



**CALIFORNIA STATE SCIENCE FAIR
2007 PROJECT SUMMARY**

Name(s) Mia L. Alexander	Project Number J0301
Project Title "Four" Your Eyes Only: Does Wearing Eyeglasses Make You Look Smarter?	
Abstract Objectives/Goals The goal of this behavioral science experiment is to determine whether people who wear eyeglasses are perceived by others to be more intelligent than people who do not wear glasses. Methods/Materials Subjects were asked to complete a written survey which contained photos of adults wearing glasses and adults who were not wearing glasses. The survey contained five groups of photographed subjects with a variety of traits. Some of the traits were characteristic of intelligence and others were not. Each set of four photos contained only one person wearing eye glasses and the other three without eye glasses. Results Results of the survey supported the hypothesis that persons who wear glasses are perceived as more intelligent than those who do not wear glasses. Of the ten traits associated with intelligence on the survey, seven of the traits were correlated to the photo of the person wearing glasses. Conclusions/Discussion Many studies have been done about first impressions. A person can form a first impression about another person's personality or skills based on how they are dressed, their hairstyles, their good-looks, their height, and even their weight. Short people are known to be paid less in jobs and receive fewer promotions than tall people. Obese people are perceived as lazy and are perceived as less competent than their thinner counterpart. This study found that people who wear glasses are perceived to be more intelligent than those who do not wear glasses. First impressions can also be influenced by eyeglasses that a person is wearing.	
Summary Statement This project is about whether people who wear eyeglasses are perceived as more intelligent than those who do not wear glasses.	
Help Received Father taught me how to build a spreadsheet. Mother helped me with the paper cutter.	



**CALIFORNIA STATE SCIENCE FAIR
2007 PROJECT SUMMARY**

Name(s) Sophie Ballard; Cori Bratby-Rudd	Project Number J0302
Project Title Think Fast	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals To discover which gender has better reflexes as they grow older.</p> <p>Methods/Materials 1. Put the test subject's hands in parallel, clapping position, 9.9 centimeters apart. 2. Place the ruler 9.9 centimeters above the test subject's hands. 3. Drop the ruler at an unappointed time between the test subject's hands (make sure to tell the subject to attempt to catch the ruler as fast as they can). 4. Record the level at which they caught it. 5. Repeat steps 1-4 two more times. 6. Average the data. Materials: Ruler, 30 test subjects.</p> <p>Results Young females have average reflexes of 9.37. Young males have only slightly slower hand-eye coordination with a mark of 9.43. Both middle-aged males and females had scores that were more advanced than young and seniors. Middle-aged males scored a low 6.18, while middle-aged females average was 8.20. 10.21 was the substandard total that the senior males attained. The senior females managed a typical score of 9.67. The averages show that the females' marks surpassed the males' marks in the young and senior categories. In the middle-aged category, the males did better than the females. The data shows that the females outshine the males in two out of the three categories.</p> <p>Conclusions/Discussion 1. Our results show females did better than males overall. Males exceeded females in the middle-aged group, but females surpassed males in the young and senior categories. This conclusion proves our hypothesis incorrect. We guessed that males would do better than females. 2. A pattern that we noticed was people who were more active scored better. Within each category the test subjects tended to have similar scores. We found another similarity: young people and seniors had scores in relatively the same range. Another pattern we noticed was, the longer you held the test subject in suspense, the worse their scores were. 3. We learned that when human development is at its peak, people have quicker reflexes. For instance, Middle-aged people are at their climax in reflexes, so they had the lowest (the lower their score is, the better their reflexes are) scores out of everyone. 4. One possible source of error was whether or not the test subject was in a standing or sitting position. Another one could have occurred if the test subject moved their hands after we measured the distance between them. Whether or not the test subject was physically active could greatly influence their average.</p>	
Summary Statement We tested people's voluntary reflexes and separated the data by gender and age.	
Help Received Step-Mother helped cut out title; All parents helped with carpooling; All parents listened to oral presentation; Mother helped with application to society; All parents critiqued our oral presentation and report;	



**CALIFORNIA STATE SCIENCE FAIR
2007 PROJECT SUMMARY**

Name(s) Caitlin M. Carey	Project Number J0303
Project Title Do People's Fears Change as They Get Older?	
Abstract Objectives/Goals To prove or disprove the hypothesis that age (and gender) do effect a person's fears. Methods/Materials The first step was to compile a list of commom fears and list them on a survey form. A section on the bottom of the survey asked the age group of the person filling out the survey. Also, the survey forms asked for the subject to check off their gender. 1200 surveys were created and then disributed at various locations around Orange County. Locations were chosen that would provide a cross section of age and gender. Those who took part were advised they could add any fear they had that was not listed. Finally, all the surveys were collected and the results were compiled by age and gender. Results The reslts of the surveys did not show that people were more, or less, afraid of things because of their age. The survey results also indicated that gender didn't have much of an impact on a person's fears either. Conclusions/Discussion The original hypothesis was that a person's age would have an effect on a their fears and phobia's. The results of the 1200 surveys did not support this belief. After speaking with many of the people who had completed the surveys, it was learned that past life events had more of an impact on a people's fear than age(or gender) did. A person would more likely have a fear of bee's becasue they had been stung before, rather than because they were young or old.	
Summary Statement This project was to show if a person's age(or gender) effected their fears or phobia's.	
Help Received Parents & siblings helped distribute, collect, and compile survey results.	



