

/// BRIEF CONTENTS

PREFACE	xv
ACKNOWLEDGMENTS	xvii
ABOUT THE AUTHOR	xix
Chapter 1. Our Backbone: Why We Visualize	1
Chapter 2. When a Single Number Is Important: Showing Mean, Frequency, and Measures of Variability	15
Chapter 3. How Two or More Numbers Are Alike or Different: Visualizing Comparisons	49
Chapter 4. How We Are Better or Worse Than a Benchmark: Displaying Relative Performance	89
Chapter 5. What the Survey Says: Showing Likert, Ranking, Check-All-That-Apply, and More	129
Chapter 6. When There Are Parts of a Whole: Visualizing Beyond the Pie Chart	171
Chapter 7. How This Thing Changes When That Thing Does: Communicating Correlation and Regression	193
Chapter 8. When the Words Have the Meaning: Visualizing Qualitative Data	207
Chapter 9. How Things Changed Over Time: Depicting Trends	257
Chapter 10. Reporting Out: Sharing Your Data With the World	293
Chapter 11. It's About More Than the Buttons	311
INDEX	325

/// DETAILED CONTENTS

PREFACE

xv

ACKNOWLEDGMENTS

xvii

ABOUT THE AUTHOR

xix

Chapter 1. Our Backbone: Why We Visualize

1

Why We Visualize	1
When Visualization Is Harmful	5
Which Chart Type Is Best?	6
Tell a Story With Data	8
How to Use This Book	9
Exercises	11
Resources	12
References	12

Chapter 2. When a Single Number Is Important: Showing Mean, Frequency, and Measures of Variability

15

What Stories Can Be Told With a Single Number?	16
How Can I Visualize a Single Number?	17
Single Large Number	17
Icon Array	18
Waffle Chart	19
Pictogram	26
Donut or Pie Graph	32
Why Circles Can Be Challenging	35
Bar Graph	36
How Can I Show Measures of Variability?	39
Translating Scientific Jargon for a Lay Audience	43
Exercises	46
Resources	46
References	46

Chapter 3. How Two or More Numbers Are Alike or Different: Visualizing Comparisons	49
What Stories Can Be Told About How Two or More Numbers Are Alike or Different?	50
How Can I Visualize How Two or More Numbers Are Alike or Different?	51
<i>Side-by-Side Column</i>	51
<i>Slopegraph</i>	52
<i>Back-to-Back Bars</i>	61
Solution 1: Two Separate Bar Graphs	61
Solution 2: Secret Buffer Data	66
Exporting the Graph out of Excel	66
<i>Dot Plot</i>	71
<i>Dumbbell Dot Plot</i>	79
<i>Small Multiples</i>	83
Exercises	87
Resources	88
References	88
Chapter 4. How We Are Better or Worse Than a Benchmark: Displaying Relative Performance	89
What Stories Can Be Told About How We Are Better or Worse Than a Benchmark?	90
How Can I Visualize How We Are Better or Worse Than a Benchmark?	91
<i>Benchmark Line</i>	91
<i>Combo Chart</i>	94
Can I Add a Second Line?	94
<i>Overlapping Bars</i>	96
An Overlapping Variation: Data Bars	101
<i>Bullet Graph</i>	105
The Easier Way: Vertical Bullets	106
The Harder Way: Horizontal Bullets	111

<i>Indicator Dots</i>	116
Benchmarks Inside Sparklines	123
Exercises	126
Resources	126
References	127
Chapter 5. What the Survey Says: Showing Likert, Ranking, Check-All-That-Apply, and More	129
What Stories Can Be Told About What the Survey Says?	131
How Can I Visualize What the Survey Says?	131
Rating	131
Stacked Bar	132
Small Multiples	135
Diverging Stacked Bar	138
What About Neutral?	142
Aggregated Stacked Bar	143
Changing the Wording of the Survey	145
Ranking	146
Column Graph	146
The Lollipop Variation	149
Large Number With Icon	157
Bump Chart	158
Branching	161
Annotated Graph	161
Nested Area Graph	162
Visualizing Not Applicable or Missing Data	165
Note Small Consistent Missing Data	165
Add Sample Size for Large Consistent Missing Data	165
Add a Graph on the Side for Large Inconsistent Missing Data	167
References	168

