CALIFORNIA STATE SCIENCE FAIR
2003 PROJECT SUMMARY

Name(s)
Aiden J. Aceves

Project Number
J1701

Project Title
A Rose by Any Other Name: The Science of Decision Making

Abstract

Objectives/Goals
The goal of my experiment is to determine if people judge political policies and ideas based on the merits and logic of the views expressed in the statement being made or if they react more to whom or what group is making the statement or policy.

Methods/Materials
For this experiment I wrote a single editorial statement; for half the people I surveyed my statement was attributed to a liberal group and for the other half the same statement was attributed to a conservative group. After they wrote down whether they agreed or not I asked them to record their age, gender, education level, and political affiliation.

Results
I found that for people who listed themselves as middle of the road (neither liberal nor conservative) that they tended to agree with the statement regardless of whom it was attributed to by a 3 to 1 ratio. However, when people listed themselves to be liberal or conservative, the background of who made the statement played an important role in their decision to agree or dissagree with the statement. Conservative subjects aggreed with the statement when attributed to a conservative source by a ratio of 3:1 and dissagreed with the same statement by 3:1 when it was attributed to liberal sources.

Conclusions/Discussion
My experiment shows that for people who consider themselves to be on either side of the political spectrum that they often times do seem to judge a statement or policy by who or where the authorship comes from, as much as by the content itself.

Summary Statement
In politics people often judge a statement by the persona of the speaker, rather than by its merits.

Help Received
Mr. Richard L. Aceves advice on research methods

CALIFORNIA STATE SCIENCE FAIR
2003 PROJECT SUMMARY

Name(s)
Nicole M. Caito

Project Number
J1702

Project Title
What Bone Do Children Break the Most and What Is the Main Cause?

Abstract

Objectives/Goals
To figure out what bone was broken the most by children and what was the main cause.

Methods/Materials
The materials:
1. Surveys - that I made on my own and then sent about 280 to each school so a total of 2,240 surveys used
2. Computer - Gateway 2000, Microsoft Word, and Microsoft Excel
3. Printer - printed out copies of the survey
4. Copy machine - to make copies for schools to survey
5. Pen & Paper - to take notes and write down data and results
6. Books -
1. Muscles and Bones by Andrew Llamas
2. Human Body by Dr. Frances Williams
3. The Skeleton and Muscular System by Carol Ballard
7. Calculator - for adding and subtracting surveys
8. Car - for transportation from school to school
9. Log Book - for keeping track of data
10. Boxes - to hold surveys
11. Brown and white folders - to hold surveys
12. Binder - to use for log book
13. Students - people to survey

Procedure:
1. collected data about bones from skeletal books from the library
2. sorted data into questions to ask on surveys
3. created a survey on computer
4. printed survey
5. made copies of surveys

Summary Statement
It's about how bones are broken and what the cause is.

Help Received
Mother helped send surveys to the schools.

CALIFORNIA STATE SCIENCE FAIR
2003 PROJECT SUMMARY

Name(s)
Lily J. Collins

Project Number
J1703

Project Title
Mirror Mirror on the Wall, What's My Body Image After All?

Abstract

Objectives/Goals
I wanted to see how girls' body images differed between single sex and coed schools. I also wanted to see how the appearance of boys affected the body images of the girls who attened coed schools. What is the popular body image of a girl today, from girls' and boys' point of view.

Methods/Materials
I tested 330 people between the ages 13-16. There were 110 boys, 110 girls from single sex schools, and 110 girls from coed schools. I handed out the questionnaires that I made to over 13 different schools and to all of my friends who in turn, handed them to family and friends. I made two different questionnaires, one for the girls and one for the boys.

Results
I found out that girls from single sex schools had slightly less positive body images than those from coed schools. The typical body image of a girl today was common between the girls and boys. As the boys grew older, their answers became more direct and focused on certain body parts. These aspects were often the ones that girls would most likely change about themselves. This shows that boys do have an effect on how girls feel about themselves.

Conclusions/Discussion
Girls today do feel conscious about their bodies. Some of the girls in coed schools admitted that boys do affect the way they feel about themselves. Many feel bad when boys talk about the ideal image of a beautiful girl, because they feel as though they can't live up to the boys' expectations. It is important for girls to know that they are not alone in how they feel and the problem of a negative body image is possible to overcome.

Summary Statement
My pr

Help Received

CALIFORNIA STATE SCIENCE FAIR
2003 PROJECT SUMMARY

Name(s)
Neresa A. De Biasi

Project Number
J1704

Project Title
Why Are Teens Stressed?

Abstract

Objectives/Goals
My objective is to conclude whether or not peer pressure and family pressure is what stresses out teens the most.

Methods/Materials
I created a survey that contained five main parts including the following: Friends and Peer Pressure, School, Mental Disabilities/Health, Parents & Family and finally, Personal Habits. I then made 150 copies, which I distributed, and using the results from the returned surveys, I analyzed the data to gain a conclusion.

Results
After receiving the responses from my surveys, I analyzed the data and found out that the teens worry seven percent about their religion or race; second, they worry fourteen percent about their health. Coming in third, personal habits scored seventeen percent. Fourth, family and friends tied at twenty-five percent and coming in last, based on my survey results, school came in at thirty-three percent. Teens, ranging in age from eleven to fourteen, deem themselves to be fifty-five percent stressed.

To analyze this, I totaled the amount of points in each section and the "stress points" that each teen totaled then I divided it into each other and that gave me a percentage, which I then placed into the bar graph. Even though I thought that teens and family would be more stressful, my survey made it so that school came out first.

Conclusions/Discussion
After collecting all the surveys from the surveyors, I only received one hundred and forty-one completed surveys.