**CALIFORNIA STATE SCIENCE FAIR
2007 PROJECT SUMMARY**

Name(s) Kimberly E. Carson	Project Number J0304
Project Title Wrigley's Believe It or Not!	
Objectives/Goals The purpose of my science project is to find out if people can take math tests faster while chewing gum. I became interested in testing this project because my teacher hands out gum during STAR tests because she says it helps us concentrate better. I also did some research online that makes me think that people will take tests faster while chewing gum. Based on this background research and the fact that my teacher hands out gum during STAR testing, I think that the people will take the test faster while they are chewing gum.	
Abstract Methods/Materials The materials used in the design and testing of this project include: Wrigley's Double-mint gum; Willing subjects; Math test sheets; Pen; Stop-watch; Computer, paper. The steps of the procedure are: 1. Develop a simple math test (the nines multiplication table) sheet. On one side of the paper, the numbers were in order from 9x1 to 9x12. On the other side, the order was reversed. 2. Give a willing subject the math test and time them while they answer the questions on one side of the sheet. 3. Record the following information: name, time to complete test correctly, and whether they were chewing gum during the test or not. 4. After a short break, give the subject the test again. If they were chewing gum the first time, then this time they did it without gum. If they were not chewing gum the first time, then this time they were. 5. Record the data. 6. Repeat steps 2-5 with more subjects. 7. Enter the data into a spreadsheet program. 8. Analyze and graph the data.	
Results The results of my project indicate that chewing gum helps people concentrate better while taking a simple math test. 15 out of 23 people took a simple math test faster while they were chewing gum than when they were not chewing gum. I have proven my hypothesis (and my teacher) to be correct.	
Conclusions/Discussion My results indicate that chewing gum really does help people concentrate better. A majority of the people in my study completed a simple math test more quickly while chewing gum. My research suggests that this is because the act of chewing anything produces saliva, which triggers the release of insulin. The release of insulin leads to an increased heart rate and sends glucose and oxygen to our brain. The glucose and oxygen in our brain helps improve concentration, focus, and learning. That's why I'm chewing gum while I type this report!	
Summary Statement Does the act of chewing gum stimulate a physical response that enables a person to concentrate and focus better, particularly when taking a math test?	
Help Received Mom helped me learn the spreadsheet and graphing program, and helped me format my report. My classmates helped by giving me some of their recess time to be tested. Ms. West let us chew gum during STAR testing (which gave me the idea for this project).	



**CALIFORNIA STATE SCIENCE FAIR
2007 PROJECT SUMMARY**

Name(s) Benjamin R. Church	Project Number J0305
Project Title Lefties Do It Right	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals A reason I am doing this experiment is because left handed people have learned to adapt to right handed products, writing styles, and even their way of life. Most left handed people can do tasks with both sides, but right handed people can only do with the right hand because they didn't have to adapt to left handed appliances.</p> <p>Methods/Materials 15 Left handed students, 15 Right handed students. One Soccer Ball and a quarter. A slingshot, plastic tower and the rabbit. A camera with a view finder. A small box with coin. A computer to Graph the findings. Separate the left and right handed students into two lines. 1. Have all the students kick the soccer ball and record which foot they use on your graph. 2. Have the students step on the quarter and record which foot they use. Next to eye preference do the following.. 1. Have the entire group take a picture and record which eye they use. 2. Have the students use the slingshot figure to hit the rabbit and record which eye they leave open. To test ear preference do the following.. 1. Place the coin in the small box and have the student put one of their ears next to the box and record which ear they put up to the box. 2. The students are now to put an ear next to the wall and ask the students if they can hear a conversation taking place and record which ear they use. With all of your data recorded come to a conclusion.</p> <p>Results My data shows that my hypothesis was correct about the ambidexterity of the lefties. My three graphs show the results of the foot, eye, and ear dominance tilted to the left side on lefties and to the right side on the right handed.</p> <p>Conclusions/Discussion All in all my experiment was fun, as well as educational. I learned about left handed people and their achievements and struggles through history. My hypothesis was correct because lefties use left and right sided preference. Right handed people are mostly right sided because they are only use to using that side. I think that the lefties use both sides because they write with their left hands and probably do other activities with their right hand, foot ect. because the activity is made for a right handed person. Another reason, like I have said before, that most appliances are made for the right handed people, so lefties have to use both sides for necessity.</p>	
Summary Statement Lefties do it Right in ambidexterity, art, science and sports.	
Help Received Students, teacher and parents	



**CALIFORNIA STATE SCIENCE FAIR
2007 PROJECT SUMMARY**

Name(s) Rafael S. Cosman	Project Number J0306
Project Title Effects of Age and Gender on the Prisoner's Dilemma	
Abstract Objectives/Goals To study the effects of age and gender on choices in the Prisoner's Dilemma game. Methods/Materials 137 students (age 10-17) were offered candy rewards in a Prisoner's Dilemma-type game. 32 pre-adolescents (age 10-11) and 105 adolescents (age 12-17) were tested; this included 55 boys and 82 girls. Each subject could 'defect' (take a candy for him/herself) or 'cooperate' (allow the other player to take two candies). Subjects were not told the other player's choice, but they were told the other player's gender. Each subject's choice was used as the other player's choice in the next subject's game. Results were compiled in contingency tables, which were assessed with a chi-square test. Significance was determined at the 5% level. Results Pre-adolescents were slightly more likely than adolescents to defect (66% vs. 48%), but the result was not significant at the 5% level. Girls were slightly less likely to defect overall, but this effect was insignificant. Among adolescents, a significantly lower percentage of subjects defected when playing against girls than when playing against boys (38% vs. 59%, $p=.0265$). Conclusions/Discussion These results support the idea that adolescents of both genders think girls are more likely than boys to be generous to them. This idea is supported anecdotally by comments of several of the test subjects, who said they trusted girls more than boys. As a rule, people are more likely to be generous towards a person they believe will reciprocate the generosity. Possibly younger children are less concerned with these ideas of trust and reciprocity, and simply want to end up with more candy.	
Summary Statement In a Prisoner's Dilemma-type game in which 137 people participated, adolescents of both genders trusted girls more than boys.	
Help Received Mother helped type report and arrange posterboard; father helped type application.	



