

# Data Visualization & Storytelling

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# About me

- Currently Working with LinkedIn as Insights Program Manager, Bangalore!
- Developing Design skills was the best part when I worked at Airbnb.
- Learned about been Scrapy at Mu Sigma

**How I came to care about data visualization...**

“ I was never good with drawing but I loved Colors”

“Storytelling and data visualization is Fun”

# Why Data Visualization?

- Visualizations are data stories made by transforming the data quantitatively, defining relations, patterns and creating interactive images.
- Graphical or pictorial representation of data is Data visualization.
- It enables executives, business leaders, teachers, decision-makers to see analytics presented visually, so they can grasp difficult concepts or identify new patterns.
- Using tables or raw data, certain patterns, trends, and correlations might go unnoticed, and thus recognizing these patterns is easier with data visualization.
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# Benefits of Data Visualization:

Considering the impact that data has in the growth of the business ,here are a few benefits:

- Helps to identify the latest trend to improve the product and increase the profits for business.
- Data visualizations make big and small data easier for the human brain to understand,leading to better analysis.
- Helps understanding the story-The human brain is not able to understand or even just imagine large amounts of numbers or text at once. It needs a visual representation to make sense of them and consequently translate raw data into tangible concepts.

**“Storytelling is more  
important than plotting  
complex graphs.”**

# Remove to Improve: Less is More

**Remove**  
to improve  
the **map** edition

# Agenda

## Data Visualization & Storytelling

- External resources
- Principles of Data Visualization
- How to make good charts

# External Resources for Data Visualization

## Guidelines & Sources of Inspiration

### Quick Reads

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[5 Data Storytelling Tips for Creating More Persuasive Charts and Graphs](#)

[Ten Simple Rules for Better Figures](#) ( favorite academic paper)

### Blogs

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[Stephen Few](#) (Perceptual Edge)

Darkhorse Analytics [blog](#)

Hans Rosling's 2006 [TED Talk](#) [storytelling]

### Academic Tomes

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[Edward Tufte](#) (ironically, worst website ever)