Using the average percents, I concluded that school pressure is the most stressful aspect in a teen's life because it totaled thirty-three percent average in stressing a teen. This conclusion is only based on my survey and it may not be completely accurate.

In my hypothesis, I stated that I believed friends and family to be the most stressful aspects of a teen's life, however I was proved wrong because those came in second as stressful, at twenty-five percent. At first, I thought that friends would be the most stressful aspect because it was scoring high based on the pie-chart graphs, but then after I did the percentages, it was second.

Summary Statement
My project is to determine whether or not a teen is stressed mostly because of friends and family.

Help Received
Mother took me to library to survey people.

CALIFORNIA STATE SCIENCE FAIR
2003 PROJECT SUMMARY

Name(s)
Olivia L. Del Gavio-Kusich

Project Number
J1705

Project Title
Can Adults Pass a Standard 7th Grade Science Test?

Abstract

Objectives/Goals
The object of this project was to determine the level of adult understanding of basic science concepts.

Methods/Materials
I went online and searched for a 7th grade standard science test. I found a sample from the Illinois Standard Achievement Test (ISAT). The next step was to shorten it from 40 questions to 22 plus 3 background questions, because I knew people would not want to take too much time to take the test and I didn't want anyone rushing through it (I thought that might change the results). I reviewed the Cartoon Guide to Statistics, and decided that 100 subjects should be a meaningful enough sample size to get an accurate representation of the general public. I made a first attempt at testing people, but it was a failure because I could only get 5 people to take the test after 3 hours. From this I could conclude that the test needed to be shortened to only 10 questions.

I shortened the test, and was able to gather 100 completed tests. I sorted them by score, tallied them for the background questions, and noted each test taker's performance on the planet question and the Stooges question. These questions were added to see if people knew more about trivia than scientific facts. The Stooges question was:"Name the three Stooges" and the planets question was:"name the three planets closest to the sun. The data was input into Microsoft Excel. I tabulated the results. I assigned a pass/fail standard based upon what is done by most of my teachers, a straight percentage based upon the number of answers correct. For example, 70% and higher equals C- and higher. I considered C- and above to be passing, and below C- to be failing, because I cannot graduate from my class without at least a C- average.

Results
The final results were as expected in my hypothesis, not very good. By looking at my results, I could see that the most educated people did the best. From this I can assume, because the test questions were based mostly on logic, and not a book learning, that the better the education a person has, the more likely they are to think logically.

Conclusions/Discussion
My hypothesis, unfortunately, was correct. I found that only 62% of those tested could pass this test. However, because my data over-represented college graduates, in relation to the national average, I would expect that a larger sample from a wider area would result in a lower pass rate than what I observed.

Summary Statement
Adults did poorly on a Standard 7th Grade Science Test.

Help Received
Thank you to my parents, all those who were tested, and the stores who let me give the test in front of their places of business.

CALIFORNIA STATE SCIENCE FAIR
2003 PROJECT SUMMARY

Name(s)
Jeremy S. Detgen

Project Number
J1706

Project Title
Propaganda: Are You Deceived?

Abstract

Objectives/Goals
The purpose of this project is to see what the greatest factor is in how susceptible an average person is to propaganda in today's society.

Methods/Materials
The experiment was setting up a table outside of Vons, and giving people a statement of Propaganda. Then the people would be given a small survey determining whether or not they were deceived by propaganda.

Results
After the experiment was finished it was determined that age and gender had the biggest factor in how susceptible a person is to propaganda. Education also had a factor, but not as big.

Conclusions/Discussion
In the end it was proven that the hypothesis was rejected, education being a lesser factor in susceptibility. This shows that people should be better educated about propaganda and how it is used, to make the difference between educated, and uneducated persons larger.

Summary Statement
To determine what the greatest factor in a persons susceptibility to propaganda is.

Help Received

CALIFORNIA STATE SCIENCE FAIR
2003 PROJECT SUMMARY

Name(s)
James A. Doherty

Project Number
J1707

Project Title
Evolution of Friendship Groups in the Fourth through Seventh Grades

Abstract

Objectives/Goals
How do freiendhips change as the students get older? Students, as they get older, will develop more people skills. The students who were once outsiders might start to develop friendships with the members of established friendship groups. These friendhsip groups might get more "open" and friendships among the groups will start to overlap.

Methods/Materials
I distributed a survey sheet to the 4th through 7th grades along with a class roster of the 4th through 7th grades and asked students to identify who their friends were. I analyzed these results on an Excel spreadsheet using graphs and friendship group detection statistics susch as multi-dimesional scaling.

Results
The results showed that in the 4th grade there are more isolates (23%) than in the 7th grade (15%). The 7th grade has more liaisons (11%) than in the 4th grade (6%). These differences are not statistically significant (Z-Test, $p>.10$). In the 7th grade the friendship groups were clustered more than in any other grade. Also, in the 7th grade the friendship groups overlap more than in any other grade.

Conclusions/Discussion
My results partly support my hypothesis because the friendship groups did get more open as the students got older. However I did not accept that there were fewer friendship groups as the students got older. This project can help us to determine how friendships and friendship groups change throughout the grades. That is important because people develop skills on how to make friends at an early age. It is also important because it helps us understand how these skills change.

Summary Statement
My project examines how the friendships in the fourth through seventh grades change.

Help Received
my mom, Ms. Beckett, my dad, stepmom, John Gorman, Dr. Ghoneum

CALIFORNIA STATE SCIENCE FAIR
2003 PROJECT SUMMARY

Name(s)
Robert A.B. Giles

Project Number
J1708

Project Title
Seeing Is Believing... Or Is It?

