Figures and Lies: How data is manipulated to shape our opinions

An activity that explores how to recognize misleading graphs, using everyday examples from the media.

By learning to recognize common ways graphs can be manipulated, you can start the process of changing from passive consumers of data to active, critical thinkers.
Look through the graphs and come up with a list of misleading techniques. Then read through the list below and and add any not included. If you did not get one the techniques listed below, look at the graphs again and try to find an example of it.

Deceptive Graph Techniques:

1. **Graph is accurate, but misleading**
   a. giving an irrelevant correlation
   b. ignoring other variables
      ex. asking the wrong questions
      ex. not factoring in population growth
      ex. missing information to needed to understand the data
   c. “cherry picking” data
   d. graph is not properly labeled

2. **Scale is distorted**
   a. scale does not start at zero
   b. scale is enlarged
   c. scale is too small
   d. there is no scale or units are missing

3. **Graph is not accurately drawn or distorts the information**
   a. pieces of the graph appear larger or smaller than they should
      ex. 3-D graphs
      ex. picture graphs
   b. percents don't add up to 100
   c. pieces in a chart are not in the correct ratios
   d. graph is drawn upside down
   e. units are not evenly or proportionally spaced
Causes of Death (2013)

93% of survey respondents indicated using Facebook for social media marketing.
CLINICAL PREFERENCE STUDY OF
ITCH RELIEF

DIRECT ACTION ON ITCH NERVES

1 minute Lanacane 60 minutes Lanacane
Hydrcortisone Hydrcortisone

innovation

years


www.FrontPorchMath.com
Ocean Temperature: a negligible trend
ARENA FUNDING

- $265 MILLION CITY
- $10 MILLION UNKNOWN
- $85 MILLION MALOOF
- $50 MILLION AEG

15

Hospital Admissions have Increased 125.9% since 1946

- 2013
- 1946

16
More people are watching the Super Bowl...
Super Bowl viewership in millions

Superbowl ratings have been flat for three decades
Percent of households with TVs watching the Super Bowl
Age of People in Town vs Age of our Members

Number of people in town vs Number of members

- Population
- Members

UNEMPLOYMENT RATE
UNDER PRESIDENT OBAMA

10% 9.5% 9% 8.5% 8%

9.0% 8.9% 8.8% 9.0% 9.1% 9.2% 9.1% 9.1% 9.1% 9.0% 8.6%

JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV

2011

SOURCE: BUREAU OF LABOR STATISTICS
## Graph sources:

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https://www.buzzfeed.com/katienotopoulos/graphs-that-lied-to-us?utm_term=.gdyOQ0o48#.itny0kRAz

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