**CALIFORNIA STATE SCIENCE FAIR
2007 PROJECT SUMMARY**

Name(s) Michelle C. Desrosiers	Project Number J0307
Project Title What Are the Weakest Taste Thresholds for Sweet, Sour, and Salty Solutions?	
Objectives/Goals To find the weakest taste thresholds for sweet, sour, and salty solutions.	
Abstract	
Methods/Materials Salt(sodium chloride)-10 grams, Granulated Sugar(sucrose)-10 grams, Vinegar(acetic)-2 ml, Distilled water- approximately 800 ml, Stirring rod or spoon-1, Gram balance- 1, 100 ml graduated cylinder- 1, 10 ml graduated cylinder- 1, Cotton swabs- approximately 15, Paper cups- approximately 15, Paper towels- approximately 15	
Results Sugar Solution 10%= 0 people, 1%= 75 people, 0.1%= 22 people, 0.01%= 3 people Salt Solution 10%= 0 people, 1%= 2 people, 0.1%= 97 people, 0.01%= 1 person Vinegar Solution 10%= 0 people, 1%= 0 people, 0.1%= 57 people, 0.01%= 41 people, 0.001%= 2 people	
Conclusions/Discussion My findings from this science fair project have pointed to approval of my hypothesis. I hypothesized that my lowest taste threshold for the vinegar solution would be 0.01% and this was proven to be true. When I participated in the experiment I was able to detect the taste of the vinegar until I reached the 0.01% solution where I could no longer taste the vinegar. The lowest taste threshold documented was 0.001%, which was detected by two people. This shows me that only a very small percentage of people have this sensitive taste threshold.	
Summary Statement This project is about diluting three different types of solutions to measure the lowest taste thresholds detectable.	
Help Received Participants helped by tasting solutions, mother helped by purchasing supplies, and father helped with board construction.	



**CALIFORNIA STATE SCIENCE FAIR
2007 PROJECT SUMMARY**

Name(s) Lindsey C. Eskow	Project Number J0308
Project Title Does ADHD Occur More in a Particular Hair Color?	
Abstract Objectives/Goals The goal of this experiment is to determine if there is a scientific link between hair color and Attention Deficit/Hyperactivity Disorder (ADHD). If there is a link between hair color and ADHD, this information could help in an earlier diagnosis of ADHD. It might also help explain scientifically why there are some stereotypes involving hair color, such as "blondes are dumber", if it was found that blondes have a shorter attention span. Methods/Materials An assessment tool frequently used to help diagnose the presence of Attention Deficit Disorder (ADD) and/or Hyperactivity (HA) was distributed to approximately 903 middle school students. The frequency of ADD and HA by hair color was determined. The materials used were a questionnaire for respondents to identify their hair color, an ADHD assessment tool, an instruction sheet to teachers, a collection box for completed surveys, and an Excel spreadsheet. Results People with blonde or brown hair had a very similar incident rate of ADD and/or HA (approximately 5%), and people with black hair have a much lower incident rate (approximately 2%). Conclusions/Discussion The incident rate of ADD and HA does not vary among people with blonde or brown hair, but knowing that it is lowest in people with black hair might help in the screening and diagnosis of ADHD.	
Summary Statement Having blonde or brown hair is not a predictor of ADD or HA, but having black hair makes it less likely.	
Help Received Brianna Evans, L.C.S.W., a specialist in ADHD provided the assessment tool and guidance on its scoring and interpretation.	



**CALIFORNIA STATE SCIENCE FAIR
2007 PROJECT SUMMARY**

Name(s) Caroline R. Glazer	Project Number J0309
Project Title The Placebo Effect	
Abstract Objectives/Goals I wanted to find out if the placebo effect worked on 4th-6th graders. I wanted to see if a piece of Botan Rice Candy that (they were told) "stimulates the cerebellum" would make people make more basketball shots. Methods/Materials I tested 18 4th-6th graders with signed permission forms. The first thing the subject did was shoot ten lay-ups. I recorded the number they made, and then explained that the Botan Rice Candy I was about to give them would "stimulate the cerebellum" and make them shoot baskets better. After they finished eating the candy, I had them shoot another ten lay-ups. I recorded the number they made, and determined by how many baskets they increased or decreased. Results 56% of the subjects' shooting performance increased. One-third (33.33%) of the subjects decreased. 11% of the subjects made the same number of baskets before and after eating the candy. The majority of people improved by one basket. Conclusions/Discussion The placebo effect partly worked. It was expected that the subjects' performance would increase a lot after eating the candy, but most people only increased by one or two baskets.	
Summary Statement My project was to test whether or not the placebo effect would affect students in 4th-6th grade.	
Help Received Dad helped edit abstract; Mom helped find parents to sign permission forms; Ms. White (my Science teacher) let us work on our projects during class time.	



