




Data Storytelling Studio  
*charts & creative charts*

---

CMS.631/831  
Rahul Bhargava



# Agenda

---

- [10] crit
- [15] readings
- [30] inspirations
- [15] "Viz Zoo" activity
- [10] tools
- [10] datasets and team-forming

# Crit Prac

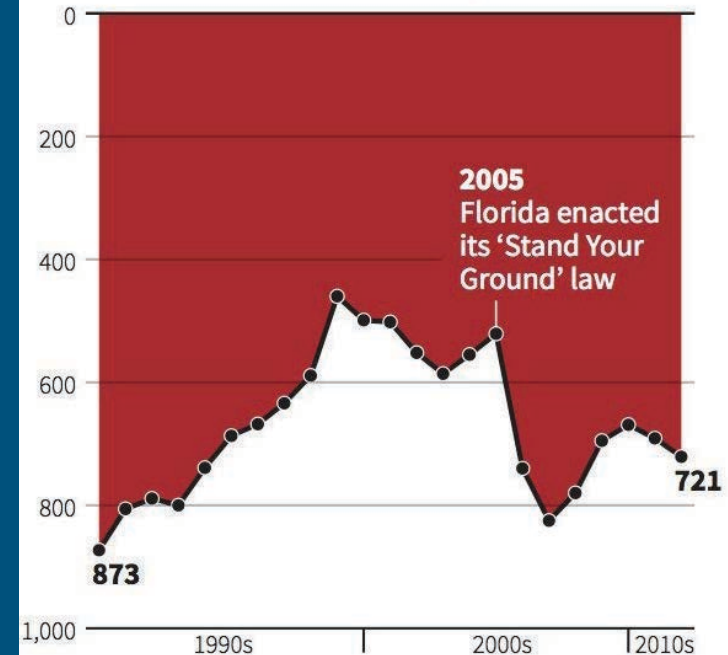
## Gun Deaths In Florida

Business Insider / Reuters

© Reuters. All rights reserved. This content is excluded from our Creative Commons license. For more information, see <http://ocw.mit.edu/help/faq-fair-use/>

## Gun deaths in Florida

Number of murders committed using firearms



Source: Florida Department of Law Enforcement

C. Chan 16/02/2014

REUTERS

# Readings

Scott McCloud. 1994. Vocabulary of Comics. In Understanding Comics: The Invisible Art. New York: William Morrow Paperbacks.

Mark Wilson. 2015. Why You Don't Make A Mindlessly Beautiful Visualization Of A Horrific Event. Co.Design (August 2015).

Nigel Holmes. 2009. why so serious, (7 minute video)

What's the difference between Holmes' approach and a today's common infographics? [example](#)

When is it ok to visualize human suffering? Can this be an empathic art?

[Example](#)

How does McCloud connect to Ware on the verbal/visual mix?

---

# Traditional Charts

---

Pictures showing quantitative comparisons.

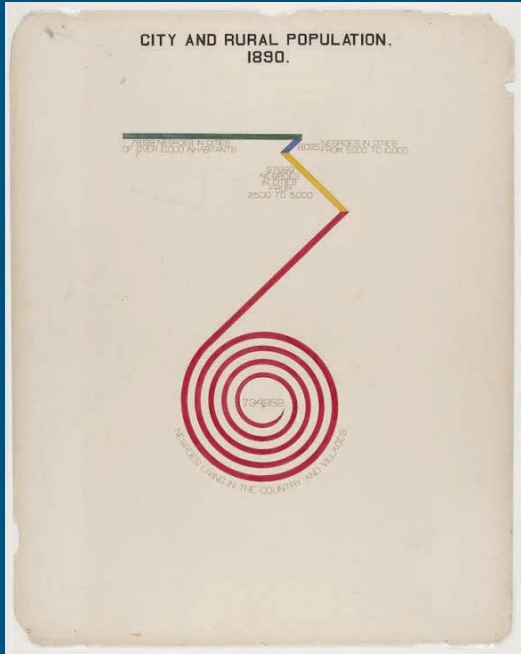
# Creative Charts

Pictures that use the visual language of traditional charts to tell a quantitative story.