## Principles of Data Visualization

1. Decide on your **message**
2. Aesthetics matter
3. Communicate clearly

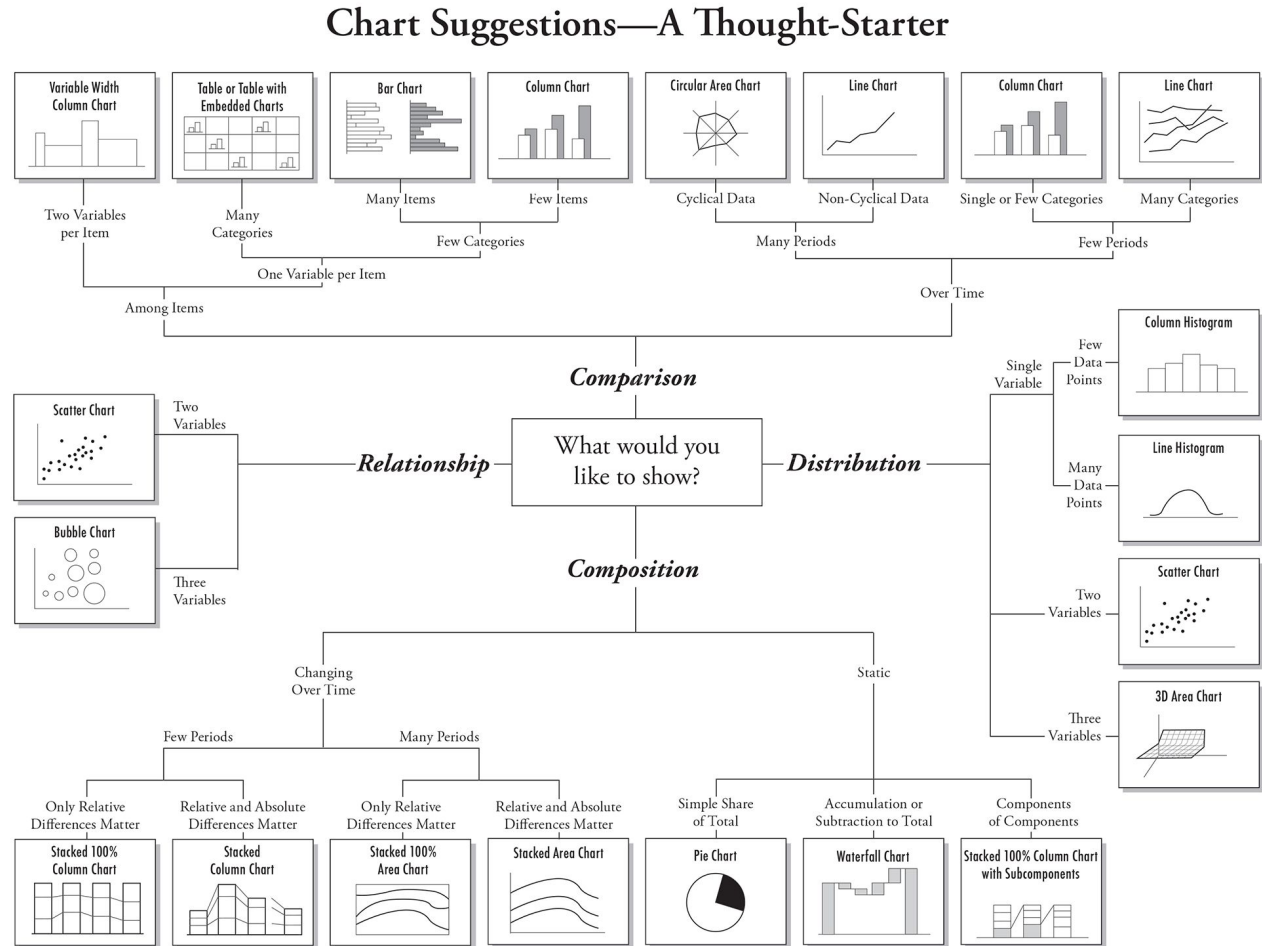
# 1. Message

Make sure your figure supports your message.






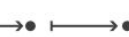








“Signal must come first, even if your aim is primarily engagement”

1. Choose the right chart/graph for you message
2. Choose the right chart elements

# Choosing the Right Chart



# Choosing the Right Chart Element (Channel)

Position on common scale	
Position on unaligned scale	
Length (1D size)	
Tilt/angle	
Area (2D size)	
Depth (3D position)	
Color luminance	
Color saturation	
Curvature	
Volume (3D size)	
Spatial region	
Color hue	
Motion	
Shape	

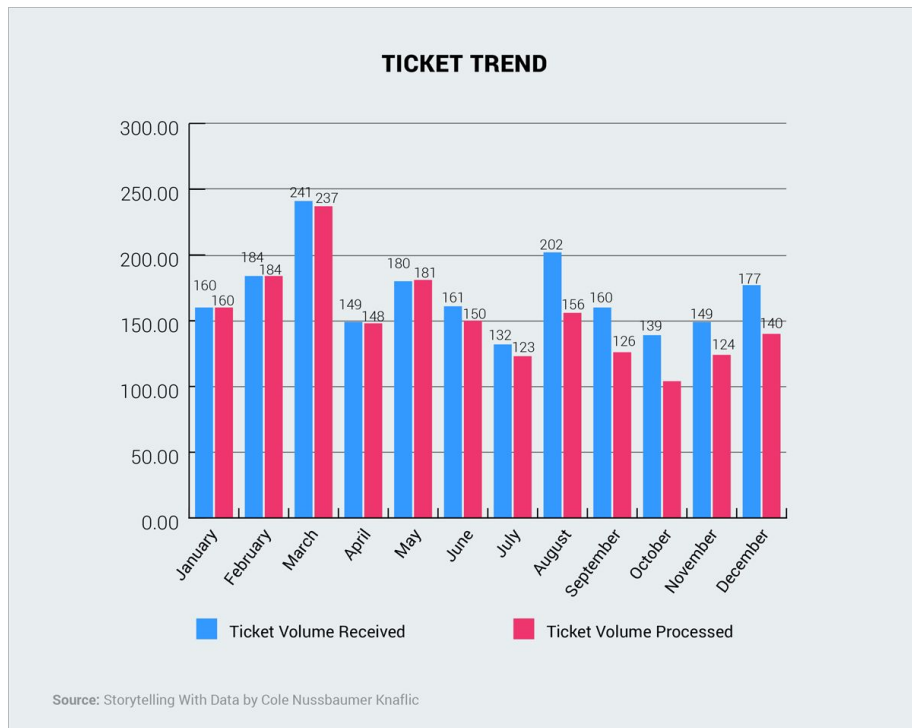
effective

Read more about [color](#)