Abstract

Objectives/Goals
To determine whether eyewitness reports are reliable enough to be used as substantial evidence in criminal convictions, by examining whether gender, distance from subject, and delay in recollection time affect the accuracy of reporting.

Methods/Materials
A human subject was dressed in brightly-colored clothing and sent into a communications class to briefly interact with the lecturing professor, in full view of all students in the class. The students were then given sealed envelopes containing surveys regarding the appearance of the subject. Half the class were instructed to open and complete the survey the same day, and the other half were to complete it the next day and return it to the professor. The surveys were then analyzed and graded for accuracy.

Results
Overall, females were 11.1% more accurate than males. Students sitting in the front third of the lecture theater were 9.3% more accurate than students sitting in the back third. Students that completed the survey on the same day were 5.5% more accurate than those that completed the survey on the next day.

Conclusions/Discussion
Females are likely to be more accurate eyewitnesses than males. The closer an eyewitness is to an event, the more accurate the report is likely to be. The sooner an eyewitness recalls an event from their memory, the more accurate it is likely to be. On average, eyewitness reports are less than 50% accurate. My project has shown that eyewitness reports alone, are certainly not accurate enough to be used as substantial evidence in criminal convictions.

Summary Statement
This project examines the accuracy of eyewitness reporting by varying gender, distance from subject, and time of recollection.

Help Received
Mother was subject (wearing brightly-colored clothes); Father was professor of communications class.

CALIFORNIA STATE SCIENCE FAIR
2003 PROJECT SUMMARY

Name(s)
Daryl A. Hawkes

Project Number
J1709

Project Title
Health Wars: Are Incarcerated Students Healthy?

Abstract

Objectives/Goals
I wanted to find out if incarcerated students were as healthy as non-incarcerated students. My hypothesis was that students in jail would be healthier because of the strictness of the teachers and probation staff at Juvenile Hall.

Methods/Materials
I started by writing my questions. Then I gave a teacher at a public high school 150 white copies of the questionnaire (the control group). I also gave 150 blue surveys to a teacher at County Juvenile Hall. As the surveys came back, I tallied each question on a sheet. Then I converted the answers to percentages and made graphs for each question. To confirm my results, I repeated the process when my project was recommended for the Greater San Diego Science Fair. Now I am working on a statistical analysis of my data for the State Science Fair.

Results
From the charts and graphs in my first survey, I concluded that my hypothesis was wrong. Students in regular high school were slightly healthier than incarcerated students. The smoking, drinking and drugs use charts showed that students in public school had better health habits. The incarcerated students reported feeling less healthy than the control group.

The second survey confirmed most of my results. The rates of smoking, drinking and drug use remained very high in the incarcerated group. They also again reported feeling less healthy. A new question about sleeping habits also indicated that they were more likely to sleep more or less than normal (defined as 7-9 hours).

However, in the second survey the actual number of days they reported being sick was slightly less than students in regular public schools. Although the numbers only changed slightly, this was the opposite result from my first survey. I am now trying to understand why this answer was different.

Conclusions/Discussion
I am currently analyzing my data with the help of a statistics instructor, and I hope to have a clearer idea of what my survey means when that is completed. I think some of my data is very good. I also learned that health is more complex than I realized. I think my project's results are important in understanding health issues for children that are involved in the court schools. They may need more attention to health issues than students at regular schools.

Summary Statement
My project compares the health of students that are incarcerated to students in regular school.

Help Received
Mother helped typed and taught me how to use a spreadsheet. Several teachers distributed the surveys for me. Roger Jaffe at Patrick Henry High School and Maria Bevilacqua at San Diego State University are helping me with a statistical analysis.

CALIFORNIA STATE SCIENCE FAIR
2003 PROJECT SUMMARY

Name(s)
Shelly A. Holder

Project Number
J1710

Project Title
A-maize-ing Flotation

Abstract

Objectives/Goals
Soil samples from the excavations at the Oasis of Mara were put through the flotation process to determine whether the northern side of the oasis, during occupation by the Serrano and Vanyume Indians, was agriculturally dominant over the southern side.

Methods/Materials
Methods: I processed the 88 soil samples through the flotation tank to separate the light fraction (botanical and organic material)from heavy fraction (rock)and soil. I then visally analyzed and weighed each sample so I could compare the two sides of the Oasis of Mara.
Materials: I used a flotation tank (made from 15- or 55-gallon drums & PVC pipe), metric scale, paint strainers, dissecting microscope, microscopic camera and acid free bags.

Results
I found botanical materials in every sample. However, the weight of the botanical materials was more substantial in the samples taken from the north side of the datum line. The samples from the south side of the datum had more weight in the recovered materials.

Conclusions/Discussion
I was not able to prove that the botanical materials were of an agricultural nature because to do so I would have to identify each plant piece using a high-powered electron microscope.

Summary Statement
The flotation process was used to separate out botanical materials so they could be analyzed and compared based on the sample's location.

Help Received
My mother helped type the project and printed photos. My father took pictures and built the tanks. Prof. Richard Cerreto allowed use of field material from the Oasis of Mara.

CALIFORNIA STATE SCIENCE FAIR
2003 PROJECT SUMMARY

Name(s)
Kevin G. Jones

Project Number
J1711

Project Title
Battle of the Beverage

Abstract

Objectives/Goals
The "Battle of the Beverage" was conducted to see if product packaging influenced a consumer's purchase of colas. I was trying to prove the hypothesis that product packaging influences a consumer less if they drink a large amount of cola every week.