**CALIFORNIA STATE SCIENCE FAIR
2007 PROJECT SUMMARY**

Name(s) Catherine M. Haber	Project Number J0310
Project Title Blonde Today, Brunette Tomorrow! Influence of Hair Color on the Perceived Intelligence of Women	
Objectives/Goals The purpose of this study is to verify if women's hair color makes a noticeable difference in social perception of women's intelligence.	
Abstract Methods/Materials Using Adobe Photoshop, four subjects, two blonde teenage girls and two blonde middle age women, were each given four different hair colors: silver blonde, blonde, light brown, and dark brown. Four surveys, with four pictures each, were arranged so that there would not be two pictures of the same person with a different hair color in the same survey. SurveyGold software was used to design and post the surveys on the internet. One hundred participants took one survey each and rated each person on a scale of one to seven for friendliness, sociability, intelligence, attractiveness, and confidence; this way the subject would not know that only the intelligence factor would be analyzed. A comparison of the average intelligence ratings of those subjects was made for each different hair color.	
Results All subjects received the lowest average intelligence ratings when they had silver blonde followed by blonde hair color, and the highest average intelligence ratings when they had dark brown followed by light brown hair color. There was no age interaction between subjects and respondents. There was a gender interaction with the subjects; male respondents gave a lower intelligence rating to the subjects when they had silver blonde and blonde hair compared to the female respondents. Blonde respondents' lowest intelligence ratings were higher than the lowest intelligence ratings of all the respondents of the other hair colors. Subjects were found more attractive when they had silver blonde and blonde hair colors.	
Conclusions/Discussion My results were similar to previous researches and findings that the stereotype #Dumb Blonde# is still alive. This study shows that one seemingly small change in physical appearance can change the way that people perceive an individual. This might be an advantage to some (dying your hair brown when applying for a new job) or a disadvantage to others (being called #dumb#). To reduce the effect of these images, newspapers, television and radio should portray people in a more respectful way. In the meantime, we shouldn't stereotype people because sometimes stereotyping can have an unfair effect on others.	
Summary Statement This study shows that women with any type of blonde hair are still perceived as less intelligent but more attractive.	
Help Received My parents helped me learn how to post the surveys on the internet and how to use SurveyGold software to analyze the data.	



**CALIFORNIA STATE SCIENCE FAIR
2007 PROJECT SUMMARY**

Name(s) Eli Harris; Sean Simpson	Project Number J0311
Project Title I Know More about You Than You Think	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals For teachers to be able to understand students needs accurately with the least amount of time spent with student. Also to prove these studies are reliable enough to be used in forensics</p> <p>Methods/Materials Materials: 1. 9 seventh grade students- used as test subjects 2.1 video camera # used to record interviews for later reference 3.1 sample passage containing every letter of the alphabet # for students to copy for handwriting analysis 4.1 set of ten oral questions- used to study the body language of the speaking student 5.Nine 8 1/2 by 11 sheets of lined paper # used for students handwriting sample 6.A quiet room # for interviews to take place in 7.1 table and 1 chair # for students to sit in while the copy the passage 8.1 chair - for the interviewee to sit in 9.1 computer # to put and review videos on 10.A sample Meyers Briggs Introvert vs. Extrovert test to give to students</p> <p>Results Our hypotheses were predominantly correct. Both types of analysis were determined equally accurate. The accuracy percentage was 78%, which means seven out of our nine interpretations were correct. Although, the tests were fairly accurate, handwriting and body language analysis have not been proven to be a complete science at this point in time. These types of testing can be helpful in terms of guidance, but not for determining fact. We believe that these practices will be able to help teachers individually understand their student#s needs more quickly.</p> <p>Conclusions/Discussion Conclusion: An important thing to acknowledge while interpreting body language or handwriting is to always videotape interviews for later reference. This will make it easier to see all aspects of body language. Also, when taking handwriting samples, be sure that the passage contains every letter of the alphabet, for each letter reveals a lot about a person. As a precaution, make sure that all of your work is organized and kept in a safe and memorable place. This is important because the interpreter will often be referring to previous pieces of information.</p>	
Summary Statement Determining if handwriting and body langugae analysis are accurate.	
Help Received We had no help in any form	



CALIFORNIA STATE SCIENCE FAIR 2007 PROJECT SUMMARY

Name(s) Jordan M. Harris	Project Number J0312
Project Title Reviewing Peer Review: Is Peer Review Valid?	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals My science class discussed an article regarding scientists who judged abstracts based on authors' names and affiliations rather than the actual quality of abstracts. This made me wonder if students would judge an essay based on an author's name and school rather than the quality of the essay itself. I decided to test the objectiveness of peer review in grades 5-8. My hypotheses were that children and adolescents would tend to give essays higher ratings if they believed the essays had been written by students from their own school and by students whom they regarded as talented writers.</p> <p>Methods/Materials I tested 104 fifth through eighth grade students. I first discreetly distributed questionnaires to the test subjects. These questionnaires helped me choose a talented writer for each class. I referred to these authors as the class writer. Next, I wrote two paragraphs: Benjamin Franklin and George Washington. Half of each class was given the Benjamin Franklin paragraph with the name of our school and a respected class writer as the author. They were also given the George Washington paragraph with the name of another school and unknown writer as the author. The other half of the class was given the Benjamin Franklin paragraph with the name of another school and an unknown writer as the author, and the George Washington paragraph with the name of our school and a respected class writer as the author. The students were then asked to read the paragraphs and rank the quality of the writing fairly, according to a rating scale of 1-10. This scale corresponded to word descriptions, such as fair and good.</p> <p>Results According to my results, the average rating for the paragraphs when written by unknown writers was 6.1, meaning a paragraph of good quality. The average rating for the same paragraphs when written by a class writer was 8.1, meaning excellent.</p> <p>Conclusions/Discussion The results showed students gave a paragraph a 20% higher rating when they believed it was written by a student from their own school and by a student they regarded as a talented writer. It seemed both the halo effect, and a sense of loyalty, interfered with the students' abilities to objectively evaluate paragraph quality. The results of this experiment mirrored the problems observed in the adult peer review process.</p>	
Summary Statement This project tested the objectiveness of peer review in elementary and middle school classrooms, it was seen that the results mirrored the problems observed in adult peer review processes.	
Help Received Mrs. Hunker helped create test process; Friend helped distribute questionnaires.	



