Misleading Visualization Activity Plan (Activity #1)

Link to google form: <https://docs.google.com/forms/d/e/1FAIpQLSe67PHoY23BkiXgWwITxAciX4LeHnB_sBUTx5egCcx32Bdwfg/viewform?usp=sf_link>

Format:

X# students per breakout room

* One group member shares screen and submits answers
* Use the google form to view each visualization and talk through each question

Additional resources to share with students:

* Data Visualization LibGuide: <https://libguides.lmu.edu/digcitizen/dataviz>
* Graphic of “[5 Ways Writers Use Graphs to Mislead You”](https://venngage.com/blog/misleading-graphs/)
* Junk Charts [“Trifecta Checkup”](https://junkcharts.typepad.com/junk_charts/junk-charts-trifecta-checkup-the-definitive-guide.html) for data viz criticism

# Activity Images, Questions, and Answers

Each image is accompanied by the same two questions: How is the visualization misleading and how can the visualization be changed to better communicate the data

## Image 1 – Average Female Height per Country

Source: <https://badvisualisations.tumblr.com/>



Question 1 – How is this visualization misleading?

* The y-axis doesn’t start at 0, which distorts the difference between the tallest country and shortest
* The distance between each inch is not consistent
* The colors might be hard to see visually

Question 2 – How can the visualization be changed to better communicate the data?

* Changing the y-axis (always start y axis at 0)
* Inconsistent spacing of y-axis
* One of the most common methods of distorting the message of visualizations is through manipulation of the y-axis!

## Image 2 – Georgia County Covid Data, July

Source:

* original visualization: Georgia Department of Public Health [daily status repor](https://dph.georgia.gov/covid-19-daily-status-report)t (since removed)
* multiple news articles/blogs covering misrepresentation of data, including: <https://www.ajc.com/news/state--regional-govt--politics/just-cuckoo-state-latest-data-mishap-causes-critics-cry-foul/182PpUvUX9XEF8vO11NVGO/?ct=t(Savvy_insights_0720)&mc_cid=d296d1136c&mc_eid=b03bc52df0>



Question 5 – How is this visualization misleading?

* Scales are inconsistent, leading the array of COVID cases to appear less severe
* The scales are inconsistent between the two visuals
* Having only the top level of data be red is confusing since it is the only red section

Question 6 – How can the visualization be changed to better communicate the data?

* Making the scale consistent
* Keeping the scale consistent between visuals
* Using a single color gradient or using more than one gradient of red

## Image 3 – Gun Deaths in Florida

Source: Reuters



Question 8 – How is this visualization misleading?

* At first glance, the trend looks like it decreases following the law change
* Line graph was used, making the events look connected even though each event is distinct

Question 9 – How can the visualization be changed to better communicate the data?

* While visually impactful, the visualization goes against how people are trained to read graphs regarding the y-axis
* Note: this method can be done, but special attention needs to be placed on what component of the graph is pulling the eye – for instance, here the designer used a line graph which pulls our eye to naturally follows that path. If the designer used a bar graph, it could’ve been more effective: see the example of the better done