Methods/Materials
I conducted a series of three taste tests of colas on 95 subjects, after each of them had filled a questionnaire. The first was a blind taste test. The second test used labels that I made myself, put on three cola bottles. One label had a negative connotation, one had a neutral connotation, and the third was a positive logo. Based on the subject's number-one choice of cola in the blind taste test, I served the next colas, in a special order. Their first choice of cola came from a bottle with the negative label, their second choice had the neutral label, and their third choice had the positive label. If the subject did not choose the negative label (their first choice in the blind taste test) as their favorite in the substitute label test, the label had swayed their opinion. If they chose the negative label as their number one choice, they were not swayed. On the third test, the actual label test, I used the real product labels of Coca-Cola, Pepsi, and A+ cola. Once again, if the subject did not have the same number one choice as in their blind taste test, then the real label had swayed them.

Results
After conducting the tests I found that Coca-Cola received 47% of the votes, being the favorite, in the blind taste test. 42.1% of the subjects did not choose the same cola on the substitute label test as they had during the blind taste test, due to the influence of packaging. On average, this 42.1% drank more cola than the 57.9% of subjects whose preferences were not swayed by the substitute packaging. The data showed that 48 of the 95 subjects did not choose the same cola on the blind taste test as in the actual label test (where I used the actual Coke, Pepsi and A+ labels). This proves that the actual product labels swayed 50.5% of the subjects while they did not sway 49.5% of the subjects.

Conclusions/Discussion
Packaging does affect a consumer's cola preference. Though my hypothesis may not have been proven, significant amounts of people were swayed by the substitute and actual labels.

Summary Statement
I conducted a series of taste tests to prove that packaging influences a consumer's purchase choice.

Help Received
My dad helped me analyze the data, my mom bought all of the supplies

CALIFORNIA STATE SCIENCE FAIR
2003 PROJECT SUMMARY

Name(s)
Edward B. Kang

Project Number
J1712

Project Title
Irrelevant Quotient

Abstract

Objectives/Goals
Who is more likely to get the better grade? Do students with highet IQ generally perform better in academic settings? Which factor or factors determine who we will do in school? Hypothesis:Learning theorists have proposed that memory is the most valid indicator of one's intelligence. Studies have shown that intelligence is a significant correlate of acdemic achievement. However, it is also common knowledge that the amount of time one puts into his or her studies is also an important factor in determining how successful one is academically. Therefore, I hypothesize that althoguth IQ is importnat facotr, memroy capacity sets the limits to one's range of schol performance and study-tiome determines how well one will perform with those limits.

Methods/Materials
Procedure:1)Devise an IQ test to specifically measure attention/immediate memeroy and executive functiong. 2)Standardize the attention and the executive functioning subtest 3)Select subject population 4)Send consent forms to subjects' legal guardian 5)Make and send out survey to subjects 6)Administer IQ exam to all subjects 7)Translate scores into standardized, scaled scores for analysis and translation 8)Compare IQ scores, GPA, and Hours Spent Studying in a corelation analysis 9)Graph and chart findings Materials:IQ Test, Stdunt's transcript, survey, stopwatch, and calculator

Results
I found that there were some significant correlation between GPA and IQ and Hours Studying in the making. Both IQ had Hours studying seemed to have a positive correlation with school performance. However, I also noticed during the process taht there were always exceptions. Some individuals with high intelligence ahd low grades and other who didn't study much at all, maintained a high GPA.

Conclusions/Discussion
Both tme and IQ had a positive correlation with GPA. Time, however, seemed to have a stronger correlation. This result suggests that time spent studying is more important than intelligence in academic achievement. However, I also did a cross comparsison between IQ and time. What I learned from this analysis was that subjects with higher IQs generally study for more hours as well. This finding in some ways confounds my experiment. I cannot conclude that time is a stronger correlation than IQ, because the subjects in my study usually had a higher IQ. Studying time is a little more predictive of how well he will do in school.

Summary Statement
My project involvesn the discovery of correlation between IQ, time spent studying, and GPA.

Help Received
Mother helped me with the purchasing of materials.

CALIFORNIA STATE SCIENCE FAIR
2003 PROJECT SUMMARY

Name(s)
Kieran M. Kelly

Project Number
J1713

Project Title
Ignorance Is Bliss: Fact or Oxymoron?

Abstract

Objectives/Goals
This project set out to quantify the knowledge of a sample of middle and high school students in three areas: sports, entertainment, and politics.

Methods/Materials
A questionnaire, with ten questions for each category, was distributed to boys and girls from grades 8, 10, and 12. For each gender-grade group, 29-50 students volunteered to participate in the survey. The data were analyzed with Excel and Sigma Plot.

Results
There was a statistically significant gender difference in the sports category. Males outscored females in all grades. For entertainment, there was no difference between male and female students, except for eight grade, where females performed better. For the politics category, there was no significant difference between male and females students in all three grades. Overall, student performance was best in entertainment, followed by sports, and politics.

Conclusions/Discussion
Most of those who were surveyed appear to be reasonably well informed about entertainment and sports, but are poorly informed about politics. This raises concern because teenagers and young adults may have a very poor understanding of events that can affect them in significant ways (e.g., taxes, new laws, wars). A poor understanding of politics may be a contributing factor to the poor turnout in local, state, and general elections.

Summary Statement
My project assesses the relative knowledge of politics, sports, and entertainment in middle and high school students.

Help Received
Prof. David Provost, Mr. Matt Karsevar, and my father advised on survey and analysis methods. My mother reviewed my wirting and helped assemble my board.

CALIFORNIA STATE SCIENCE FAIR
2003 PROJECT SUMMARY

Name(s)
Megan E. Klucken

Project Number
J1714

Project Title
Does Gender Affect Short-Term Memory?

Abstract

Objectives/Goals
My grandpa had Alzheimer's disease and could remember things on from his childhood. His short-term memory was totally gone. The lady who lived across the hall of the nursing home had the same problem. I wanted to know if gender really did affect your short-term memory. I achieved my goal by conducting a survey and learning that the objects you would remember on the board were related to your gender.

