

In my A.P. Statistics class, I assign several projects throughout the year. These projects reinforce the topics we are learning in class and allow students to apply these topics to a question of interest to them. Below is a project that I have assigned to my A.P. Statistics students as a good end of the year review.

FINAL STATISTICS PROJECT

OBJECTIVE: **Using the concepts we have covered this year, compare two populations to determine if they are significantly different.**

GUIDELINES:

I. Formulate a Hypothesis (10 points)

Decide upon two populations that you want to compare. Are you comparing means or proportions? Formulate null and alternative hypotheses. Also pick a significance level.

II. Collect Data (20 points)

Describe your design. Survey or experiment? SRS, Stratified, Multi-Stage, etc.? Matched Pairs? Describe your data. Is your data categorical or quantitative? What are the units of measure (if any)?

III. Analyze the Data (20 points)

Graph your sample data to check for outliers and skewness, if appropriate; or check for normality using the conditions for categorical data. Find the sample mean and sample standard deviation or sample proportion.

IV. Draw Statistical Inferences (40 points)

Using a hypothesis test, determine if your data suggests that the two populations are significantly different. Remember to show all of the steps of a hypothesis test and to state your conclusion in context.

V. Reflect on the Process (10 points)

What are the strengths and weaknesses of your project? What would you have done differently? Pick an alternative mean or proportion and find the power of your hypothesis test.

FINAL PRODUCT: A 2- 3 page typed report of your results, including tables of data and computer-generated graphs. You will also present this project to the class. You should have visual aids (such as PowerPoint, posters, handouts, etc.).

DEADLINES:

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| Choice of topic / partner | March 26 |
| Data Collected | April 3 |
| Final Project and Presentation | April 8 |