Statistical Literacy and Common Core Standards

Posted by Jeff Wyman on November 13th 2014.

Cartoon Depicting Mr. Alfred De Fuisseaux (1843-1901)
As a Figure Juggling with Figures
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"Facts are stubborn, but statistics are more pliable."–Mark Twain

The Numbers Game

Statistics are everywhere. Politicians, pundits, journalists, lobbyists, academics, students, and scientists–these are just a few examples of people who use statistics to defend their work. But statistics are often presented in ways that can alter how we understand and interpret a particular issue, which is why statistical literacy is so important.

Statistical Literacy and Common Core Standards

Statistical literacy includes the ability to find, analyze, and interpret statistics. Common Core State Standards emphasize the importance of statistical literacy.

Here are a few Common Core Standards that relate to statistics:

- CCSS.Math.Content.HSS.IC.A.1 Understand statistics as a process for making inferences about population parameters based on a random sample from that population.
- CCSS.Math.Content.HSS.IC.B.3 Recognize the purposes of and differences among sample surveys, experiments, and observational studies; explain how randomization relates to each.
- CCSS.ELA-Literacy.CCRA.W.9 Draw evidence from literary or informational texts to support analysis, reflection, and research.

Analyzing Statistics

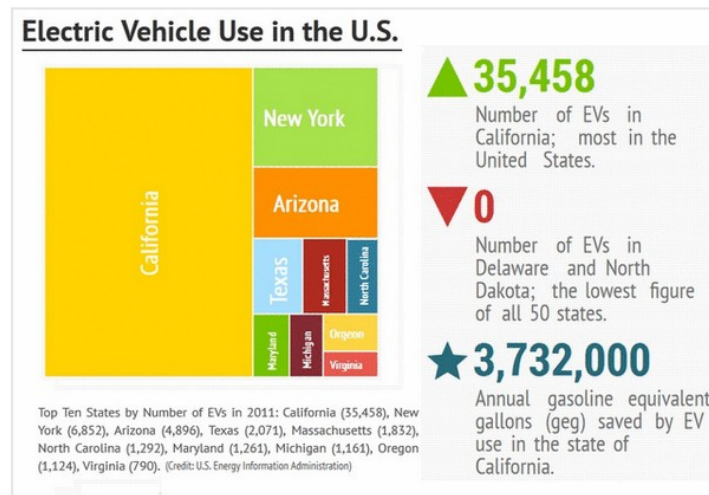A Common Core-aligned statistical analysis should cover three major steps:
- **Find** statistics on a subject of interest
- **Analyze** statistics
- **Apply Knowledge** by evaluating credibility and making conclusions about statistics

Take a look at this infographic:
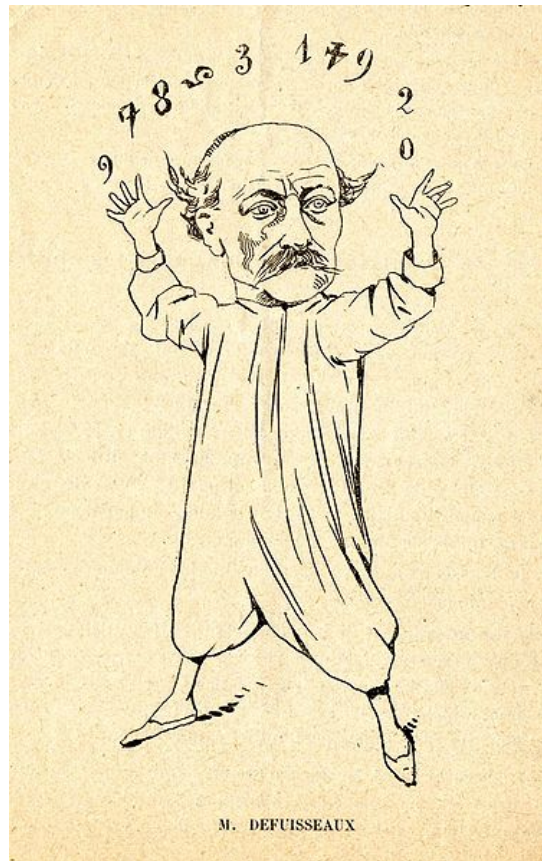
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(Credit: ProQuest LLC)

Image by ProQuest LLC via ProQuest SIRS Issues Researcher

Based on this infographic, California has the highest number of electric vehicles. But these data only tell part of the story. Consider California's population size: it is the most populous state in the United States, which puts California at a distinct advantage when presenting a simple tally. More sparsely populated states would likely favor presenting these statistics as electric vehicles *per capita*. Both presentations of data are correct, but the way in which these statistics are presented may alter our understanding and interpretation.

This example illustrates the importance of statistical literacy. Statistical representation, however, is only one facet of statistical analysis. Other considerations include: sources, authors, sponsoring organizations, dates, historical context, statistical methodologies, and comparable studies.

Resources

Check out these resources:

- **Find:** ProQuest SIRS Issues Researcher offers statistics that correlate to Leading Issues. Students can find statistics related to their Leading Issues by clicking on Statistics.
- **Analyze:** Our step-by-step, Common Core-aligned guide, Understanding Statistics, will help students analyze statistics.
- **Apply Knowledge:** Our guide will prompt students to draw conclusions about statistics.

Statistical literacy will help students meet Common Core Standards, but it will also help them understand and think critically about the statistics that bombard them every day.

Sources:
http://blogs.proquest.com/sirs-issuesresearcher/meet-common-core-standards-with-statistics/
URLS in Resources paragraph.
1   www.proquest.com/products-services/sirs_researcher.html
2   http://sks.sirs.com/cgi-bin/hst-issues-display?id=SZZRES-0-1429
3   http://blogs.proquest.com/sks/sirs-leading-issues-making-sense-of-data/
4   http://sks.sirs.com/docs/SIRS%20CC%20Guide--Understanding%20Statistics.pdf