A Cautionary Note on Graphs

Session 3: Data Analsyis with Python
Workshop on Research Paper Writing

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Importance of Graphs

Bargraph of average House Prices

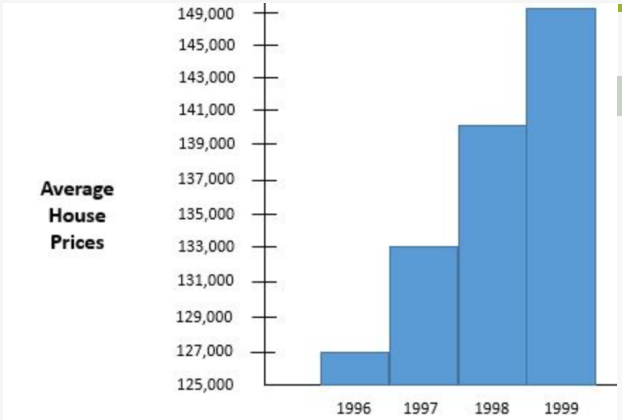


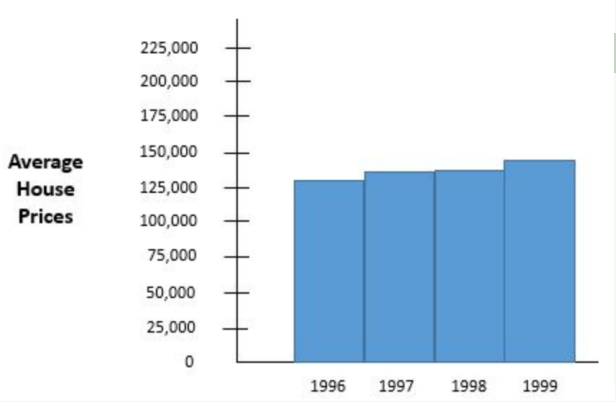
Figure 5a - An example of scale manipulation.

Yes or No?

Did the price double from 1997 to 1998?

Image Source : study.com

Issue : Truncated Y-axis



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Did the price double from 1997 to 1998?

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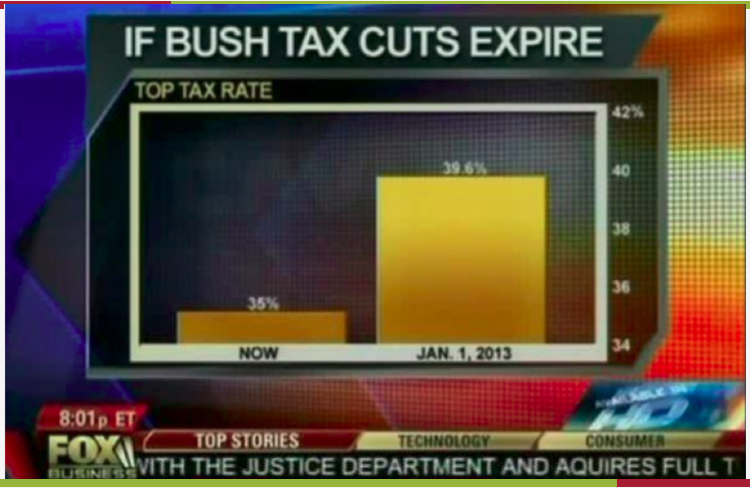
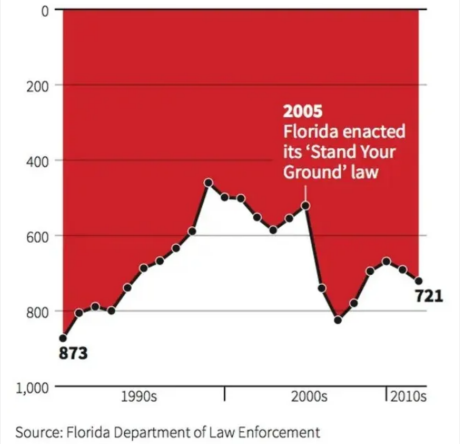
Another Example : Truncated Y-axis



Gun Death in Florida

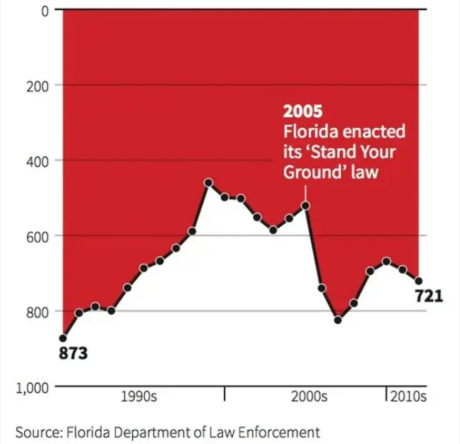


Increase or Decrease?

Did Murders Decrease or increase after Florida initiated its stand the ground law in 2005?