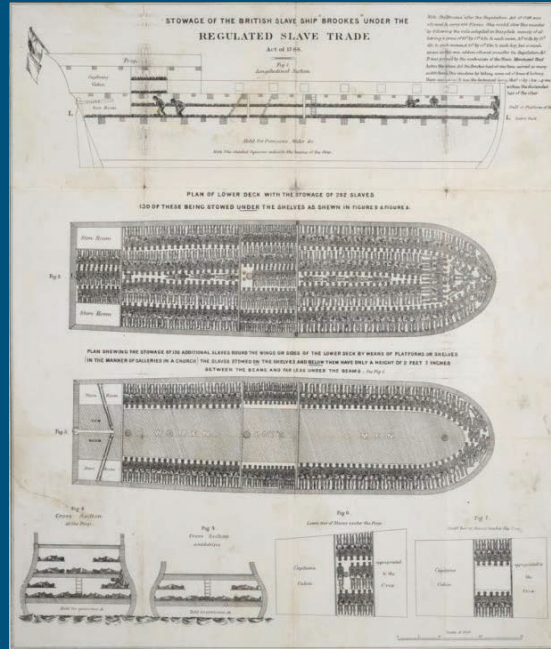
*graphs*

*infographics, explanatory-graphics*

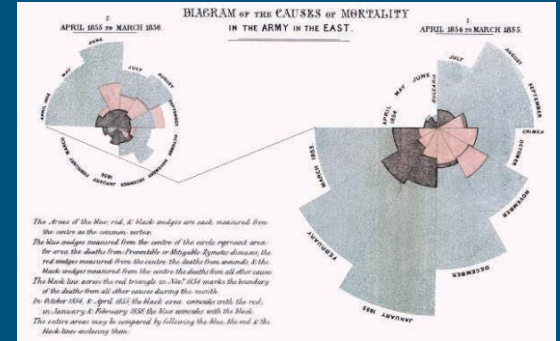
# Historical Inspirations



W. E. B. Du Bois, 1900

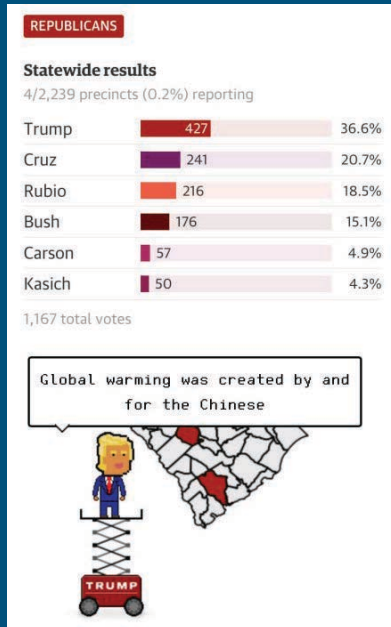


Society for Effecting the Abolition of the Slave Trade, 1788

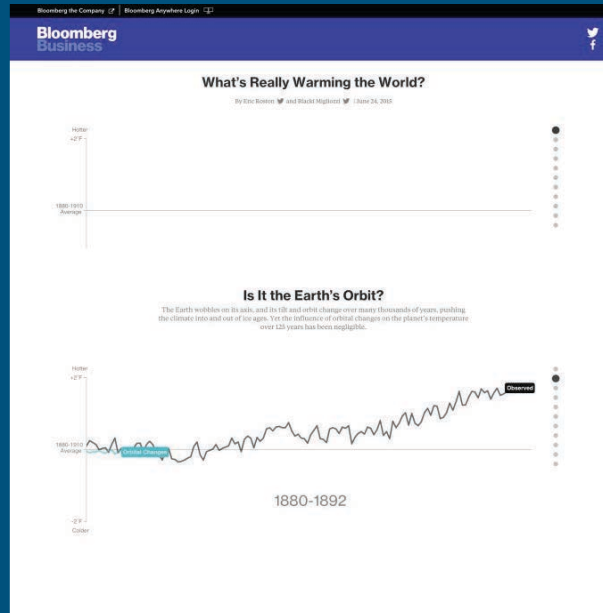


Florence Nightingale, 1856

# Inspirational Charts



*The Guardian, 2015*

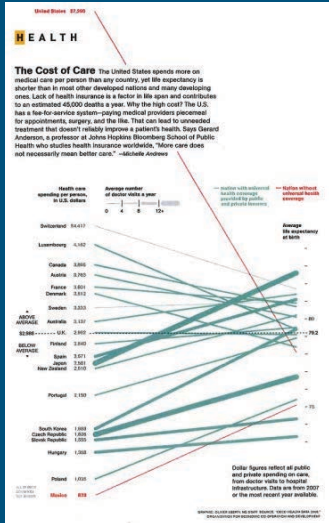


*Bloomberg Business, 2015*

Left © Guardian News and Media Ltd., right © Bloomberg L.P. All rights reserved. This content is excluded from our Creative Commons license. For more information, see <http://ocw.mit.edu/help/faq-fair-use/>

