- 6. Wong, D. M. (2014). The Wall Street journal auide to information graphics. New York Ju.a.: Norton,

09/11.2017 (J.Hoesly)

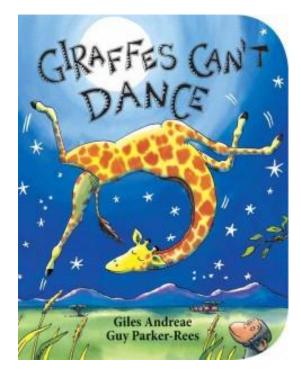
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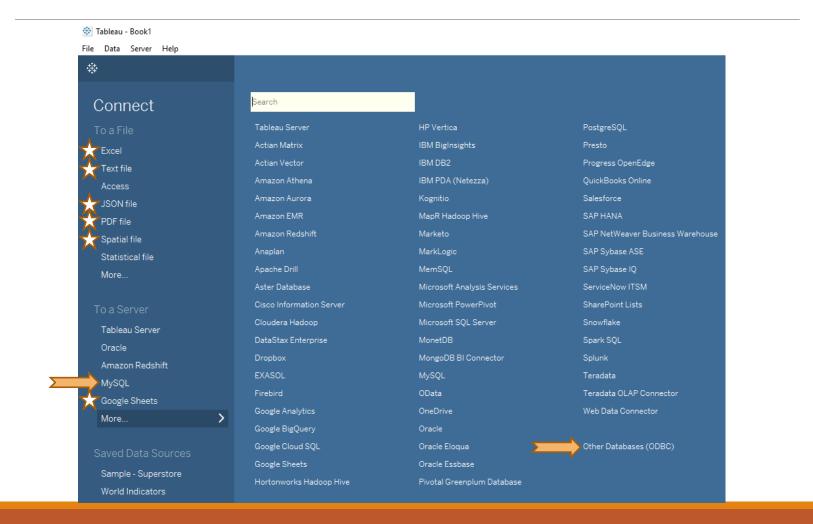
1

2

4. Smooth moves can combine data!



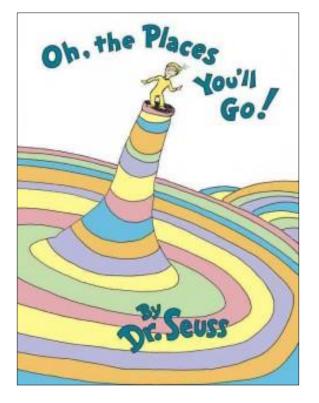
Data Connections



Joins, Unions, etc.

Tableau - 2017.09.01 Annual Library Report Po	er Capita Comparis	son 2009-2015						- 0	×
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Data Interpreter might be able to clean your Excel workbook.		Public Library	= Library						
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1000 WI PL Data		Abc	Abc	•	Abc	#	#	#	#
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5. Your mountain is waiting!



You're off to **Great Places**! **Today** is your day! Your mountain is waiting, **So**... get on your way!"

Story Questions



Access Services

Who is borrowing materials from the library?

What is being borrowed/used?

Where do our patrons who borrow materials live?

What format (ex. electronic) do our patrons prefer?

When do patrons borrow the most materials?



How much of the collection in the library is being used? (turnover rate)

Where are materials for library patrons being borrowed from and loaned to?

What type of language materials are available?

What has been recently added?

What electronic resources provide the best value?

The Visual–Data Continuum

from the Wall Street Journal Guide to Information Graphics by Dona M Wong

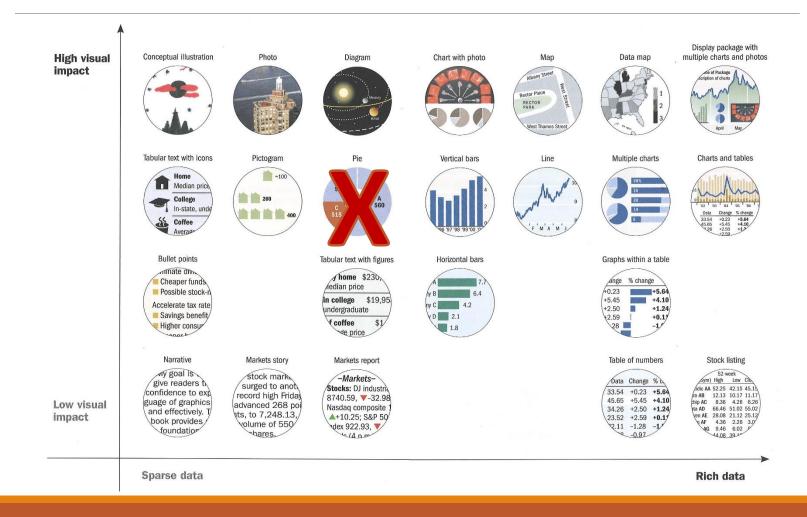
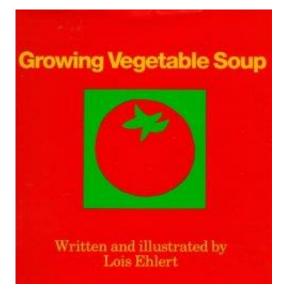


