Unit 10 Misuses and Abuses of Statistics

Content Area: **Mathematics**
Course(s): **AP Statistics**
Time Period: **June**
Length: **4 weeks**
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Enduring Understandings

There are may ways to misuse or mislead with statistics

It is important to question results that are given and not accept them outright

Graphs can be misleading

It is possible to get desired results by selectively collecting data

Essential Questions

Can surveys be trusted?

What are some red flags when reading a study or experiment that may indicate biased results?

What should you look for to ensure a graph is not misleading in its construction?

What information should be presented with a study to ease suspicion and lessen scrutiny?

Content

Red Hot Topics:

Misleading graphs

Non-random sampling

Misleading survey questions

Inaccurate interpretations

Vocabulary:

Bias

Truncated graphs

Quota sampling

Voluntary response

Convenience sampling

Skills

Create misleading graphs using improper proportions or not starting at 0.

Use non-random sampling to collect data.

Construct misleading survey questionnaires.

Design a study to achieve a certain predetermined outcome.

Debate two opposing views using the same data set.

Resources

Standards

CCSS.Math.Content.HSS-IC.A	Understand and evaluate random processes underlying statistical experiments
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.A.2	Decide if a specified model is consistent with results from a given data-generating process, e.g., using simulation.
CCSS.Math.Content.HSS-IC.B	Make inferences and justify conclusions from sample surveys, experiments, and observational studies
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.Math.Content.HSS-IC.B.4	Use data from a sample survey to estimate a population mean or proportion; develop a margin of error through the use of simulation models for random sampling.
CCSS.Math.Content.HSS-IC.B.5	Use data from a randomized experiment to compare two treatments; use simulations to decide if differences between parameters are significant.
CCSS.Math.Content.HSS-IC.B.6	Evaluate reports based on data.