CALIFORNIA STATE SCIENCE FAIR 2007 PROJECT SUMMARY

Name(s) Nicole A. Heller	Project Number J0313
Project Title Turn It Up!	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals I decided to find out what effect classical music and hard rock have on a person's heart rate because I always feel more relaxed when listening to classical music and feel stimulated when I listen to hard rock. I wanted to find out if music really has an effect on the heart rate for most people.</p> <p>Methods/Materials I had my friends and neighbors come over to my house over the course of three days. They sat, propped up on my bed while I took their heart rate with my dad's blood pressure monitor and by hand. I had each subject listen to five minutes of classical music from my iPod, through Bose headphones. The songs I chose were #Für Elyse# and #Romeo and Juliet# from Victoria's Secret Classics by Request with the London Symphony Orchestra. After the music I took their heart rate again the same way as the first time. Then I had them wait five minutes before listening to the hard rock songs, #Judy is a Punk," #Suzy is a Headbanger# and #Let's Dance# from It's Alive by the Ramones. After five minutes of rock I took their heart rate again the same way.</p> <p>Results The results of my experiment show that 9 of the 12 people's heart rates went down from their normal heart rate while listening to classical music and 3 of the 12 people's heart rate went up from their normal heart rate while listening to classical music. 10 of the 12 people's heart rate went up from their normal heart rate while listening to hard rock and 2 of the 12 people's heart rate went down from their normal heart rate while listening to hard rock.</p> <p>Conclusions/Discussion My conclusion accepts my hypothesis. 75% of the subjects' heart rates went down when listening to classical music and 83% of the subjects' heart rates went up when listening to hard rock. I learned that for most people, heart rates go down with classical and up with hard rock from their normal rates. But there are going to be some people whose heart rates will go up with classical and down with rock, because of some emotional reason attached to a song or type of music. I don't think my hard rock songs were hard enough and I think my classical music could have been softer. I also think I should have measured the subjects' pulses in between the classical music and the hard rock. The more this project is repeated the more it will show that the majority of subjects will experience the same effect but there will always be exceptions for people that are effected by music in different ways.</p>	
Summary Statement I tested the effect of music on the heartrate.	
Help Received My friends and neighbors helped me by letting me take their pulse and listening to music; my dad let me use his blood pressure monitor	



**CALIFORNIA STATE SCIENCE FAIR
2007 PROJECT SUMMARY**

Name(s) Steven A. Ilko	Project Number J0314
Project Title Ready or Not	
Abstract Objectives/Goals The objective of the experiment was to find if disaster relief organizations were creating and distributing disaster kits that were fitting to the needs of a suburban community. The goal of the experiment was to design and distribute a disaster kit based on the results of the experiment. My hypothesis concluded that 75% of the items posted by disaster organizations would also appear on the approved items from the survey. Methods/Materials During the experiment, two kits were tested. The first was an organization kit in which all materials came from disaster kits sampled. The second kit was designed using the results of a survey of community members. For testing each disaster kit, a test family lived off the materials provided living in their residence with no gas, water, or electricity for three days. Results According to the survey, only 50.8 % of the items posted by organizations were selected as necessary by survey respondents. That means that 50.8% of the items recommended by organizations would most likely be used in a suburban fire situation. The results of the organization kit testing showed that only 57.75% of the items posted by disaster organizations were actually used by the test family. When the test family used the survey created kit over 80% of the items were used. Conclusions/Discussion This experimenter concluded that disaster kits distributed by FEMA and other organizations were aimed for a general audience, not for specific areas in the US. This new kit was created by community members who experienced a disaster.	
Summary Statement This project is to find if mass produced disaster kits are meeting the needs of real people that actually use them.	
Help Received No help recieved	



**CALIFORNIA STATE SCIENCE FAIR
2007 PROJECT SUMMARY**

Name(s) Erik L. Kreeger	Project Number J0315
Project Title Red County, Blue County: Are There Correlations Between a County's Demographics and How It Votes?	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals The goal of my project is to see if correlations exist between a county's demographics and whether the majority of the county votes conservative or liberal in elections. My hypothesis is that if a county has a larger and more ethnically diverse population, a higher median income and a higher high school graduation rate, then the majority of the county will tend to vote liberal.</p> <p>Methods/Materials I obtained demographic data from the US Census Bureau for all of the counties in California, Missouri and Virginia. I then compared the data to how each county voted on a specific ballot measure using a modified box-and-whisker plot. I then graphed the data. The measures I analyzed were chosen because they were hot topic issues and had clear conservative or liberal positions.</p> <p>Results In two of the three states which I analyzed, counties with a larger population usually voted liberal and counties with a smaller population typically voted conservative. In two of the three states, counties with a more ethnically diverse population often voted liberal and counties with a less ethnically diverse population mostly voted conservative. In two of the three states, counties with larger median incomes mainly voted liberal and counties with smaller median incomes generally voted conservative. Lastly, in all three of the states, counties with higher high school graduation rates normally voted liberal and counties with lower high school graduation rates largely voted conservative.</p> <p>Conclusions/Discussion My hypothesis was mostly correct. I found four correlations between how counties vote and their demographics. A county's population, ethnic make-up and median income moderately correlate to whether the county votes conservative or liberal. A county's high school graduation rate, however, correlates even more strongly to whether the county votes conservative or liberal.</p>	
Summary Statement The goal of my project was to see if correlations existed between a county's demographics and whether the county voted liberal or conservative.	
Help Received Mr. Schwing and my science teacher helped with board display and an analysis question. Parents helped layout board.	