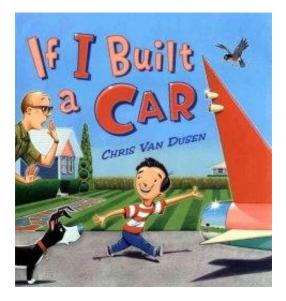
Illustration by J. Koltisko; photo composition for chart with photo by M. Kolisko

Design Tips

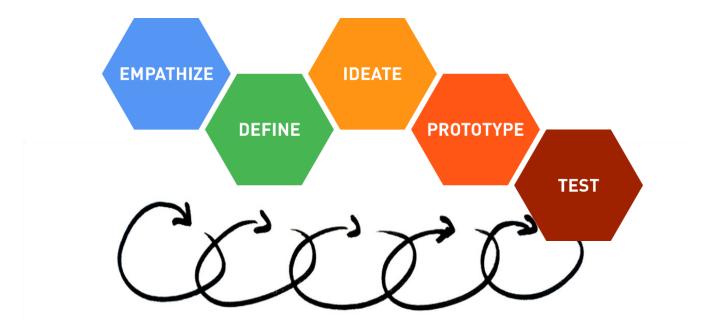
Pick the right chart Use color wisely Don't be afraid of math Visualize time Provide exploration/clarity Create a focal point Mix it up with shapes & images

6. Good DESIGN is a process!





Design Process



Design Requirements



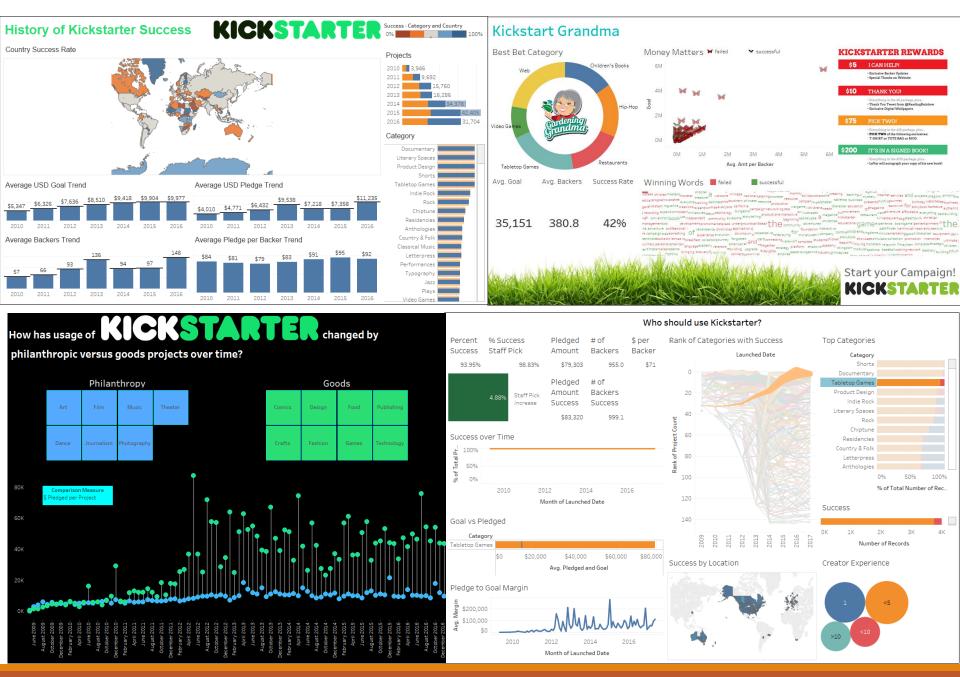
25% - Overall Appeal25% - Design Elements50% - Data Analysis/Findings

MADISON TUG TOP VIZ COMPETITION

"Our Top Viz Competition is much like Iron Viz which you may have seen at a Tableau Conference. Contestant teams are given a data set about a week in advance. The day of the competition, they need to start from scratch with that data. They have 30 minutes to build their data visualizations that they will then two minutes to present to the judges."