Methods/Materials
Paper(pink,blue), Log Book, Computer, Printer, Paper Clips, Folders, Boxes, Binders, Dividers, Hole Puncher, Copier, Students, Car, and Calculator.

Results
Out of 1,465 surveys 72% of the male subjects remembered mostly the objects on the poster board related to their gender. Only 32% of females remembered objects on the poster board related to their gender. Also, males and females remembered the same amount of objects on the poster board seven.

Conclusions/Discussion
Gender played a very important role on what children remembered. While I was doing this project I discovered that mostly every school had the same results. Males were much more dominant in remembering the objects related to their gender.

Summary Statement
It shows that gender affects what objects you will remember on the poster board.

Help Received
none

CALIFORNIA STATE SCIENCE FAIR
2003 PROJECT SUMMARY

Name(s)
Danielle M. Manghera

Project Number
J1715

Project Title
Men or Women: Who Has a Faster Pace of Life?

Abstract

Objectives/Goals
My objective was to determine whether men or women display a faster pace of life by measuring time taken to conduct daily activities.

Methods/Materials
I conducted three tests of time to determine pace of life for both men and women. I chose three activities that all men and women perform daily and timed how long each subject took to complete the task. To come to a clear conclusion, I tested 60 men and 60 women in each of the three time measures and found averages for both groups before comparing the overall pace of life. My three measures of time were: (1) walking 50 feet down an enclosed mall; (2) driving 0.2 miles down a street; (3) leaving a parking lot after grocery shopping.

Results
I concluded from my experiment that for the first two tests, walking and driving, women had a faster pace of life. In the walking test, women had an overall average of 13.2992 seconds. The average for men was 13.917 seconds. The driving test had the women's average 22.0203 seconds and men's average as 22.0340 seconds. The leaving test had the most significant difference between genders. The men's average in this test was 23.9583 seconds and women's was 30.2223 seconds.

Conclusions/Discussion
By analyzing my results, I found that my hypothesis was incorrect. Even though women had a faster time in the walking and driving test, it was only by an insignificant amount. After conducting the driving test, however, I realized that the external variable of a speed limit directly affected each subject's natural pace so I can not draw any conclusion from it. The test that showed the most significance was the leaving test. The range between genders was 6.264 seconds. Men displayed a much faster pace of life in this experiment, warranting further research comparing the two genders and how they manage their life on a daily basis.

Summary Statement
My experiment attempted to determine if there is a difference in pace of life, or personal sense of time, between men and women.

Help Received
My mother and my sister helped time the cars driving and helped identify subjects for me to test in the walking and leaving test. My mother helped type pieces of the report and cut the tag board since it is thick and can be dangerous.

CALIFORNIA STATE SCIENCE FAIR
2003 PROJECT SUMMARY

Name(s)
Greg A. Passani

Project Number
J1716

Project Title
Biometrics: Facial Recognition

Abstract

Objectives/Goals
The project objective is to determine whether it is easier to recognize a familiar face by looking at a photo showing the top half of the face versus the bottom half.

Methods/Materials
Parental permission was obtained. I took facial photographs of twenty-one students in my seventh grade class with a digital camera. I downloaded the data into a computer and used photo editing software to crop each photo into a top half and a bottom half. These images were sized, labeled, and organized into two sheets. Twenty-two students were asked to match each image to the subject's name.

Results
The students could identify the top half of the faces ninety-eight percent of the time, but the bottom half only ninety percent of the time.

Conclusions/Discussion
It is easier to recognize someone by looking at a photo of the top half of their face rather than the bottom half.

Summary Statement
The process of facial recognition was investigated by comparing the ability of students to correctly identify their classmates by looking at photos showing only the top half or bottom half of faces.

Help Received
My aunt contributed a digital camera. Mrs. Bown-Crawford recommended the photo editing software. My sister Celeste helped me install the program. My parents taught me how to make folders and organize files on the computer. They proofread some of my work.

CALIFORNIA STATE SCIENCE FAIR
2003 PROJECT SUMMARY

Name(s)
Elizabeth S. Pierson

Project Number
J1717

Project Title
Why Thank You

Abstract

Objectives/Goals
The goal of this project is to discover if adults respond politely more often to children or to adults. I believe the adults will respond politely more often to children.

Methods/Materials
A child (me) casually opened doors for twenty adults (ten at each of two locations) while the adult helper (my mom) recorded the responses of the adults who had the door opened for them by the child. The adult helper also opened doors for twenty adults (ten at each of two locations) while the child recorded the responses of the adults who had the door opened for them by the adult helper.

Results
Both the child and the adult received eighteen polite responses and two impolite responses.

Conclusions/Discussion
My hypothesis was incorrect. The child and the adult received the same amount of polite responses concluding that adults don't care who does the considerate deed, they are just happy when someone does something kind for them.

Summary Statement
My Mom and I both opened doors for adults to see if adults were polite more often to children or to adults.

Help Received
Mother helped by being the adult door opener and my brother helped by talking with my mom and I while we opened doors so it looked more casual.

CALIFORNIA STATE SCIENCE FAIR
2003 PROJECT SUMMARY

Name(s)
Salina M. Rodriguez

Project Number
J1718

Project Title
Sick of Reading

Abstract

Objectives/Goals
Do magazines in doctor's offices test positive for bacteria growth? If people are educated that there is bacteria growth on magazines and books, will they stop reading them?

Methods/Materials
Methods:
1. Obtain all necessary supplies to grow bacteria. Make agar in petri dishes before going to doctor's offices. 2. Swab magazines in doctors offices. 3. Leave in dark warm environment. 4. Check for bacteria growth. 5. Distribute surveys. 6. Record results.