**CALIFORNIA STATE SCIENCE FAIR
2007 PROJECT SUMMARY**

Name(s) Jamie M. Mensching	Project Number J0316
Project Title Liar, Liar, Pants on Fire: A Study in Detecting Lies	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals I would like to know how well the average person can detect lying.</p> <p>Methods/Materials I recorded four people telling stories that were either lies or the truth and had 47 other people observe this tape and determine who was lying.</p> <p>Results Hypothesis 1: I thought that the women would be the best at detecting lies. Data shows that: older males did the best young females did the second best young males did the third best older females did the worst</p> <p>On average, women did less well than the males in detecting lying, the exact opposite of what I predicted in my hypothesis.</p> <p>Hypothesis 2: My study tends to show that there is not much of a difference in scores from the two age groups. My second hypothesis was not proven.</p> <p>Conclusions/Discussion Neither of my hypotheses were confirmed. The discussion after each session had some interesting observations.</p>	
Summary Statement I examined how well untrained people were able to detect a lie when it is presented to them in a short story by a stranger in a video tape format.	
Help Received The original idea was mine. My aunt helped me figure out how to test my idea. My mother helped me with my story board. My dad helped me with video taping and entering data into the computer.	



CALIFORNIA STATE SCIENCE FAIR 2007 PROJECT SUMMARY

Name(s) Grace I. Ng	Project Number J0317
Project Title Perception vs. Reality: Feeling Fat, Thinking Thin	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals Due to pressure from peers and images from the media, youths and adolescents are striving for thinness beyond the normal limits. Correct perceptions of body weight for middle school students are critical as they start adolescence. This research is trying to find out if weight perceptions among middle school girls and boys are different.</p> <p>Methods/Materials Randomly choose one class each, from fifth to eighth grade, to participate in a survey using a custom designed questionnaire to collect information about the participant's grade level, gender, age, their perceived weight, their perceived height, and their weight perception category. The actual weight and height were measured. Comparisons were made to the actual and calculated body weights.</p> <p>Results Based on the BMI calculated from the actual weight and height; Overall, 18% of the girls are overweight; while 27% of boys are overweight. Of the 20 girls categorized as overweight, only 50% girls recognized that they were overweight. Of the 26 boys categorized as overweight, 46% boys recognized that they were overweight.</p> <p>52% of girls and 45% of boys are of the right weight. 32% of the girls overestimated their weight while only 22% of the male participants overestimated. On the other hand, only 13% of the girls underestimated themselves while 20% of the boys who completed the questionnaire underestimated. The number of students who had the right actual body weight increased as grade level moved up. However, the number of students who perceived that they have the right body weight decreased as the grade level went up.</p> <p>Conclusions/Discussion Girls tend to overestimate their body weight while boys are more likely to underestimate their body weight. A larger portion of the girls than the boys perceived themselves as just right or overweight, but they were actually underweight. In reverse, there were a higher proportion of boys than girls who were of overweight, but saw themselves as just right. Girls have a slightly lower realistic perception of their body weight than boys. Although more students in upper grade have the right actual body weight; yet fewer students in the upper grade perceive they have the right body weight. Girls in upper grade levels tended to overestimate more than those in the lower grades. The boys had a very similar trend even though they are less likely to overestimate than the girls.</p>	
Summary Statement Weight perceptions among middle school girls and boys.	
Help Received Thanks to my school teachers, Miss Hensley, Mrs. Ashmore, and Mrs. Reed for allowing me to carry out the survey on their classes; my parents in giving helpful suggestions; my sister for her inspiration and help on the display board; my brother for encouragement.	



**CALIFORNIA STATE SCIENCE FAIR
2007 PROJECT SUMMARY**

Name(s) Jamie E. Nordling	Project Number J0318
Project Title Does Birth Order Affect Personality Type?	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals In my experiment I was trying to figure out if there was a correlation between birth order and personality type. I hypothesized that there was going to be a certain pattern between birth order and personality type because of my own family experiences when dealing with siblings.</p> <p>Methods/Materials I tested this problem by collecting 34 students of each birth order, youngest, oldest, and middle children, and had them take a 40 question test to find their personality type. I then recorded my data and compared them to other students of the same birth order.</p> <p>Results After conducting my experiment I realized that my hypothesis was correct. There was indeed a correlation between birth order and personality type.</p> <p>Conclusions/Discussion I concluded this because within each birth order there was a most common personality type. For example in oldest children the most common personality type was ENFJ with a total of 7 students with this personality type. This means that the seven students had the most common traits of: Extroverted, iNtuitive, Feeling, and Judging.</p>	
Summary Statement I was trying to figure out if your birth order, being youngest, middle, or the oldest child, had an effect on your personality type.	
Help Received Mrs. Benson, my science teacher, supplied all of the materials needed for this experiment.	



