

Part 3 of STAT 210 Project

Overview

Your project must start with an interesting and meaningful question; use a good design for data collection; summarize the data visually, numerically, and verbally; use the data to make appropriate inferences; and reach sound conclusions about the original question.

Requirements

1. Choose a good question to investigate.
2. Design an appropriate study or experiment.
3. Collect good data; they may come from an **unbiased** survey. You can also collect data from an observational study, experiment, or other sources such as publications or the internet.
4. Summarize your data using appropriate summary statistics and verbal descriptions.
5. Make inferences based on your data. **You must have a hypothesis test!**
6. State your conclusions.
7. Submit a complete written report using statistical language.
Due on November 30th.

Evaluation

Grades will be based upon your research question, your design, the proper application of statistical concepts and methods, and your written report.

Project Advice

1. Think of an interesting question or an issue you care about.
2. Create a good design, free of bias, randomized, that will produce useful data. Remember that controlling an experiment is often easier than sampling.
3. Give yourself adequate time to collect and analyze the data. The due dates arrive faster than you think they will.
4. Make clear summaries – graphical, numerical, and verbal.
5. Produce a sophisticated statistical analysis.
6. Reach statistically justifiable conclusions about your original question.
7. Submit a complete report.

Some Ideas

- Do after school jobs or participation in sports affect grades?
- Can we predict height or weight from shoe size?
- Are smokers less likely to wear seatbelts?
- Which grocery store or drug store has the lowest prices?
- Do males get higher math SAT or AMC scores than females?
- Are females equally likely to enroll in advanced math, science, or computer courses?
- Do ninth graders study more or less than juniors or seniors?
- How much stronger is a person's dominant hand?
- Are lefties more coordinated with their right hands than righties with their lefts?
- Do people prefer coke or Pepsi?
- Can people tell the difference between national brands and store brands?
- Can people tell by taste whether soda comes from a plastic bottle, a glass bottle, or a can?
- Does mail arrive faster with zip codes?
- Does ESP or astrology actually work?
- Are reaction times faster for males or females? Athletes/non-athletes? Right/left hand?
- Are homeruns, RBI, or batting averages good predictors of baseball salaries?
- Are NFL and NHL teams more likely to be able to come from behind in home games?
- What is the trend in swimming records? In college costs? In birth rates?

Rubric

Chose a good, interesting question to investigate	5
Designed a good study/experiment	10
Collected data and organized the data with summary statistics and verbal descriptions	10
Performed a hypothesis test (all aspects included)	50
Conclusion	20
Organized and easy to follow	5