effective

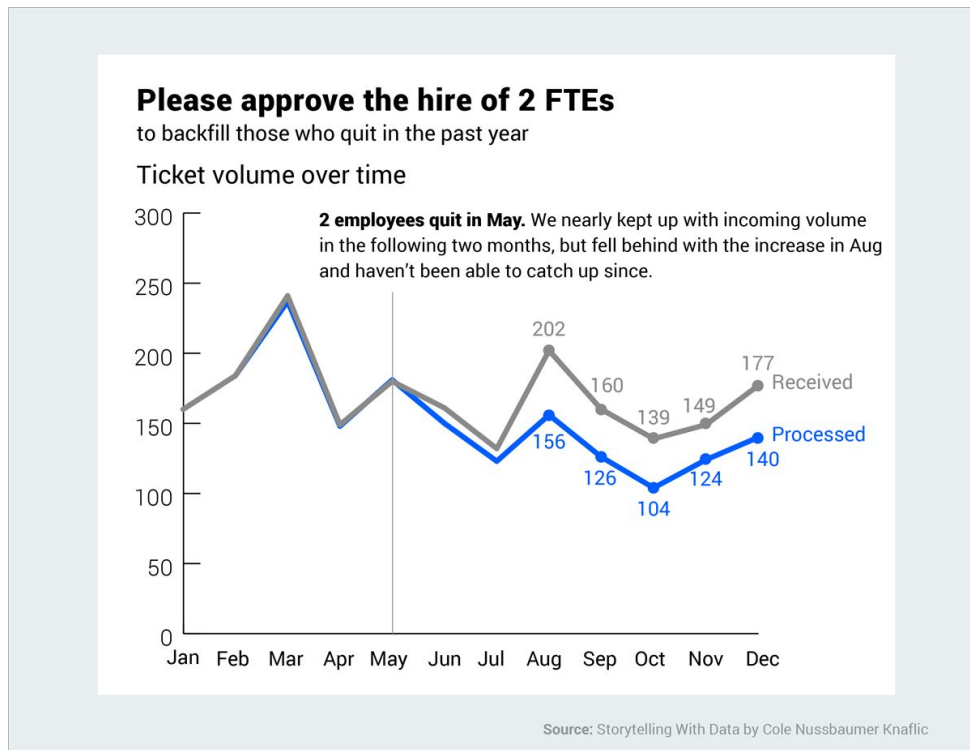
# Choosing the Right Chart to Emphasize the Message

Making the case by emphasizing difference



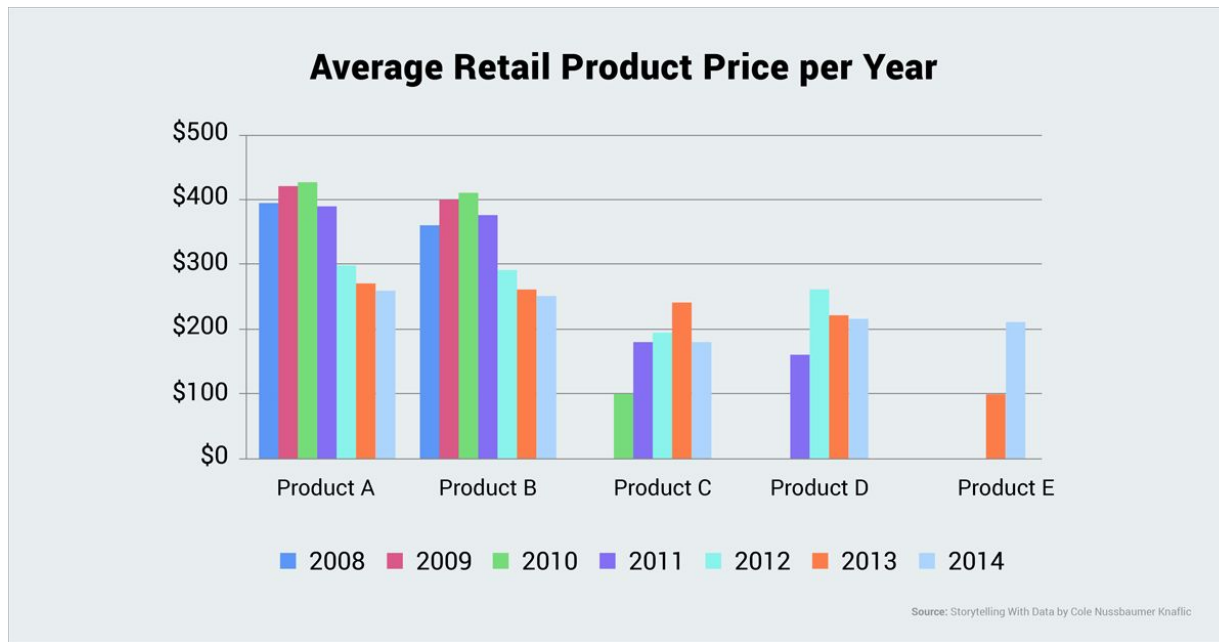
# Choosing the Right Chart to Emphasize the Message