Materials:
Unflavored gelatin and bulion (for agar). Petri dishes. Q-tips. Bottled water. Gloves. Magazines and books from doctor's offices. Microscope and slides. Stain. Surveys.

Results
Most people were unaware of bacteria on magazines and books found in doctor's offices. They will not read these materials anymore, and either bring their own reading material or watch TV if provided.

Conclusions/Discussion
Magazines and books found in doctors offices test positive for bacteria growth. When patients, doctors and nurses were surveyed, they understood that when sick people touch these magazines and books, then leave them for another patient, they can infect that other person.

Summary Statement
Touching magazines and books in doctor's offices can be harmful to your health.

Help Received
My mother helped me by driving me to doctor's offices. She also helped me by setting up the digital microscope. She drove me around to get the surveys passed out too. Dr. Larson (LLUMC) asked some collegues to help fill out surveys.

CALIFORNIA STATE SCIENCE FAIR
2003 PROJECT SUMMARY

Name(s)
Sara A. Sholes

Project Number
J1719

Project Title
Who Has Hue Acuity?

Abstract

Objectives/Goals
The objective of my project is to see if normal(not colorblind) people's color acuity(how well you can deferenciate between similar hues) varies from person to person, and if age, gender, and part of the spectrum affect it. I expected that age wouldn't affect it, females would do better than males, and that people would have the worst color acuity in the green part of the spectrum.

Methods/Materials
I designed a series of sixty tests that test hue acuity on the computer. The test taker has to decide out of nine very similar hues, which one matched a test patch. One of them does match exactly. I had about thirty people take the test. I then checked their errors(a correct answer is a 0, one to the right,1,one to the left,-1,so on). I compared the spread of their errors, according to age, gender, and part of the spectrum.

Results
Males overall did not do worse than females, they did about the same. Adults tended to do better than children. People did not do the worst in the green part of the spectrum; they did the worst in the blue. I tested color blind people, too. They had the same results, just did worse overall.

Conclusions/Discussion
I think that adults tended to do better than children because they spent more time and concentrated more on the test. Males and females probably did about the same because if you're not color deficient, then you should be able to descriminate between colors just as well as everyone else. Mabey everybody is the weakest in descriminating between the blues, which would explain why everybody did the worst on the blue tests.

Summary Statement
My project is about if age, gender, and part of the spectrum affect hue acuity.

Help Received
Dad helped with board; Mr. Steely let me test during class; testers took the test.

CALIFORNIA STATE SCIENCE FAIR
2003 PROJECT SUMMARY

Name(s)
Christina Simpson; Kaitlynn Yandell

Project Number
J1720

Project Title
"1, 2, 3 As Easy As A, B, C" Myth or Fact: Does Birth Order Affect Your Grade Point Average?

Abstract

Objectives/Goals
To find out if birth order affects one's G.P.A.

Methods/Materials
Experimental Method:

1. Plan experiment, design questionnaire, and receive approval.
2. Distribute and collect surveys.
3. Input and analyze data.
4. Write report.

Materials:

Paper, Computer, Microsoft PowerPoint, SPSS, Microsoft Excel, Journal, Pen, Pencil, Copier, Printer, and Respondents (122 6th grade students from Central Middle School in San Carlos, California.)

Results
Our hypothesis was correct because the Oldest children achieved the highest G.P.A. (3.54), which exceeded the expected 3.3 G.P.A.
The Youngest children had the lowest G.P.A. of 3.22.
Overall, Middle and Only children in their families had G.P.A.s slightly lower than the Oldest children.
The Females achieved a 3.56 G.P.A. while Males had a 3.27 G.P.A.
The 11-Year Olds had a slightly higher G.P.A. of 3.42 over a 3.33 for 12-Year Olds.
Math, History, and English (0.39, 0.36, and 0.32, respectively) had the greatest difference between Oldest and Youngest children, where Science (0.15) had only a slight difference.

Conclusions/Discussion
The Oldest children in 6th grade at Central Middle School in San Carlos, California had the highest G.P.A., which exceeded our hypothesis of 3.3.
Birth Order affected the Youngest's G.P.A. the most because some of the Youngest children earned D's instead of A's or B's.

Summary Statement
We wanted to determine if birth order affects one's grade point average.

Help Received
Our parents taught us how to use SPSS, Microsoft PowerPoint and Excel, and helped us find our resources. Dan Raffa, science teacher, helped us develop our plan.

CALIFORNIA STATE SCIENCE FAIR
2003 PROJECT SUMMARY

Name(s)
Stacy N. Smith

Project Number
J1721

Project Title
Add That Extra Stamp? How Accurate Is the Post Office in Weighing Mail?

Abstract

Objectives/Goals
I wonder how accurate the Post Office is in weighing mail. I will send out about 75 letters weighing from 1.5 ounces to 3 ounces with only one 37 cent stamp each. If the Post Office weighing machines work right, all the letters I send will be returned for lack of postage. I believe that about 90% of the over weight letters I send will be returned. I expect about 10% of the letters I send out will get through because I doubt the machines will work perfectly.

Methods/Materials
I used the Post Office weight scales to find out how many sheets of paper plus an envelope it took to make up different weight letters ranging from 1.5 to 3.0 ounces. I wrote a note to include with the letters to explain my experiment, asking them to tell me if they had to pay postage to receive the letter. I used only one 37 cent stamp on each envelope. I sent out a total of 74 different envelopes on different days and locations throughout the city. I sent only one per location per day. I kept a log of the letters sent along with the results. I also called each person I sent a letter to, checking to see if they were asked to pay any lack of postage.