# Inspirational Creative Charts

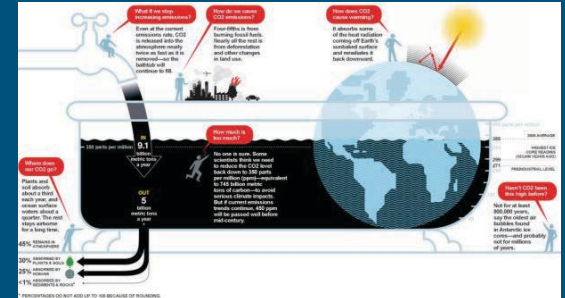
Courtesy of Visualizing Impact. License CC BY NC SA.



Oliver Uberti, *National Geographic*, 2011



Visualizing Impact



Nigel Holmes, *National Geographic*, 2009

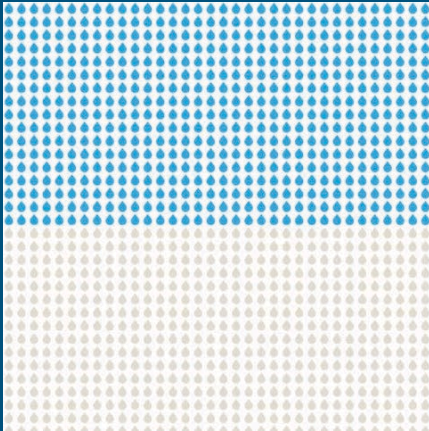


Gun Violence in America, Vox Media, 2/2016

Graphics © National Geographic and Vox Media. All rights reserved. This content is excluded from our Creative Commons license. For more information, see <http://ocw.mit.edu/help/faq-fair-use/>

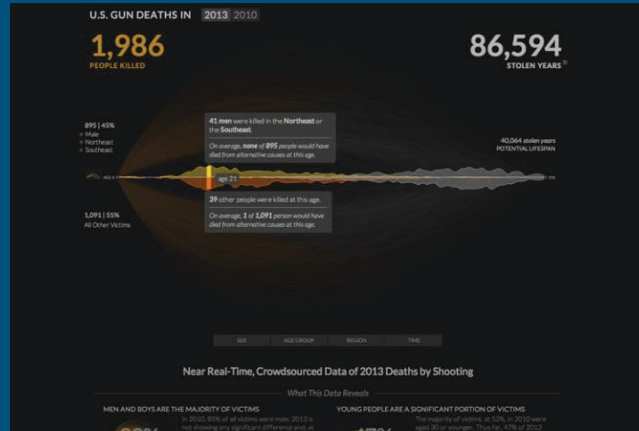


# Inspirational Interactive Graphics



[Virtual Water](#) Angela Morelli

© Angela Morelli. License CC BY NC ND 3.0.  
This content is excluded from our Creative Commons license. For more information, see <http://ocw.mit.edu/help/faq-fair-use/>