**CALIFORNIA STATE SCIENCE FAIR
2007 PROJECT SUMMARY**

Name(s) Ryan J. Nowicki	Project Number J0319
Project Title Coffee, Plane, and Juice Queues: Can Little's Law Reduce the Wait?	
Abstract Objectives/Goals The purpose of my study was to test Little's Law and the science of queuing theory. If queuing theory can be used to predict the real life behavior of people standing in line, it could then be used to analyze queue efficiency and minimize queue sizes (depth). Background: Little's Law states that the average number of people in a queue will be equal to the average arrival rate multiplied by the average time spent in the system. The only necessary assumption is that the queue is at steady state. If proven valid, this law gives business owners a tool to use for reducing their long queues. Methods/Materials Identified five suitable queues to observe: three different coffee shops, one airport ticket counter and one juice shop queue. Recorded three core inputs every minute (the total amount of people in the system, average arrival rate and the average server time) for each queue over a period of several hours. Computed the summary statistics and used Markovian queueing theory to calculate a result to be compared with that predicted by Little's Law. I then used related queuing formulas to analyze the relative impact to each queue of making various adjustments. Results 1) Little's Law was found to be valid for five different queue systems over five different days. 2) Little's Law was more accurate for predicting behavior in longer lines than in shorter ones. 3) Reducing the server time was more effective at minimizing the wait time than increasing the number of servers. Conclusions/Discussion Little's Law can predict the behavior of real life business situations. After overcoming numerous challenges to accurately measure queue characteristics, the predicted number (Little's Law) agreed closely with the observed number. Given this result, queueing theory was then used to analyze alternatives for shortening the waiting time. This experiment shows that simple spreadsheet queue models may help business owners explore options for improving queue performance.	
Summary Statement My project demonstrates that Little's Law and related queueing theory is scientifically correct and can help optimize real life queue performance.	
Help Received Dad helped with stopwatch while taking data. Also, helped me make sense of the queueing theory equations.	



**CALIFORNIA STATE SCIENCE FAIR
2007 PROJECT SUMMARY**

Name(s) Katherine J. Ohrbom	Project Number J0320
Project Title The Media's Effect on Body Image and Eating Disorders	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals The purpose of my experiment is to determine what effect the media has on body image and whether or not it influences eating disorders in teens. If adults and parents were to know the cause of these diseases, they might be able to prevent them. The most common eating disorders, as well as the ones that I surveyed people on, are anorexia, bulimia, and bingeing-and-purging. By conducting this experiment, I hope to find out how big of an impact the media actually has on teenagers's body image. My hypothesis is that magazines and television play a gigantic role in the deterioration of good body image.</p> <p>Results In the boys that I polled, half of the ones who watch MTV and similar channels wanted to change how their body looked. None of the boys who did not watch MTV wanted to change how they looked. Of all the girls I surveyed, 75% of the ones who did not watch MTV and the like, wanted to change how they looked. The number was slightly less for girls who did watch MTV and other channels. This shows that most teens who watched MTV are dissatisfied with their body. Only two people that I polled admitted to having an eating disorder: they were girls who watched MTV. Of all the boys I polled, over 50% of those who did not read fashion magazines wanted to change their appearance. All of the girls polled who read fashion magazines wanted to change how they looked, and over 50% of those who did not wanted to change, as well. This shows that teenagers who read fashion magazines are more likely to want to change their appearance, but it is not the main cause.</p> <p>Conclusions/Discussion The purpose of the experiment that I conducted was to find out how big of a negative impact the media had on body image. I hypothesized that the media would play a big role in the deterioration of good body image. Judging from the data I collected, my hypothesis is inconclusive. To determine whether it is true or not, I would need to survey a larger group of people.</p>	
Summary Statement To evaluate the effect mass media has on the deterioration of good body image in teenagers and pre-teens.	
Help Received Classmates and friends took surveys.	



**CALIFORNIA STATE SCIENCE FAIR
2007 PROJECT SUMMARY**

Name(s) Julia F.P. Ostmann	Project Number J0321
Project Title Aaaah! I'm Frustrated: Does Gender Affect Behavioral Responses to Frustration?	
Abstract Objectives/Goals How does gender affect behavioral responses to frustration? My objective is to record subjects' responses to a frustrating task and analyze gender differences. Backed by current and past research, I believe that gender will affect the subjects' behavioral responses to frustration. Methods/Materials A box was created with a grid of nails on the front, 12 nails being electromagnets. The electromagnets were wired into circuits with switches and batteries. A wood and cardboard shield hid the wiring. An image of the grid was made, and 20 subjects, 10 males and 10 females, in the 8th grade, were asked to attach paperclips according to the diagram. Every 10 seconds over a period of three minutes, the electricity was turned off, causing the paperclips to fall. Subjects' responses were videotaped. Responses were separated into seven categories. The sum total of responses in each category for each gender was found and compared, as well as each category's percent frequency, or percent total of responses in that category. Results On average, boys showed more responses to frustration in three of the seven categories. They were more negative, focused, and much more aggressive. Girls showed more responses in one category: searching for clarification. Boys and girls had the same or close numbers of average responses in the other three categories (New Methodology, Confusion, and Positive Responses), although the percent frequencies in these categories did differ with gender. Girls most frequently showed new methodology as a response to frustration, whereas boys most frequently showed anger/aggression/accusation. Conclusions/Discussion My hypothesis was correct. There are significant gender differences in behavioral frustration responses, both in average number of responses and percent frequency of responses. Knowing the differences in boys' and girls' responses and which responses each gender tends to show most frequently can help teachers and parents detect, prevent, and control students' frustration.	
Summary Statement This project explored genders' effects on behavioral responses to frustration in adolescents.	
Help Received My father taught me how to wire a circuit.	