DATASET: From Kickstarter

www.mccormickbi.com/madisontug-2017-q2



www.mccormickbi.com/madisontug-2017-q2



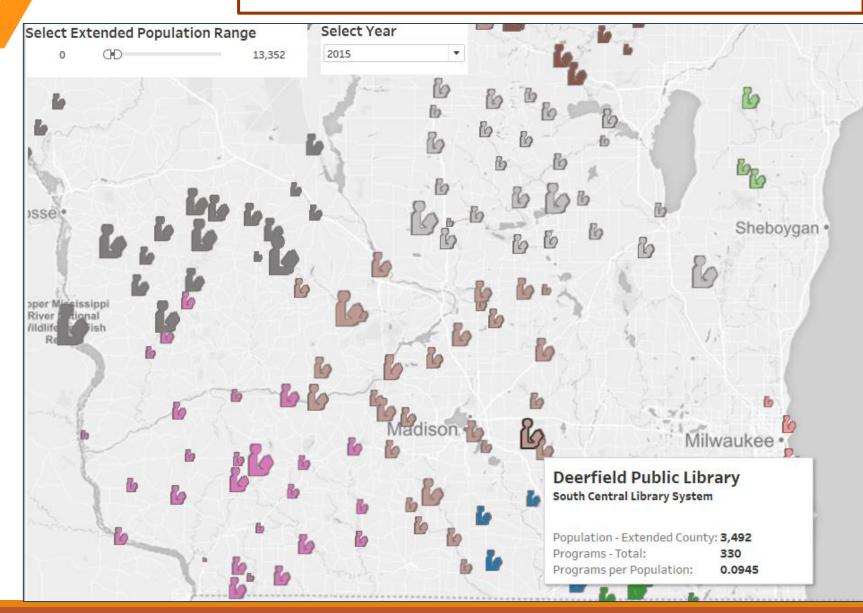
Projects

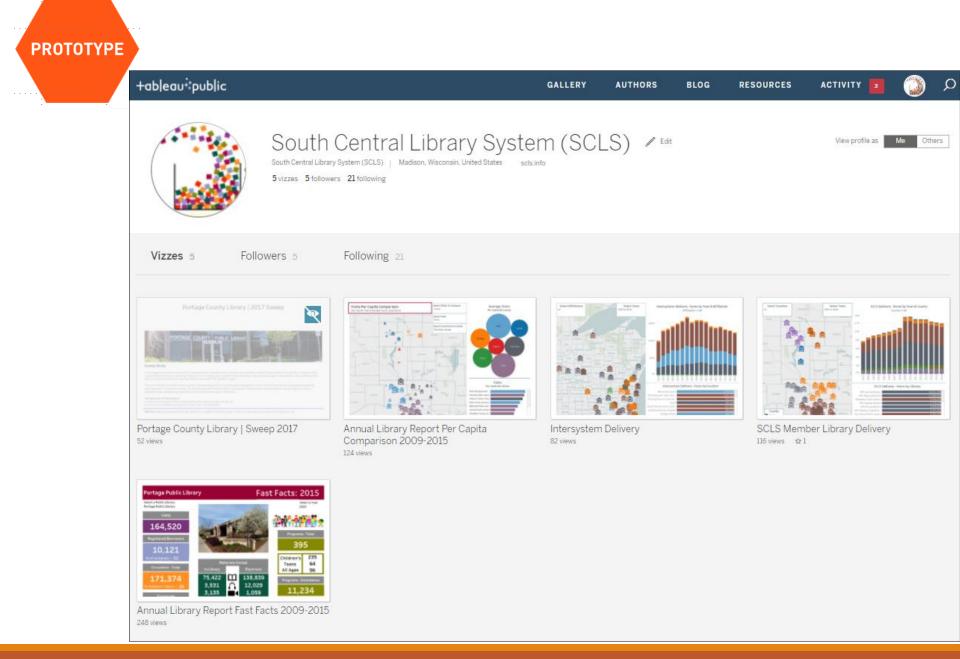
SCLS Dashboard Design Criteria

- Usable by all SCLS libraries
- Publically accessible via Tableau Public
- Easily updated when new data is available
- Leverages commercial software
- Implemented in phases
- Uses SCLS or library color schemes
- Visually appealing
- Accessible (tableau.com/about/blog/2017/2/create-accessible-vizzes-tableau-102-65614)

IDEATE

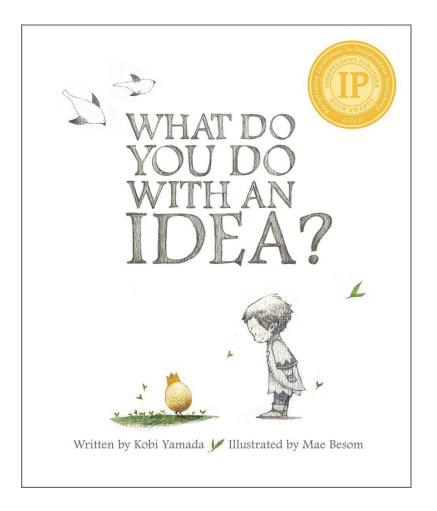
How does our programming compare?





public.tableau.com/profile/scls





Ideas, Suggestions, Comments ALWAYS WELCOMED!

Jhoesly@scls.info