Making the case by emphasizing difference



# Choosing the Right Chart to Emphasize the Message

Making the case by emphasizing (converging) similarity

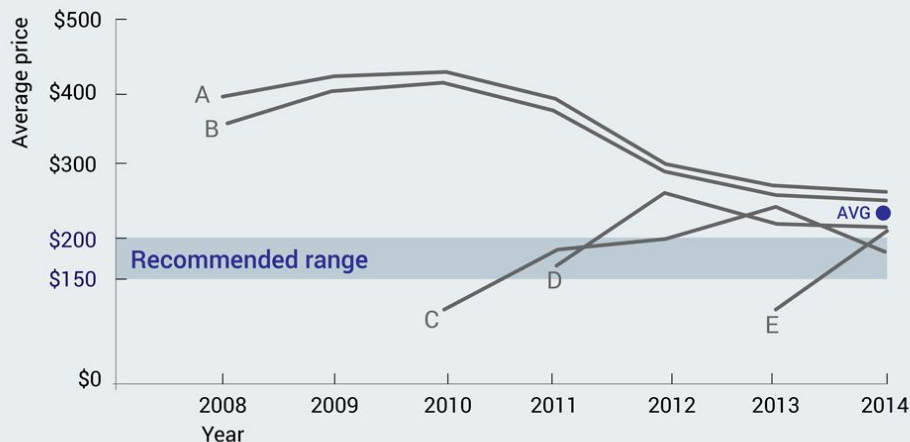


# Choosing the Right Chart to Emphasize the Message

Making the case by emphasizing (converging) similarity

To be competitive, we recommend introducing our product below the \$223 average price point in the **\$150-\$200 range**

