AP STATISTICS/IB MATH PROJECT

DESCRIPTION
In lieu of a final exam and in accordance with the IB requirements for Standard Level Math Studies candidates, 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
IB candidates must do this project by themselves. Everyone else may do this project by him/herself or with a partner. However, if you do the project with a partner, I will expect more than with an individual project.

PROPOSAL
You must have an approved project no later than _____. To get approval, you must clearly complete the Project Proposal Form. If relevant, you must also make sure that your experiment/survey will be safe and ethical for human subjects.

TYPED AND DOUBLE-SPACED REPORT due no later than _____ and must include the following (in order):

5 points	A cover sheet with title (posed as a question), name(s) and date; IB candidates should include their candidate number.
5 points	An abstract of your report
10 points	Your null and alternative hypotheses clearly stated in words and mathematically
10 points	A description of how you carried-out your study/survey/experiment and a discussion on why/how you designed it
10 points	A description of things that went wrong and any suggestions on what you would have done differently
20 points	A description of the statistical test you used to test your hypothesis and the reason(s) for choosing the test you chose. Show all calculations; find a *P*-value and an appropriate confidence interval
10 points	A conclusion about your hypothesis using language that your Grandmother or Grandfather could understand
10 points	Appropriate format and all deadlines met
	APPENDIX:
10 points	All the data you gathered displayed 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	A graph (or many graphs) of your data and commentary on what it shows. Use a box-plot, stem and leaf plot, scatterplot, histogram and/or pie chart.

Since I will keep many of your reports, be sure to make a copy for yourself

PREVIOUS RESEARCH TOPICS

- Does music enhance memory?
- What factors effect healthy plant growth?
- Personal space… how close is too close?
- Do girls or boys use more tape when wrapping presents?
- Does a regular Frisbee travel farther than a golf Frisbee?
- Which golf ball travels the farthest?
- Do men prefer different colors than women?
- 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?
- Does coaching improve SAT or ACT scores?
- 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?
- Do teenage girls want to get married earlier in life than teenage boys?
- What animal do people prefer as a pet?
- Do glasses make people look smart?
- What is the average age of the members of Congress?
- How do people choose who they will become friends with in high school or college?
- 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?

QUESTIONS "OUTSIDE THE BOX" (From **Freakonomics**)

- What do schoolteachers and sumo wrestlers have in common?
- Why do drug dealers still live with their moms?
- What makes a perfect parent?
- Would a Roshanda by any other name smell as sweet?

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 experimental design/study. If applicable, justify that your experiment/survey 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 An abstract of your report

_____/10 Your null and alternative hypotheses clearly stated in words and mathematically

_____/10 A description of how you carried-out your experiment/study and a discussion on why/how you designed the experiment/study

_____/10 A description of things that went wrong and any suggestions on what you would have done differently

_____/20 A description of the statistical test you used to test your hypothesis and the reason(s) for choosing the test you chose. Show all calculations and find a P-value and/or a confidence interval

_____/10 A conclusion about your hypothesis using language that your Grandmother or Grandfather could understand

_____/10 Appropriate format and all deadlines met

APPENDIX:

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

_____/10 A graph (or many graphs) of your data and commentary on what it shows. Use a box-plot, stem and leaf plot, scatterplot, histogram and/or pie chart.

_____/100 **FINAL GRADE**