Image Source : medium.com

Issue : Inverted Axis



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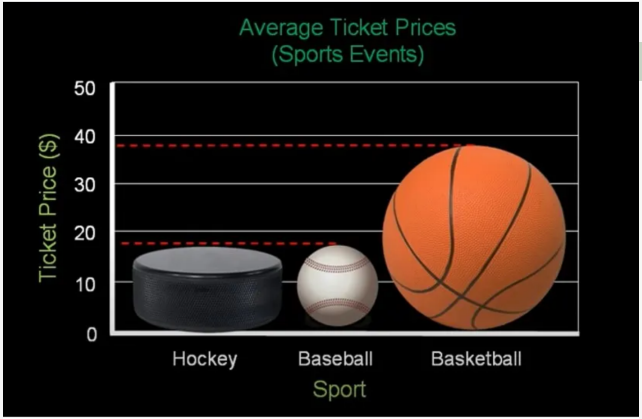
Average Ticket Prices of Sports Event

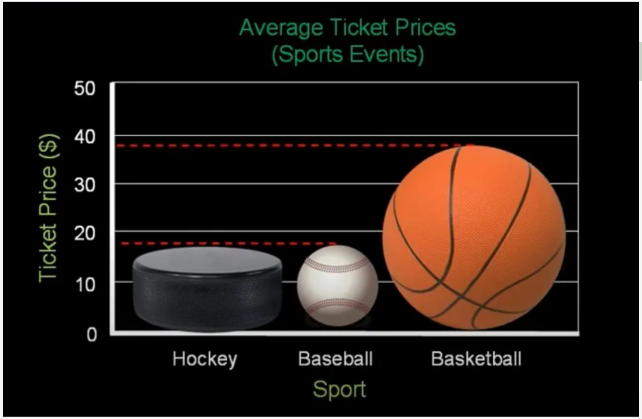


Twice or Four-Times?

Price of Basketball is twice or four-times of that of baseball?

Image Source : medium.com

Issue : Improper Scaling



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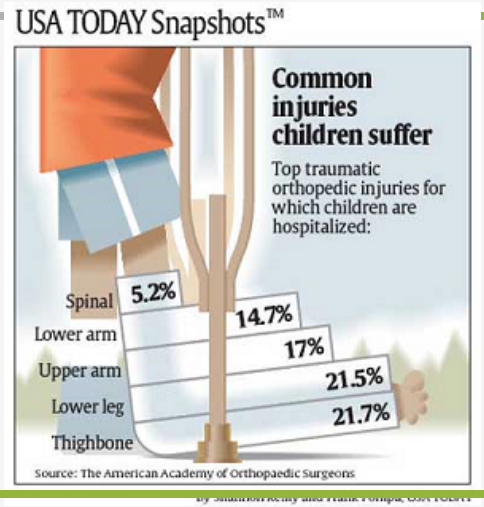
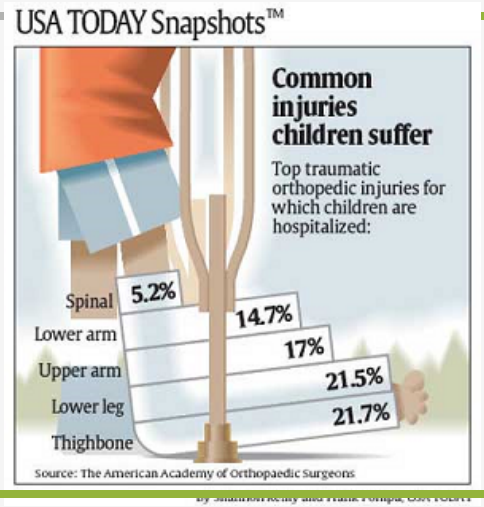
Example : Improper Scaling

Common Injuries Children Suffer



Do 5.2% of children suffer from spinal injuries??

Issue: Proper Titles and Captions



Do 5.2% of children suffer from spinal injuries??

Comcially Bad Piechart

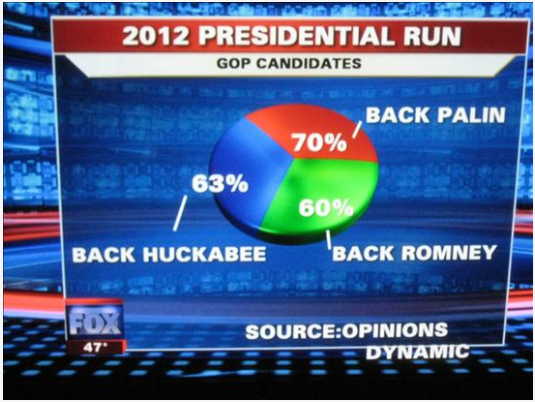


Image Source: flowingdata.com

Is blue bar larger than purple?

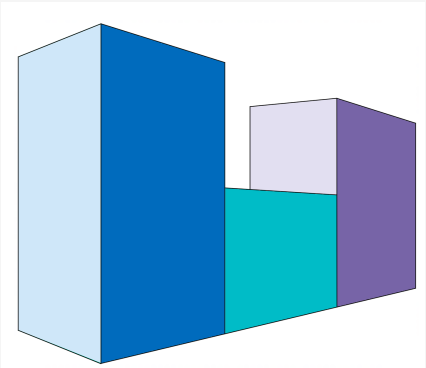


Image Source : Mathspace.co

Excellent Resources

- A short tour of bad graphs by C. J. Schwarz
- Misleading Graphs by Statisticshowto
- Graphs Gone Wrong: Misleading Data Visualizations
- INVESTIGATION: Misleading graphs by Mathspace

Good Practices when representing data