Retail price over time by product

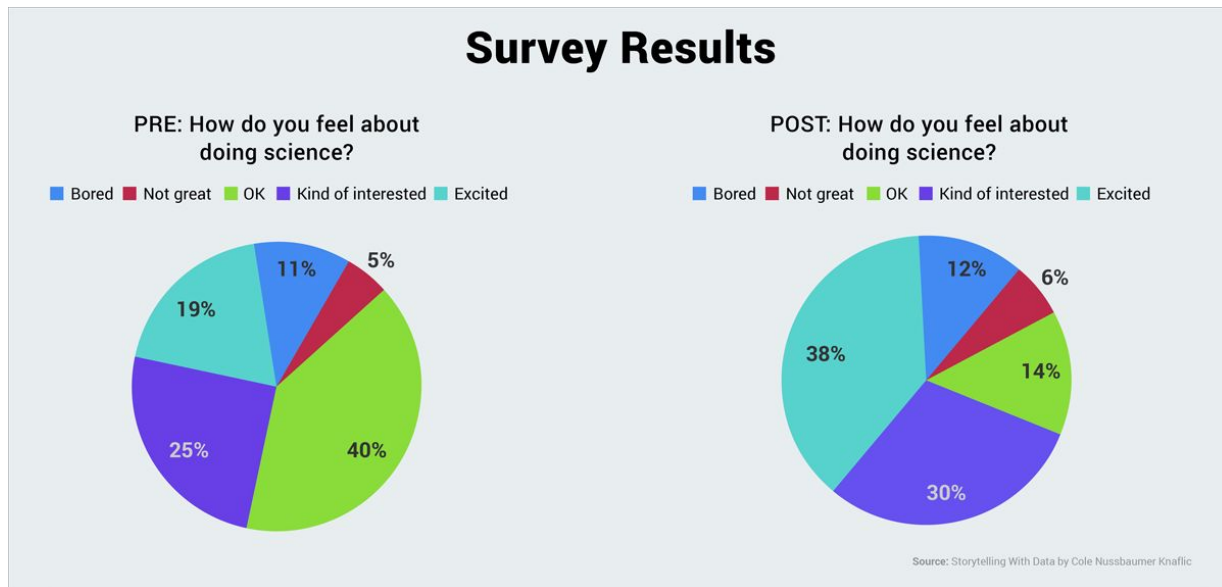


Source: Storytelling With Data by Cole Nussbaumer Knaflic



# Choosing the Right Chart to Emphasize the Message

Making the case by emphasizing grouping the differences

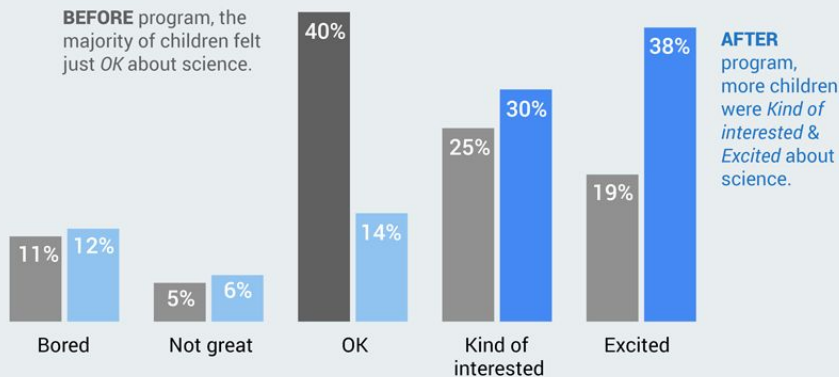


# Choosing the Right Chart to Emphasize the Message

Making the case by emphasizing grouping the differences

## Pilot program was a success

How do you feel about science?



Source: Storytelling With Data by Cole Nussbaumer Knaflic

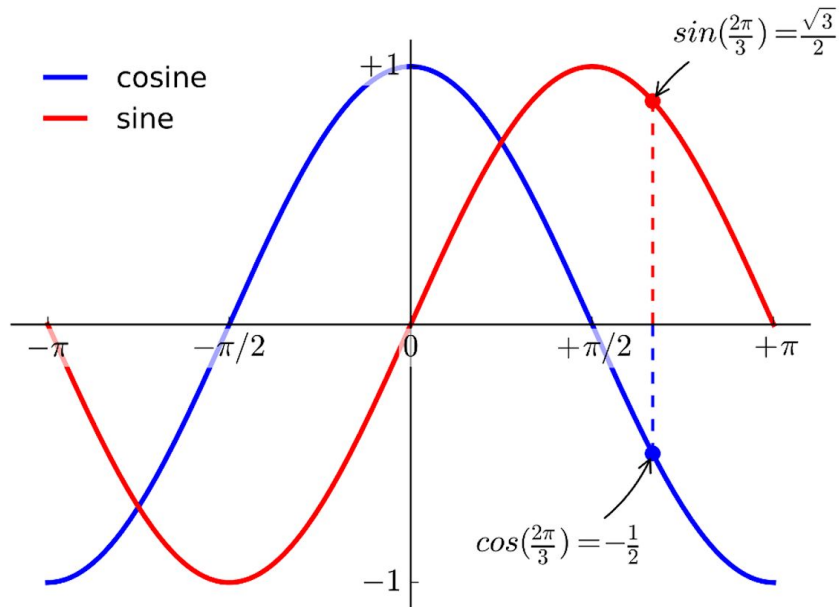
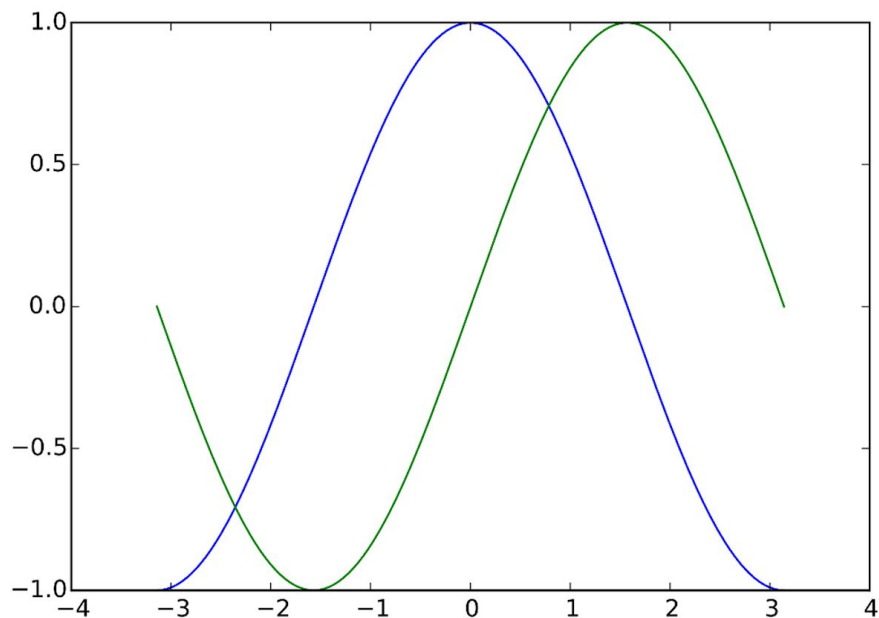
## 2. Aesthetics

