AP STATISTICS PROJECT

DESCRIPTION
In lieu of a final exam, you will:
a) Identify a researchable (testable) hypothesis
b) Design a randomized observational study, survey or experiment to test it
c) Carry-out the study, survey or experiment and collect the data (obtaining ≥ 30 values)
d) Analyze the resulting data

GROUP SIZE
You may do this project by yourself or with a partner.

PROPOSAL
You must have an approved project no later than _____. To get approval, you must clearly complete the Project Proposal Form.

TYPED AND DOUBLE-SPACED REPORT due no later than _____ using the headings below (in order):

COVER SHEET

A cover sheet with title (posed as a question), name(s) and date; IB candidates should include their candidate number (5 points)

ABSTRACT

Clearly write a summary (less than 200 words) of the study, survey or experiment including the aim, the hypotheses, the method, the participants, the results and the conclusion (5 points)

INTRODUCTION

Clearly state your null and alternative hypotheses in words and mathematically (10 points)

METHOD

Describe how you carried-out your study, survey or experiment using a chronological order. List all materials used and reference sample copies to Appendix A (10 points)

RESULTS

Explicitly justify the inference test chosen to test your hypothesis. Show all calculations (using formulas), find a *P*-value and state a conclusion using language that your Grandmother or Grandfather could understand. If appropriate, construct an appropriate confidence interval to support your findings (20 points)

DISCUSSION

Discuss things that went wrong and make suggestions on what you would/should have done differently (10 points)

APPENDIX A

Include all materials used for the study, survey or experiment (10 points)

APPENDIX B

Display all the data you gathered in a table. If applicable, include good data summaries (means, standard deviations, 5-number summaries etc.) and a commentary on these summary statistics (10 points)

APPENDIX C

Accurately and clearly graph the results directly relevant to your hypothesis and provide commentary on what it shows (10 points)

19 FREE PUBLIC DATA SETS FOR YOUR FIRST DATA SCIENCE PROJECT

www.springboard.com/blog/free-public-data-sets-data-science-project

PREVIOUS RESEARCH TOPICS

- Does music enhance memory?
- What factors effect healthy plant growth?
- What is the average age of a Lawrence Township teacher?
- Does a regular Frisbee travel farther than a golf Frisbee?
- Which golf ball travels the farthest?
- Are Double Stuff Oreos really double stuffed?
- Who tips better at a restaurant- men or women?
- Is the proportion of colors of plain M&M's what the company claims it should be?
- Is the team performance of the Indiana Pacers consistent with an average NBA team?
- Do states with capital punishment have a lower homicide rate than those states without?
- Do bottles of Country Time Lemonade really contain 500 ml as advertised?
- What is the average death age of a Marion County resident?
- What animal do people prefer as a pet?
- Do glasses make people look smart?
- What is the average age of the members of Congress?
- Does it take more than 250 licks to get to the center of a Tootsie Pop?
- Who takes longer to get ready for school- freshmen girls or senior girls?

PROJECT PROPOSAL

Name(s) _____

_____ State the question you are trying to answer:

_____ Describe your population of interest:

_____ State your null and alternative hypotheses:

_____ Describe your survey/study/experimental design/study. If applicable, justify that your survey/experiment is ethical for human subjects:

_____ State how you plan to randomly collect your sample or randomize your experiment:

_____ State the statistical test(s) you plan to use to analyze your data:

AP STATISTICS/MATH STUDIES PROJECT

Name(s) _____ Date Received _____

_____/5 A cover sheet with title (posed as a question), name(s) and date

_____/5 **ABSTRACT:** Clearly write a summary (less than 200 words) of the study, survey or experiment including the aim, the hypotheses, the method, the participants, the results and the conclusion

_____/10 **INTRODUCTION:** Clearly state your null and alternative hypotheses in words and mathematically

_____/10 **METHOD:** Describe how you carried-out your study, survey or experiment using a chronological order. List all materials used and reference sample copies to Appendix A

_____/20 **RESULTS:** Explicitly justify the inference test chosen to test your hypothesis. Show all calculations (using formulas), find a *P*-value and state a conclusion using language that your Grandmother or Grandfather could understand. If appropriate, construct an appropriate confidence interval to support your findings

_____/10 **DISCUSSION:** Discuss things that went wrong and make suggestions on what you would/should have done differently

_____/10 **APPENDIX A**: Include all materials used for the study, survey or experiment

_____/10 **APPENDIX B:** Display all the data you gathered in a table. If applicable, include good data summaries (means, standard deviations, 5-number summaries etc.) and a commentary on these summary statistics

_____/10 **APPENDIX C:** Accurately and clearly graph the results directly relevant to your hypothesis and provide commentary on what it shows

_____/10 Appropriate format and all deadlines met

_____/100 **FINAL GRADE**