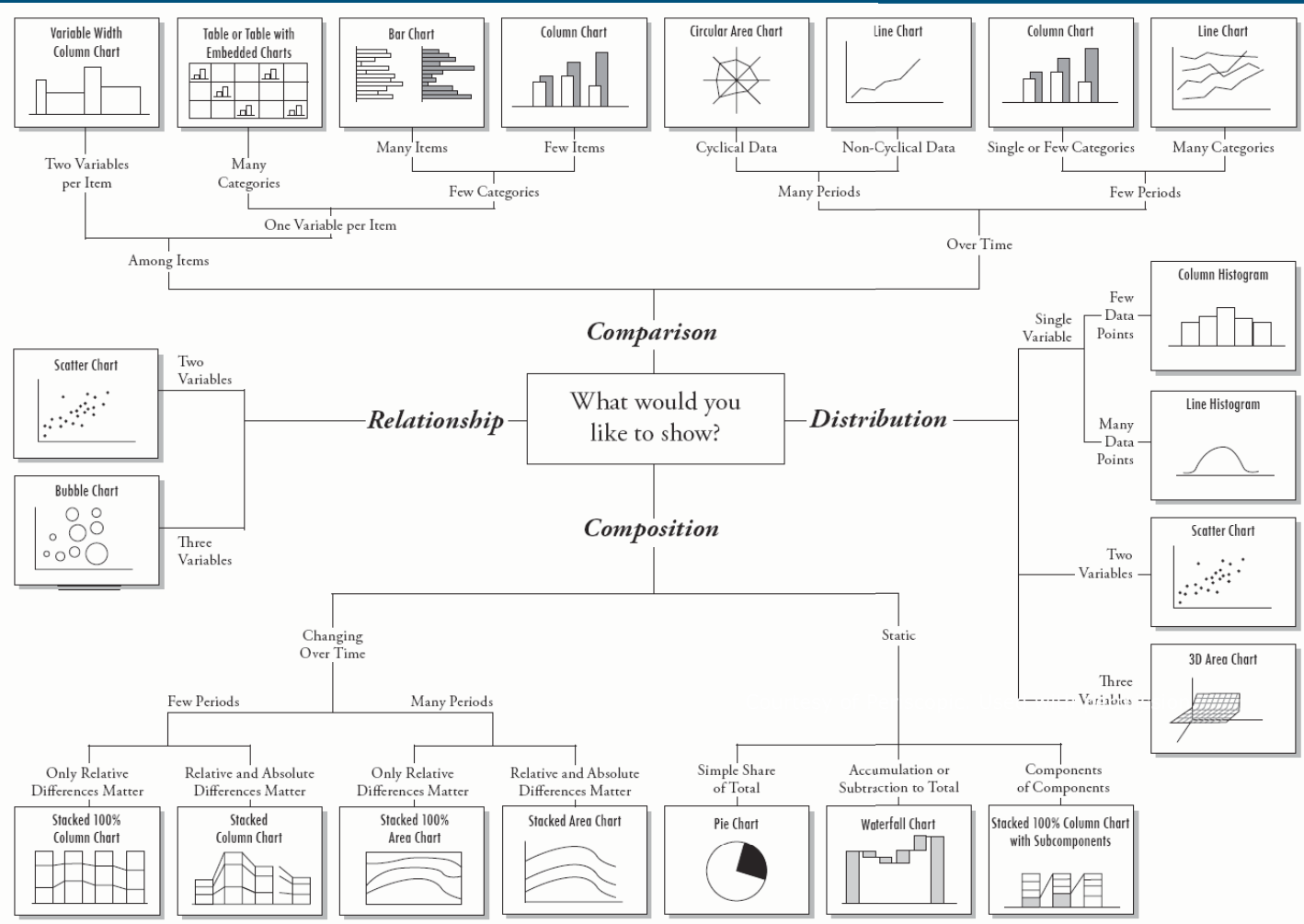


[Gun Deaths](#) Perisopic

© Perisopic. All rights reserved. This content is excluded from our Creative Commons license. For more information, see <http://ocw.mit.edu/help/faq-fair-use/>

# Choose the Right Chart

Andrew Abela



© Andrew Abela. All rights reserved. This content is excluded from our Creative Commons license. For more information, see <http://ocw.mit.edu/help/faq-fair-use/>

**Deviation**

Information dispersion is a feature of most datasets. Deviation is the standard deviation, which is the square root of the variance. It is a measure of the spread of the data.

**Example FT case**  
Trade credit ratios for various companies

**Emerging bar**  
A simple bar chart for comparing values.

**Emerging stacked bar**  
A bar chart where each bar is divided into segments representing different categories.

**Water chart**  
A chart with a wavy line representing a fluctuating variable over time.

**Scatterplot for the visual**  
A scatter plot showing the relationship between two variables.

**FT heatmap**  
A grid of colored squares representing data points across two dimensions.

**Correlation**

How the relationship between two or more variables is measured. It is a statistical measure of the degree to which two or more variables are related.