It's not just about looking pretty;  
it's about being easily  
interpretable.

Don't trust the default settings

# Don't trust the default settings

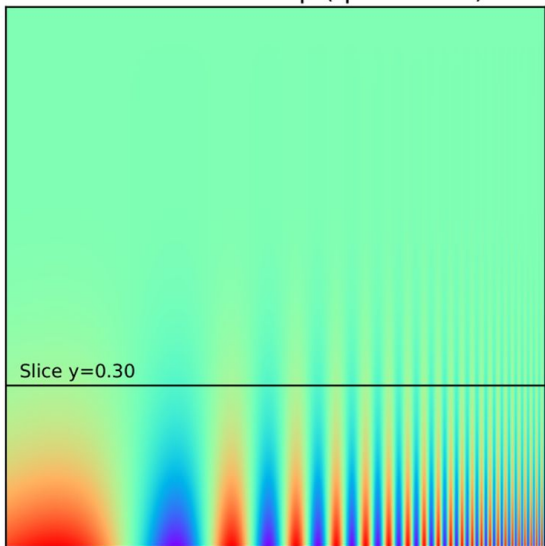
Make it as easy as possible to understand your figure



# Don't trust the default settings

Be mindful of how you use color!

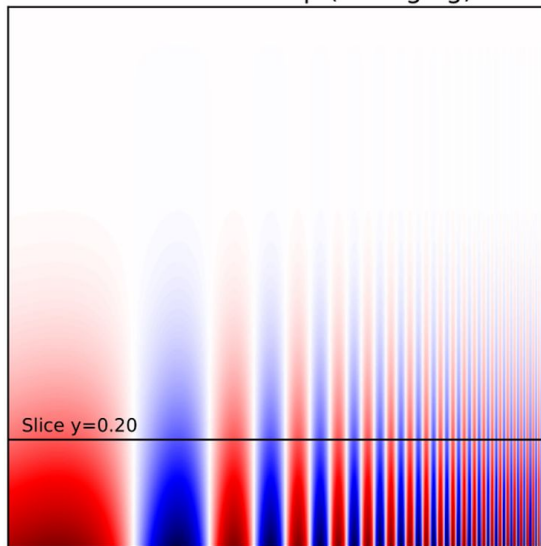
Rainbow colormap (qualitative)



Slice detail



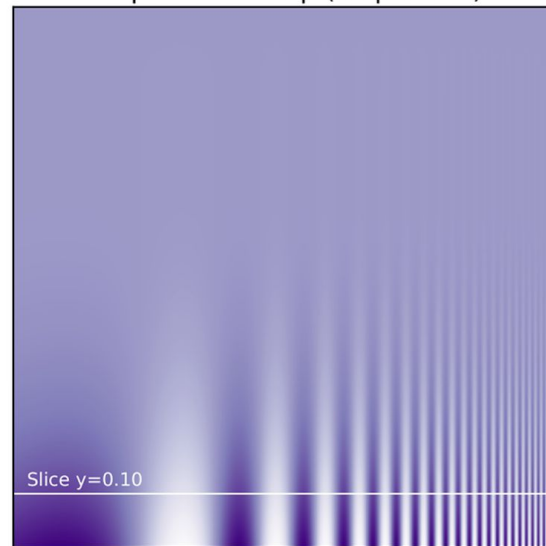
Seismic colormap (diverging)



Slice detail



Purples colormap (sequential)