Results
I sent out a total of 74 "short postage" envelopes. Three were returned because of the wrong address. Four were returned for lack of postage; two 2.25oz and two 2.75oz Three arrived with postage due; one 1.75oz, one 2.25oz and one 2.75oz.

64 envelopes were delivered successfully out of a possible 71 deliverable letters.
- 9.9% of the over weight letters were caught by the Post Office
- 90.1% of the over weight letters were delivered

Conclusions/Discussion
I am very surprised at the results of my experiment. I've learned that the Post Office is not accurate in weighing mail at all. I could not see any special pattern to why the few were caught over the others. I think that because the Post Office handles so many letters that they are partially hoping everyone will be honest when they use stamps. The U.S. Postal Consumer Affairs person suggested that the mail carriers may have paid the difference without charging the customers since many carriers know their clients well. I wonder...

Summary Statement
By sending out letters ranging from 1.5 to 3.0 ounces with only one 37 cent stamp, I will find out how accurate the Post Office is in weighing the mail.

Help Received
My dad helped me with the graph

CALIFORNIA STATE SCIENCE FAIR
2003 PROJECT SUMMARY

Name(s)
Caroline B. St. Louis

Project Number
J1722

Project Title
Pitch'ure Perfect

Abstract

Objectives/Goals
I wanted to find out what percentage of the population could sing on pitch, and if it would be dependent on the age, sex or musical background of the subjects.

Methods/Materials
Materials: Seiko Chromatic Tuner, Tape recording of notes (C,B,G), Questionnaire.
Procedure: The subject completed a questionnaire which included: age, sex, if they have taken music lessons, and if they think that they will sing on pitch. I played a recording of three notes (C,B,G); the subject practiced singing each note. I played the notes a second time; the subject sang each note while I determined with my chromatic tuner if the subject was on pitch or not. [The tuner displays the frequency (pitch) of the note being sung and shows the deviation direction (flat or sharp) if the note is sung off pitch] I logged if the subject was on pitch, flat or sharp on each note. I asked the subject if they thought that they had sung on pitch.

Results
I tested 100 subjects. Only 19 subjects (19%) sang on pitch, defined as singing all three notes correctly. I tested 49 kids <18 yo and 51 adults. 11 kids (22%) were on pitch and 8 adults (16%) were on pitch. 14/58 females (24%) were on pitch and 5/42 males (12%) were on pitch. 36% of males sang all three notes incorrectly as opposed to 17% of females. Of 77 subjects who had a musical background (voice or music lessons or having sung in a choir), only 18 (23%) were on pitch [little different from the total subject pool]. Although 95% of the subjects who sang on pitch had had a musical background, 52% of the subjects who sang all three notes incorrectly had also had a musical background. 13 of the subjects (68%) who sang on pitch had predicted that they would do so before testing. Almost all (96%) of the subjects who sang all three notes incorrectly had predicted that they would be off pitch and 92% realized after the test that they had sung off pitch. When a subject sang a note off pitch, 72% of the time they sang the note flat - 28% of the time sharp.

Conclusions/Discussion
I proved that only 19% of the population could sing on pitch.
Kids are more likely to be on pitch than adults and females are twice as likely to be on pitch as males. Music lessons did not help people with their pitch. When a person sings a note off pitch, they are more likely to be flat than sharp. Most people can predict whether they will sing on pitch or not.

Summary Statement
I did an experiment that showed that only 19% of 100 subjects tested were able to sing on pitch; kids and females have better pitch than adults and males; having a musical background did not affect the the ability to sing on pitch.

Help Received
None

CALIFORNIA STATE SCIENCE FAIR
2003 PROJECT SUMMARY

Name(s)
Lisa M. Tachiki

Project Number
J1723

Project Title
The Cell Phone Gotcha! The Effect of Cell Phones on Young Teenagers

Abstract

Objectives/Goals
My objective was to learn if magnetic field effects, produced by cell phones, causes stressful disturbances in young teenagers.

Methods/Materials
The materials are a Samsung R225m cell phone, Omron HEM-712c Automatic Inflation Blood Pressure Monitor, a questionnaire to gather facts, and 35 females and 27 males test subjects between the ages of 10-15.
Blood pressure of the males and females was measured, then five minutes and ten minutes after exposure to a cell phone. 30 females and 20 males were tested with a cell phone on, and 10 females and 10 males were tested with a cell phone off. Each baseline blood pressure was the control for each individual.

Results
Blood pressure was analyzed by increases or decreases for each individual by using the Fisher's Exact Test. With the cell phone on, the two-tailed P value showed an extremely significant increase with female test subjects ($P=0.0007$ in the systolic and $P<0.0001$ in the diastolic)and an extremely significant decrease in the male test subjects ($P=0.0004$ in the systolic and $P<0.0001$ in the diastolic). With the cell phone off, decreases in blood pressure occurred in both the male and females. This decrease was extremely significant in the females ($P=0.0011$ in the systolic and $P<0.0001$ in the diastolic), but not with the males ($P=0.0230$ in the systolic and $P=0.6563$ in the diastolic).

Conclusions/Discussion
My hypothesis was supported by the female test subjects. My data concludes that stressful distrubances occur in young female teenagers when exposed to cell phones, as measured by an increase in blood pressure.

Summary Statement
My project is about the effect of cell phones on young teenagers, which interestingly resulted in finding that stressful disturbances occured in young females.

Help Received
Mr. Hobbs, my teacher, taught me how to analyze statistical tests. My mom drove me all around Orange County to test subjects.

CALIFORNIA STATE SCIENCE FAIR
2003 PROJECT SUMMARY

Name(s)
Alexandra C. Tilbury

Project Number
J1724

Project Title
The Case of Mistaken Identity

Abstract

Objectives/Goals
The object of this project is to find the most accurate type of criminal identification lineup out of four total lineups.