Exercises	169
Resources	170
References	170
Chapter 6. When There Are Parts of a Whole: Visualizing Beyond the Pie Chart	171
What Stories Can Be Told When There Are Parts of a Whole?	172
How Can I Visualize the Parts of a Whole?	173
<i>Don't Visualize at All</i>	173
<i>Pie Charts Done Right</i>	174
<i>100% Stacked Bar</i>	176
<i>Histogram</i>	179
<i>Treemap</i>	180
<i>Map</i>	184
<i>Choropleth Map</i>	184
<i>Editable Map in PowerPoint</i>	185
<i>Tile and Hex Choropleth Map</i>	187
Exercises	191
Resources	192
References	192
Chapter 7. How This Thing Changes When That Thing Does: Communicating Correlation and Regression	193
What Stories Can Be Told About How This Thing Changes When That Thing Does?	194
How Can I Visualize How This Thing Changes When That Thing Does?	194
<i>Scatterplot</i>	195
<i>Connected Scatterplot</i>	199
<i>Diagram</i>	202
<i>Don't Visualize It at All</i>	204
Exercises	205
Resources	205
References	206

Chapter 8. When the Words Have the Meaning: Visualizing Qualitative Data

207

With Jennifer Lyons

What Stories Can Be Told When the Words Have the Meaning?	209
How Can I Visualize When the Words Have the Meaning?	210
Pure Qualitative: Highlight a Word	210
<i>Bolded Words</i>	210
<i>Quote and Pic</i>	211
<i>Callout Box</i>	212
Pictures Are Worth \$1,000	213
Pure Qualitative: Thematic Analysis	214
<i>Change Photos</i>	214
<i>Network Map</i>	216
<i>Diagram</i>	219
<i>Timeline</i>	223
<i>Journey Map</i>	225
Some Quantification: Highlight a Word	228
<i>Word Clouds</i>	228
Some Quantification: Thematic Analysis	231
<i>Icons and Color Coding</i>	231
<i>Spectrum Display</i>	232
<i>Heat Map</i>	237
<i>Harvey Balls</i>	237
<i>Histomap</i>	240
<i>Bubble Chart</i>	246
<i>Gauge Diagram</i>	246
<i>Venn Diagram</i>	252
Exercises	253
Resources	254
References	254

Chapter 9. How Things Changed Over Time: Depicting Trends	257
What Stories Can Be Told About How Things Changed Over Time?	258
How Can I Visualize How Things Changed Over Time?	259
<i>Your Old Friend, the Line Graph</i>	259
<i>Area Graph</i>	262
Does the Y-Axis Have to Start at Zero?	266
<i>Stacked Column</i>	266
How Can I Show That Down Is Good?	270
<i>Waterfall Chart</i>	272
<i>Deviation Bar</i>	276
<i>Vertical Dumbbell Dot Plot</i>	282
<i>Slopegraph (as a Macro)</i>	285
<i>Sankey</i>	288
Exercises	290
Resources	290
References	290
Chapter 10. Reporting Out: Sharing Your Data With the World	293
Static Visuals	293
<i>Screenshot Software</i>	294
Social Media Sizes	295
<i>Linked Files</i>	295
Interactive Dashboards	298
<i>Flat Versus Summary Table</i>	299
<i>Pivot Tables</i>	302
<i>View the Relevant Data</i>	304
<i>Publish the Dashboard</i>	308
Exercises	309
Resources	310
References	310

Chapter 11. It's About More Than the Buttons	311
Dot Plots Generate Healthcare Pioneers	311
Clearly Labeled Line Graphs Streamline Decisions at a Fortune 500	313
Diverging Stacked Bars Make for Community Leaders in the Midwest	315
Icons Support Informed Policymaking	318
Building a Culture of Effective Data Visualization	320
<i>Acknowledge Fears</i>	321
<i>Communicate Importance</i>	321
<i>Make It Easy</i>	322
<i>Celebrate</i>	323
Exercises	323
Resources	323
References	324

INDEX **325**

Even with all the new content to learn from, you'll want to review your favorites, because I've updated and simplified the definitions, saving you time so you can put toward other ways you see the world. I've also packed this chapter with more support from peer-reviewed research around human behavior, cognition, psychology, and data visualization so that you can have confidence trying out new graph types. Be sure to download the updated companion software from this book's associated website (<https://stephanieevergreen.com/edition/>) so you can build amazing visuals right alongside me.

Oh, one more edition addition: Every image is now in full color. Color should make it approximately a million times easier to make sure your screen matches my screenshots. Easy, impactful dataviz. Does it get any better?