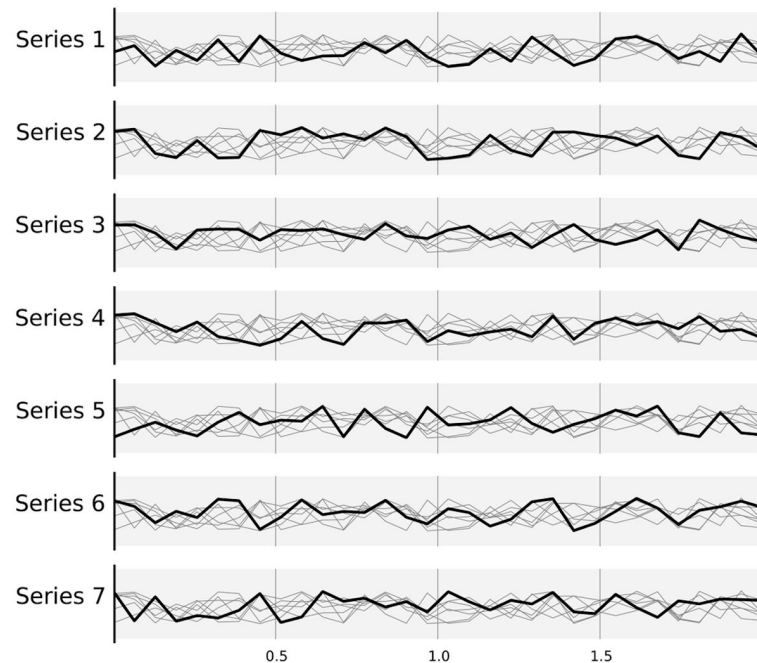
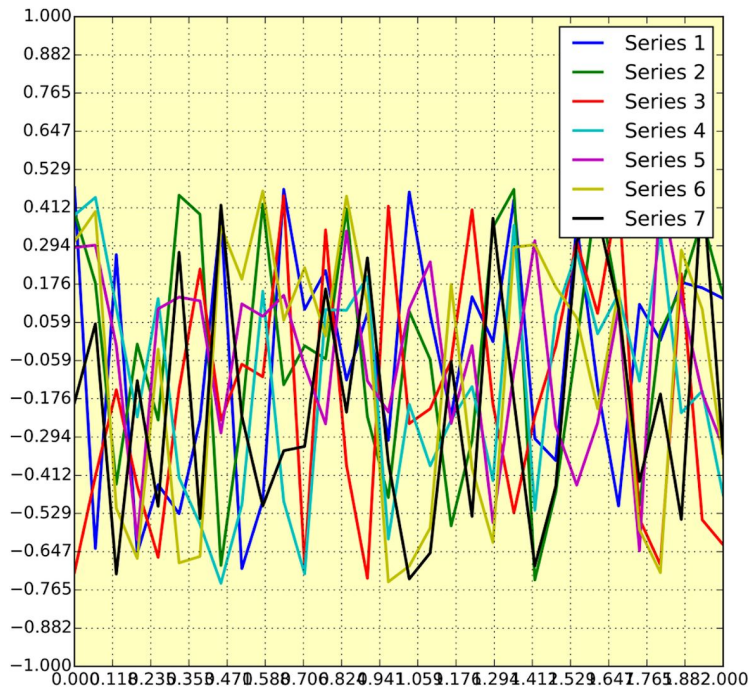


Slice detail



# Don't trust the default settings

Avoid chartjunk



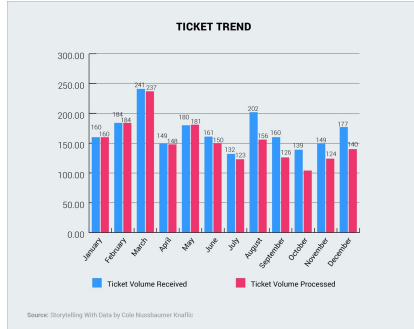
### 3. Communicate Clearly

How to improve the defaults

1. Know your audience & message
2. **Label axes, include title & legend in a legible size & font.**
3. Show control (baseline) data first and in the “neutral” (gray) color
4. X-axis should be the independent variable (time, category)
5. Scale things appropriately [try to avoid clipping the Y-axis...]