Methods/Materials
I wrote a script for my crime video. Then I gathered the actors who would participate in my crime video. The crime video was filmed along with the four lineups. NOW ITS TESTING TIME! The test subjects consisted of: one seventh grade class and three eighth grade classes from Heritage Junior High. Each class viewed the same crime video. Two days later, they were called into the "Sheriff's Department". I passed out a 'Mistaken Identification' form to each student which would contain their vote on the real criminal. Each class viewed one of the four lineups which were: simultaneous, simultaneous/field, seequential, and sequential/field. Each student voted on who they thought the criminal was. I later tallied up the results and came to my conclusion.

Results
The simultaneous/field lineup, viewing the 6 suspects at the same time at the scene of the crime, was the most accurate lineup with a 66.66% accuracy rate. The simultaneous lineup, viewing all 6 suspects at the same at the Sheriff's Department, produced a low accuracy rate of 16.66%. The sequential lineup, viewing each of the 6 suspects individually, gave a 27.27% accuracy rate. The last lineup, sequential/field, viewing each of the 6 suspects indiviually at the scene of ths crime, produced a 23.8% accuracy rate.

Conclusions/Discussion
The simultaneous /field lineup was the most accurate in identifying the correct suspect as the perpetrator with a 66.66% accuracy rate. In contrast, the simultaneous lineup, which was viewed at the 'Sheriff's Department', produced a 16.66% rate of accuracy. Out of the four lineups, this was the least accurate. The lineup with the second highest accuracy rate was the sequential lineup, giving it a 27.27% rate of accuracy. The third most accurate lineup is the sequential/field lineup producing a 23.8% accuracy rate. The fourth place lineup, simultaneous lineup, viewing all 6 suspects at the same time at the 'Sheriff's Department', gave a 16.66% accuracy rate. This equals an 84.34% MISTAKEN IDENTITY RATE (100%-16.66%=84.34%)! If the simultaneous lineup is the most commonly used lineup in our criminal system, could 84.34% of criminals in prison, identified in a simultaneous lineup, be innocent?

Summary Statement
My project's purpo

Help Received

CALIFORNIA STATE SCIENCE FAIR
2003 PROJECT SUMMARY

Name(s)
Emma F. Townsend-Merino

Project Number
J1725

Project Title
The Effect of Eyeglasses on Perceived Intelligence

Abstract

Objectives/Goals
The purpose of this study is to determine whether the presence of eyeglasses will influence the perceived intelligence of an individual.

Methods/Materials
Ten people (men, women, boys, and girls) were photographed both with and without eyeglasses. The photographs were arranged in packets of 10 so there would not be two pictures of the same person in a packet. Two hundred participants looked at one packet each and rated each person in the photograph on a scale of 1 to 7 for intelligence, friendliness, helpfulness, shyness, and assertiveness (this way the subject would not know that only the intelligence factor would be analyzed). The average intelligence ratings for those individuals wearing eyeglasses were compared to the ratings of intelligence of the same individuals not wearing eyeglasses.

Results
There was no difference in intelligence ratings of children compared to adults. There was no gender difference in intelligence ratings of women compared to men. There was a significant difference in intelligence ratings of individuals wearing eyeglasses compared to the same individuals without eyeglasses. Also, adult females and male children were rated as most intelligent throughout all pictures.

Conclusions/Discussion
The findings indicate that the stereotype that people with eyeglasses are smarter is a very strong belief in today's society. This can be applied to everyday life just by realizing that the majority of people believe that individuals with eyeglasses are rated as more intelligent than individuals without eyeglasses. When attending a job interview or a college admissions interview, people should consider wearing glasses. It was unexpected that adult females and male children were rated as more intelligent than female children and adult males.

Summary Statement
My project is about understanding whether people think individuals with eyeglasses appear more intelligent, and how this is influenced by gender and age.

Help Received
My Mother and Father helped me perform the data analysis using SPSS. I entered all the data and they helped with the analysis of the SPSS output.

CALIFORNIA STATE SCIENCE FAIR
2003 PROJECT SUMMARY

Name(s)
Daniel Y. Gorenberg

Project Number
J1799

Project Title
Who's to Blame?

Abstract

Objectives/Goals
To examine students are more likely to blame other people or try to shift responsibility of their actions on to someone or something else.

Methods/Materials
Procedures:
1.Find and gather five test-subjects into one room.
2.Explain to them that you are going to read them a multiple- choice story; they all have to decide on what path to take as a group, and that there will be a questionnaire at the end of the story.
3.Give them each a character (A, B, C, D, E)
4.Read the group the story.
5.After they lose, have them take the questionnaire interpersonally.
6.Escort all five test-subjects out of the room and find five different test subjects.
7.Repeat steps one through six until you have tested fifty subjects.
8.Record and graph all of your results.
Materials:
·Fifty test subjects (preferably sixth, seventh, and eight graders)
·One multiple choice story with three or more alternative endings and no good endings
·Fifty questionnaires (The questionnaire asks the subject their grade, gender, character, and who they think is most/least responsible for their group losing. One is the most responsible, and five is the least responsible)
·Five pencils and pens

Results
Individuals blamed others rather than themselves for their group losing. 74% of individuals tested blamed others while only 26% assumed blame.

Conclusions/Discussion
My hypothesis withstood successfully throughout my experiment. Thirty-seven out of the fifty students that I tested blamed one of their peers for their group losing. I noticed that most of the students didn't want to feel responsible for the choices that their group made.

Summary Statement
My project examined whether individuals blamed others or themselves for mistakes/choices.

Help Received
Guidance and constructive critcism by my science teacher, Ms. Terri Elkin and math teacher, Mr. David Klein