**CALIFORNIA STATE SCIENCE FAIR
2007 PROJECT SUMMARY**

Name(s) Shantal L. Reich	Project Number J0322
Project Title Can Graphology Be a Form of Biofeedback?	
Abstract Objectives/Goals My hypothesis stated that handwriting changes by mood/state of mind. The question was posed whether one can use graphology to measure and characterize a person's state of mind. If a person's mental state is expressed in handwriting, then perhaps one could use graphology to measure the mood of a person as a form of biofeedback. Methods/Materials # iPod # iPod charging wire # two sets of earphones # two testing pens # pencil # desk # chair # Line Slope, Slant, and Size measuring sheets for analyzing handwriting # measurements key # ruler # #Y adapter# # permission slips # consent forms # 64 subjects ages seven through fourteen # 55 adults # testing sheets that have the following sentences written on it: When I listen to music it affects my mood. Sometimes it is positive and sometimes it is not. Results When agitated, if there was a change, most writing became smaller. The handwriting of the subjects who listened to relaxing music showed widening between the spaces of each word. Conclusions/Discussion The results showed there was an overall change in subjects' samples in size of writing/spacing and in line slope when listening to agitating/relaxing music. Thus, the hypothesis was partially supported. An intriguing aspect of the results is the possibility that a reverse link exists: if changes in state of mind can affect handwriting, could deliberate handwriting changes affect state of mind? Further study is needed.	
Summary Statement This project sought to discover if, on the whole, measurable changes in handwriting could be observed from subjects' samples, respectively, in a state of agitation and relaxation in comparison with a control sample.	
Help Received My mother drove me around to get supplies for board and to test subjects. My father helped to edit my writing, checking grammar, spelling, etc. School Advisor had overall input from beginning to end.	



**CALIFORNIA STATE SCIENCE FAIR
2007 PROJECT SUMMARY**

Name(s) Angelica S. Villegas	Project Number J0323
Project Title What Is the Physical Proximity of Discomfort in Humans with a Non-Touch Approach?	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals My objective was to find the point of discomfort in human adolescents.</p> <p>Methods/Materials The materials I used were 50 human adolescents, one 150 centimeter measuring tape, and myself. I randomly tested 50 human adolescents for their proximity of discomfort. To do this, I asked them if they would participate in an experiment; if they agreed, I would begin by asking them their age, sex, ethnicity, relation to myself, and their feeling towards me and the mood towards the day. I would then proceed to laying out a 150 centimeter measuring tape between us. Then, I'd have them stand at the 150 centimeter mark, while I would stand at the 0 centimeter mark. After that, I'd ask them to tell me at which point they felt uncomfortable, or the need to step back. I'd then advance 10 centimeters until they told me they felt uncomfortable or the need to step back (or if they visibly stepped back), asking them each time after every advance.</p> <p>Results In my results, I found out that White people are most comfortable at a greater distance (24.5 cm.), while Chinese people are most comfortable in a closer distance (10 cm.); females were more comfortable at a closer distance (19.96 cm.) than males (20.96 cm.); good friends were most comfortable in a closer distance (11.5 cm.) than strangers (24.29 cm.) were; people who have a good mood /relationship were more comfortable in a closer distance (16.1 cm.) than those who had a bad relationship/mood (46.75 centimeters).</p> <p>Conclusions/Discussion My results supported my hypothesis and gave me a good idea of what distances human adolescents considered uncomfortable. Information in my projects expands what Edward T. Hall had originally uncovered on the topic called 'Proxemics.'</p>	
Summary Statement My project is about finding the proximity of discomfort in human adolescents with a non-touch approach.	
Help Received Mother bought materials and helped punch the hole for the ribbon on my display board; Test subjects helped by participating,	



**CALIFORNIA STATE SCIENCE FAIR
2007 PROJECT SUMMARY**

Name(s) Robert W. Wickham	Project Number J0324
Project Title If You Are What You Eat, Do You Know What You Are?	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals My objective was to assess the nutritional knowledge of people interviewed. From those findings, and from using knowledge gained from my previous two science fair projects, determine if a lack of nutritional knowledge is a factor in the American obesity epidemic.</p> <p>Methods/Materials I researched nutrition and created a questionnaire with 10 questions. I distributed 750 and received 503 completed questionnaires from people ranging in age from 7 to 78. I then graded and recorded the results, dividing the questionnaires by age and gender.</p> <p>Results Question numbers with percent correct answers: 1. 16%; 2. 26%; 3. 30%; 4. 24%; 5. 20%; 6. 35%; 7. 27%; 8. 18%; 9. 21%; and 10. 24%. These results were for all 503 surveys. I also calculated results based on age and gender. Women 21 years and older were the most knowledgeable group.</p> <p>Conclusions/Discussion My hypothesis was proven correct, that people know very little about nutrition. The findings of my previous two science fair projects support that America is overweight, and that TV advertising and the consumption of fast food are factors. Now, I have learned that a lack of knowledge about nutrition is also a factor in the obesity epidemic.</p>	
Summary Statement One factor in the American obesity epidemic may be a lack of understanding and knowledge about nutrition.	
Help Received Teachers, friends, sports team, and Weight Watchers helped distribute questionnaires. Mother helped tally answers on questionnaires.	