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| **Procedure**  **1. Formulating a Topic**  We made a list of the possible topics for our project, listing all areas that were of interest to us. One of the ideas we were intrigued by was the topic of instinct. After finding out that instinct had little scientific basis we decided to pursue the topic of the subconscious. This idea was brought to light by our history teacher, Mrs. Wohlgemuth. After conferring with Mr. Thiel we decided on this topic.  **2. Designing the Survey**  For the Survey we needed to find information that everyone had been exposed to, so we found old study guides, homework, and notes from several subjects. We then separated a list of possible questions by subject and categorized them into history, science, math, and literature. We chose the questions that we knew had been taught but weren�t the focus of any classes. We also chose an equal number of questions for each subject area, to eliminate any bias due to the question type. The order of the questions were arranged by alternating subjects, but was modified after conducting the experimental survey.  **3. Designing the Experiment (Eliminating Bias)**  We calculated the number of students necessary to obtain a trustworthy sample, however after considering our limited circumstances, we had to give up on conducting an actual simple random sample (SRS). In order to compensate for this setback, we decided to survey the entire senior class, by giving out our surveys in every Civics/Economy class, which is a required course for seniors. Although there was not an even number of senior history classes for every period, we believe the extremely large sample size and the fairly balanced number of classes for each period of the day compensated for this inequality. We needed to test out the difficulty of the test on an experimental class and we picked a period with a greater number of classes and a class with a smaller size and more conscientious students.  **4. Contacting the Teacher and Distributing Permission Slips**  After establishing the setup of the experiment, we contacted and conferred with our biology teacher in order to confirm some of our procedures and elimination of bias, which is very important in an experiment. After attaining approval, we proceeded to contact the individual teachers that we needed assistance from. WE also printed out enough permission slips for every student and entrusted the teachers to pass them out. We did not mention the object of our project on the permission slip to control another source of bias. After conferring with most of the teachers we were able to set a fairly accommodating date for both the teachers and us.  **5. Conducting the Survey (Bias cont.)**  Before administering the survey to all of the classes, we presented the preliminary survey to an experimental class. Based on their feedback we eliminated some questions and added others. We also rearranged the order of the questions based on difficulty to curb excessive discouragement. During the actual day of the experimentation, we prepared a written speech\*, so that we would administer the same set of instructions to all students (see Oral Speech). We also wore dull clothing to not detract from the seriousness of the survey. We also tried to eliminate the devaluing of the survey by reminding all participants to not disclose information contained within the survey to peers. As with the prepared speech the surveys themselves was also identical to one another.  **6. Analyzing the Data**  After obtaining hundreds of completed surveys we had to design a chart to tally the data. We proceeded to separate the papers by period and then by gender. The next separation was based on the correctness of the answers and then the confidence of the student. Each answer was tallied and then imputed into Minitab. After learning the usage of the statistical program, Minitab, and realizing all of its advantages, we were able to analyze most of our data on that program. The data was entered by periods combined and according to whether or not the answer was correct and the confidence level of individual questions. We checked the histograms for approximate normality and possible outliers. We also conducted the Chi-Square Test, which compares quantitative variables, to obtain a P-value and judge the significance of our data. The P-values were obtained with the use of TI-83 calculators. We also tested to see if the subject tested affected the correctness.  **7. Formalizing Our Conclusions**  After obtaining our data and reaching some conclusions we typed up a written report of our findings.  **\*Oral Speech**  Instructions:  (Wait till everyone is quite..)  Fan: I am Fan Liu. This is Sibo Zhao. We are two AP Biology students. For our project, we need to conduct a survey. Please take out a piece of binder paper and a pen or pencil.  (Sibo passing out survey...)  Fan: Please do not turn them over until everyone has received a copy of the survey. Do not write your name on your papers and do not write on our surveys. Please take it seriously.  Sibo: Now if you would turn them over. Notice the first question and please answer that now! It is very important. Also note that the rest of the questions have even numbers in front of them, this is because after answering each question, you must answer the question at the top of the first page.  Fan: Mark answer A if you definitely knew the answer to the question. Mark answer B if you kind of knew the answer or had an educated guess. Mark answer C if you had no idea and guessed. Does anybody have questions?  (Answer questions if there is any..)  Sibo: Answer each question to the best of your ability. We will collect the survey from you at the end of 20 minutes, please begin now.  (20 min later...)  Fan: Has everyone turned in his or her survey? Please do not discuss the questions with students from other classes because that would ruin our results. Thank you for taking our survey. Bye!  [[Home](http://docs.google.com/home.html)][[Introduction](http://docs.google.com/introduction.html)[[Acknowledgement](http://docs.google.com/acknowledgement.html)][[Hypothesis](http://docs.google.com/hypothesis.html)][[Procedure](http://docs.google.com/procedure.html)][[Data](http://docs.google.com/data.html)][[Conclusions](http://docs.google.com/conclusions.html)][[Recommendation](http://docs.google.com/recommendation.html)][[Bilio/Links](http://docs.google.com/biblio.html)]  [[2002 Projects](http://docs.google.com/AP2002/index.html)][[2001 Projects](http://docs.google.com/index.html)][[2000 Projects](http://docs.google.com/AP2000/index.html)][[1999 Projects](http://docs.google.com/AP99/index.html)][[1998 Projects](http://docs.google.com/AP98/index.html)] |