**Example FT case**  
Oil prices & US consumption

**Scatterplot**  
A plot showing the relationship between two variables.

**Line + Column**  
A chart combining a line graph and a bar chart.

**Connected scatterplot**  
A scatter plot where the data points are connected by lines.

**Matrix**  
A grid of data points or small charts arranged in rows and columns.

**FT heatmap**  
A grid of colored squares representing data points across two dimensions.

**Ranking**

How items are ranked or ordered based on a specific metric. It is a way to compare and contrast different items.

**Example FT case**  
Quality of life indicators

**Ordered bar**  
A bar chart where the bars are arranged in descending or ascending order.

**Ordered columns**  
A chart where the columns are arranged in a specific order.

**Ordered proportional circular**  
A circular chart where the segments are ordered by size.

**Dot matrix plot**  
A plot where data points are represented by dots of varying sizes.

**Line**  
A simple line graph showing a trend over time.

**Waterfall chart**  
A chart showing the cumulative effect of a series of positive and negative values.

**Distribution**

How data is spread or distributed. It is a statistical measure of the spread of the data.

**Example FT case**  
Income distribution

**Histogram**  
A chart showing the frequency of data points within specific bins.

**Barplot**  
A chart showing the frequency of data points for each category.

**Water plot**  
A chart showing a wavy line representing a fluctuating variable over time.

**Population pyramid**  
A chart showing the distribution of a population across different age groups.

**Dot matrix plot**  
A plot where data points are represented by dots of varying sizes.

**Line**  
A simple line graph showing a trend over time.

**Dot plot**  
A chart showing individual data points as dots.

**Barplot**  
A chart showing the frequency of data points for each category.

**Cumulative curve**  
A chart showing the cumulative total of a series of values.

**Change over Time**

How data changes over time. It is a statistical measure of the rate of change.

**Example FT case**  
Oil prices

**Line**  
A simple line graph showing a trend over time.

**Column**  
A chart showing the frequency of data points for each category.

**Line + Column**  
A chart combining a line graph and a bar chart.

**Stacked grid**  
A grid of data points or small charts arranged in rows and columns.

**Line**  
A simple line graph showing a trend over time.

**Area chart**  
A chart showing the cumulative total of a series of values.

**Line chart (unfilled)**  
A line graph where the area under the line is not filled.

**Connected scatterplot**  
A scatter plot where the data points are connected by lines.

**Calendar heatmap**  
A grid of colored squares representing data points across two dimensions.

**Priority matrix**  
A grid of colored squares representing data points across two dimensions.

**Circle matrix**  
A grid of colored squares representing data points across two dimensions.

**Dot matrix plot**  
A plot where data points are represented by dots of varying sizes.

**Dot matrix plot**  
A plot where data points are represented by dots of varying sizes.

**Part-to-whole**

How a part relates to the whole. It is a statistical measure of the proportion of the whole.

**Example FT case**  
Market share

**Stacked column**  
A column chart where the segments represent different parts of the whole.

**Proportional stacked bar**  
A bar chart where the segments represent different parts of the whole.

**Pie**  
A circular chart where the segments represent different parts of the whole.

**Donut**  
A circular chart where the segments represent different parts of the whole.

**Timeline**  
A chart showing the progression of time.

**Matrix**  
A grid of data points or small charts arranged in rows and columns.

**Sunburst**  
A chart showing the hierarchy of data points.

**Arc**  
A chart showing the proportion of a whole.

**Gridplot**  
A grid of data points or small charts arranged in rows and columns.

**Line**  
A simple line graph showing a trend over time.

**Waterfall**  
A chart showing the cumulative effect of a series of positive and negative values.

**Magnitude**

How large or small something is. It is a statistical measure of the size of the data.

**Example FT case**  
Company performance

**Column**  
A chart showing the frequency of data points for each category.

**Bar**  
A chart showing the frequency of data points for each category.

**Panel columns**  
A grid of data points or small charts arranged in rows and columns.

**Panel bar**  
A grid of data points or small charts arranged in rows and columns.

**Proportional stacked bar**  
A bar chart where the segments represent different parts of the whole.

**Proportional circular**  
A circular chart where the segments represent different parts of the whole.

**Waterfall chart**  
A chart showing the cumulative effect of a series of positive and negative values.

**Line chart**  
A line graph showing a trend over time.

**Waterfall chart**  
A chart showing the cumulative effect of a series of positive and negative values.

**Waterfall chart**  
A chart showing the cumulative effect of a series of positive and negative values.

**Waterfall chart**  
A chart showing the cumulative effect of a series of positive and negative values.

**Waterfall chart**  
A chart showing the cumulative effect of a series of positive and negative values.

**Waterfall chart**  
A chart showing the cumulative effect of a series of positive and negative values.

**Spatial**

How data is distributed in space. It is a statistical measure of the location of the data.

