

A Statistical Study of Your Interests

AP Statistics Semester Project

In this project, you will choose a topic that you would like to understand better, and then you will perform a statistical analysis on that topic, in order to better understand it, make a conclusion, and make a recommendation based on your conclusion. Please make a copy of this document and name it "<Your Name>_AP Statistics Final Project_<Title of Project>"

Timeline:

February 2: Proposal is due in FlipGrid (Standards 1-3)

February 5: Respond to at least two of your colleagues in FlipGrid, with the goal of everyone having at least one peer response.

February 16: A detailed description of the study design is due (Standards 4-5)

February 19: Peer review of partner's design due (partner assigned in class)

February 23: Graphical display and description due, which means that data collection needs to be complete, whether that is from an experiment or survey that you actually do, or work with a data set that already exists (Standards 6-7)

February 26: Peer review of partner's work due (new partner assigned in class)

March 8: Confidence intervals and interpretation due (Standards 9 and 11)

March 11: Peer review of partner's work due (new partner assigned in class)

March 29: Hypothesis tests and conclusions due (Standards 8 and 12)

April 1: Peer review of partner's work due (new partner assigned in class)

April 5: Power, Type I/Type II Errors, Probability Point Estimate, and Recommendations discussed due

April 8: Peer review of partner's work due (new partner assigned in class)

April 12: Presentation due

April 15: Peer review of partner's graph due (new partner assigned in class)

April 20-May 1: Each day we will have one presentation in addition to our review work

May 4-May 15: AP Exam weeks! Lots and lots of review:)

Turn in:

1. Document that includes all of the criteria for the project "<Your Name>_AP Statistics Final Project_<Title of Project>"
2. Presentation ("<Your Name>_AP Statistics Final Presentation_<Title of Presentation>")

There is a place in "assignments" to turn this project in on Canvas, or you can turn in a paper version. I need it by Monday at 9, so I can grade them during my planning period, finish grading during the presentation, and give you your feedback on the day of (as well as enter the grades and be done!). You will also need to keep up with your rubric and hand that to me when you go to present, since I will be using it while you work on the project to provide you with feedback. If you choose not to change something after I've given you feedback, please highlight or make a note that it did not change, so I don't have to look at it again.

Data Links:

<https://www.gapminder.org/tools/?from=world#Schart-type=bubbles>

<https://www.gapminder.org/data/>

<https://unstats.un.org/home/>

<https://dasl.datadescription.com/>

<http://jse.amstat.org/>

<https://www.who.int/>

<https://concord-consortium.github.io/codap-data/>

<https://ww2.amstat.org/censusatschool/index.cfm>

Criteria (or Standard)	I	P	E	Feedback
Statistical Study				
1. A clear, statistical question is being posed, that has been designed to avoid response bias.				
2. It is clear in your proposal that you have an idea of how you will be collecting data on your topic.				
3. Discussion of what type of data you will be using: observational study, survey, or experiment.				
4. The survey or experiment that you conduct is well-designed (completely randomized, big enough to be considered normal, independent...i.e...fits the conditions) OR you have clearly checked the conditions of the survey or experiment or dataset that you analyze.				
5. A discussion of potential biases or confounding factors that are being controlled for through the design.				
6. An appropriate graphical display is included.				
7. A thorough description of the graphical display is included.				

8. An appropriate test is conducted to determine statistical significance.				
9. An appropriate confidence interval is constructed.				
10. An appropriate conclusion is made based on the test results.				
11. An appropriate conclusion is made based on the confidence interval.				
12. An appropriate expected value/point estimate is included, based on the probability of occurrence that is found.				
13. The power of the test is discussed correctly.				
14. The potential Type I and Type II errors are discussed correctly.				
15. An appropriate recommendation is made, based on the conclusions.				
Presentation				
16. The presentation is visually appealing.				
17. The presentation is clear to understand.				
18. The recommendation is stated in the presentation, and appropriate evidence is				

provided to support the recommendation.				
19. The presentation lasts no more than 5 minutes.				
20. When presenting, the presenter gracefully and correctly answers all questions.				
21. When not presenting, stayed engaged in each presentation, asking good questions and follow-up questions when appropriate.				

I=incorrect (0 points), P=partially correct (0.5 points), E=essentially correct (1 point)