# Application of Principles

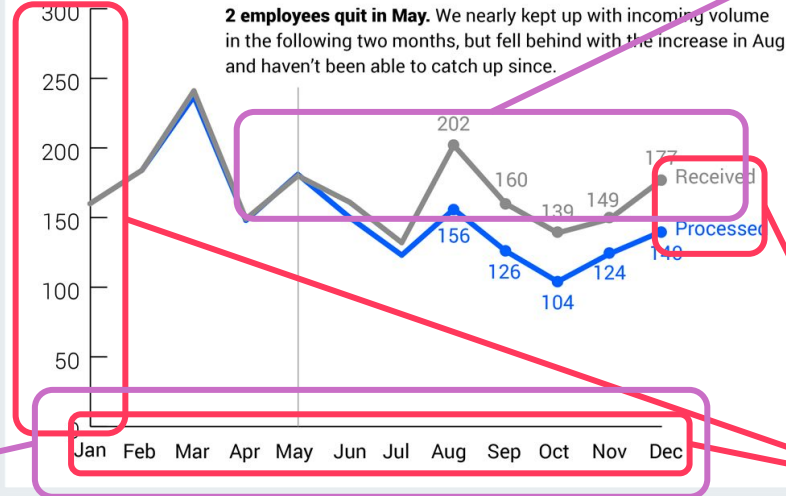
1. Message & Audience



4. Independent Variable

**Please approve the hire of 2 FTEs**  
to backfill those who quit in the past year

Ticket volume over time



3. Baseline neutral

2. Labelled & Legible



# Application of Principles

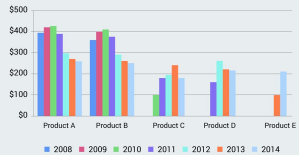
## 1. Message & Audience

To be competitive, we recommend introducing our product below the \$223 average price point in the **\$150-\$200 range**

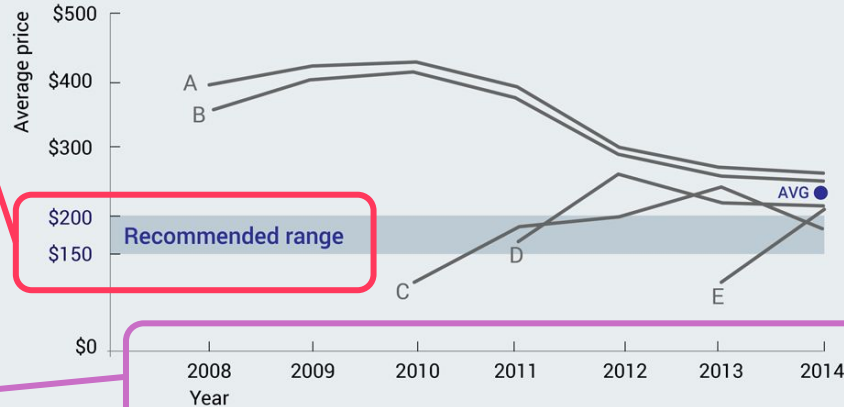
## 2. Labelled & Legible

## 3. Baseline neutral

Average Retail Product Price per Year



Retail price over time by product



## 4. Independent Variable

# Applications of Principles

1. Message & Audience

2. Labelled & Legible

3. Baseline neutral

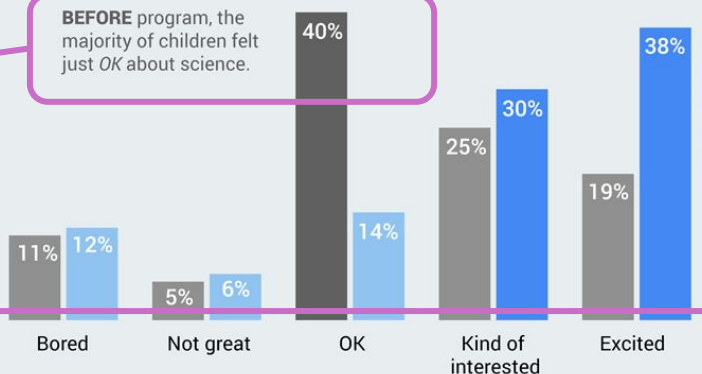
4. Independent Variable

## Pilot program was a success

How do you feel about science?

BEFORE program, the majority of children felt just OK about science.

AFTER program, more children were Kind of interested & Excited about science.

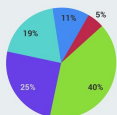


Source: Storytelling With Data by Cole Nussbaumer Knaflic

### Survey Results

PRE: How do you feel about doing science?

■ Bored ■ Not great ■ OK ■ Kind of interested ■ Excited



POST: How do you feel about doing science?

■ Bored ■ Not great ■ OK ■ Kind of interested ■ Excited



## Principles of Data Visualization

### 1. Decide on your **message**

Choose the right chart to make your point

### 2. Aesthetics matter

Don't trust the default settings

### 3. Communicate clearly

Label & Make Legible