**Example FT case**  
Market share

**Stacked column**  
A column chart where the segments represent different parts of the whole.

**Bar**  
A chart showing the frequency of data points for each category.

**Panel columns**  
A grid of data points or small charts arranged in rows and columns.

**Panel bar**  
A grid of data points or small charts arranged in rows and columns.

**Proportional stacked bar**  
A bar chart where the segments represent different parts of the whole.

**Proportional circular**  
A circular chart where the segments represent different parts of the whole.

**Waterfall chart**  
A chart showing the cumulative effect of a series of positive and negative values.

**Line chart**  
A line graph showing a trend over time.

**Waterfall chart**  
A chart showing the cumulative effect of a series of positive and negative values.

**Waterfall chart**  
A chart showing the cumulative effect of a series of positive and negative values.

**Waterfall chart**  
A chart showing the cumulative effect of a series of positive and negative values.

**Waterfall chart**  
A chart showing the cumulative effect of a series of positive and negative values.

**Waterfall chart**  
A chart showing the cumulative effect of a series of positive and negative values.

**Waterfall chart**  
A chart showing the cumulative effect of a series of positive and negative values.

**Waterfall chart**  
A chart showing the cumulative effect of a series of positive and negative values.

**Flow**

How data moves or changes over time. It is a statistical measure of the rate of change.

**Example FT case**  
Company performance

**Stacked column**  
A column chart where the segments represent different parts of the whole.

**Bar**  
A chart showing the frequency of data points for each category.

**Panel columns**  
A grid of data points or small charts arranged in rows and columns.

**Panel bar**  
A grid of data points or small charts arranged in rows and columns.

**Proportional stacked bar**  
A bar chart where the segments represent different parts of the whole.

**Proportional circular**  
A circular chart where the segments represent different parts of the whole.

**Waterfall chart**  
A chart showing the cumulative effect of a series of positive and negative values.

**Line chart**  
A line graph showing a trend over time.

**Waterfall chart**  
A chart showing the cumulative effect of a series of positive and negative values.

**Waterfall chart**  
A chart showing the cumulative effect of a series of positive and negative values.

**Waterfall chart**  
A chart showing the cumulative effect of a series of positive and negative values.

**Waterfall chart**  
A chart showing the cumulative effect of a series of positive and negative values.

**Waterfall chart**  
A chart showing the cumulative effect of a series of positive and negative values.

**Waterfall chart**  
A chart showing the cumulative effect of a series of positive and negative values.

**Waterfall chart**  
A chart showing the cumulative effect of a series of positive and negative values.

Visual vocabulary

Designing with data

There are so many ways to visualise data - how do we know which one to pick? Use the categories across the top to decide which data relationship is most important in your story. Then look at the different types of chart within the category to form some initial ideas about what might work best. This list is not meant to be exhaustive, nor a wizard, but is a useful starting point for making informative and meaningful data visualisations.

© Financial Times. All rights reserved. This content is excluded from our Creative Commons license. For more information, see <http://ocw.mit.edu/help/faq-fair-use/>

ft.com/vocabulary



# "Viz Zoo" Activity

- form a team of 3
- pick a chart type
- read about it on [datavizcatalogue.com](http://datavizcatalogue.com)
- scan <http://bit.ly/vizzoo>
- prepare a 1-minute summary on what the chart is and why/when we should use it
- you have 6 minutes

*easy to learn*

Comic Life  
Super Lame

RAWGraphs

infogr.am

Excel

Tableau

*does lots of things*

JMP

Minitab

Illustrator

D3.js

processing

*does one thing*

Google Charts

skrollr

gephi

*hard to learn*

## tools for making charts

# Team Forming

What do you know?

What do you want to make?

What dataset are you interested in?

*Hubway rides, NYC trees, CO2*



MIT OpenCourseWare  
<https://ocw.mit.edu/>

CMS.631 Data Storytelling Studio: Climate Change  
Spring 2017

For information about citing these materials or our Terms of Use, visit: <https://ocw.mit.edu/terms>.