



# CALIFORNIA STATE SCIENCE FAIR 2012 PROJECT SUMMARY

<b>Name(s)</b> <b>Tristan J. Barca-Hall</b>	<b>Project Number</b> <b>J0401</b>
<b>Project Title</b> <b>Touché or Not Touché</b>	
<b>Objectives/Goals</b> My goal was to determine whether a fencer's location on the fencing strip effected how many touches they score. I believe that a fencer will score more touches when pushing there opponent past the center line, rather than when they are being pushed past the center line, because the act of being pushed lays a physical and mental pressure on their opponent.	
<b>Abstract</b> <b>Methods/Materials</b> One science notebook, two writing utensils, and one computer were all the necessary materials for my project. I then watched fifty five touch bouts, each bout consisting of two people. Normally I would have tested one-hundred people but some people repeated so I only tested about eighty. I observed who scored touches and where they scored them, either past the center line or behind the center line.	
<b>Results</b> My hypothesis was correct, fencers scored 266 touches when they pushed their opponent past the center line, but scored only ninety-three touches when they were pushed past the center line. I also found the push factor, or the difference of of the fencer's touches scored when pushing or being pushed. For advanced fencers, the average push factor when they won was 3.762. When they lost, advanced fencers had an average push factor of 1.909. When intermediate fencers won they had an average push factor of 1.000. When they lost, intermediate fencers had an average push factor of 0.789 which is still close to even. When beginner fencers won they had an average push factor of 2.692. When they lost, beginner fencers had an average push factor of 0.350 which means they scored slightly more touches when pushing than when they were pushed When boys won their average push factor was 2.143. This means that they scored significantly greater when pushing than when being pushed. When boys lost there average push factor was 1.206, which means that they scored almost equal amounts of touches when pushing as the did when being pushed. When girls won their average push factor was 3.667 which means that a large amount of their touches were scored when pushing. When girls lost, their push factor was 0.125, which means that they scored only a small amount of touches while pushing. In total, all fencers had an average push factor of 2.600 when they won, and 0.860 when they lost.	
<b>Conclusions/Discussion</b> Next year I am going to do a continuation of this project. I am going to see if girls are more aggressive against boys or girls. I think it is boys.	
<b>Summary Statement</b> The point of my project is to determine if gender, experience, or location effect how a fencer's performance, and to determine if this information can help a fencer succeed.	
<b>Help Received</b> Fencing coaches Dan and Ania Tibbets let me use their fencing club to observe bouts.	



**CALIFORNIA STATE SCIENCE FAIR  
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<b>Name(s)</b> Cameron A. Bear	<b>Project Number</b> <b>J0402</b>
<b>Project Title</b> Stop, Roll, or Run	
<p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives/Goals</b> I chose to investigate whether male or female drivers will respect a stop sign with a witness present. I found this interesting because in neighborhoods so many people do not come to a complete stop or just run right through a stop sign. This is a serious problem because it affects the lives of others. I wanted to find out how I could make these drivers stop like they are supposed to. I came up with different witnesses that are most likely to determine if drivers will stop or not.</p> <p><b>Methods/Materials</b> To determine whether male or female drivers will stop more with a given witness, I first recorded my data without being visible to the drivers. The next day at the same time I used children as a witness and recorded data. Lastly, I used a camera as a witness and sat in view for the drivers to see and recorded data.</p> <p><b>Results</b> The results were that women stop more than men at a stop sign with no witness. Men stopped more than women when children were out playing. Finally the last experiment, with a camera as the witness, showed that more women stopped at the sign. Without a witness present, women stopped 10 times out of 22 and men stopped only 5 times out of the 22 sampled. When children were present only 9 women out of 22 stopped at the sign. However, when the camera was visible more women stopped with 11 out of 22 women stopping at the sign. With the men drivers, when the children were present they stopped 11 times out of the 22. But when the camera was present men stopped only 8 times out of the 22 sampled.</p> <p><b>Conclusions/Discussion</b> When completing this experiment I concluded that women are safer drivers than men but not by a lot. Men ran the sign more over the experiment with a ratio of 25:66 and women right behind with 20:66. The stopping ratio of men was 24:66 and the women stopped 30:66. Meaning women respect stop signs more than men. Both men and women stopped more often when some sort of witness was present.</p> <p>We can make neighborhoods and stop sign intersections safer for everyone by determining whether male or female drivers will stop and what witness will influence them the most. This project can be taken to another level, to change the roads and decrease the amount of car crashes. There by, making the world a safer place.</p>	
<b>Summary Statement</b> This project is about whether male or female drivers will respect a stop sign with a witness present.	
<b>Help Received</b>	



# CALIFORNIA STATE SCIENCE FAIR 2012 PROJECT SUMMARY

<b>Name(s)</b> <b>Johnny Berman; Maya Flannery; Arjun Mahajan</b>	<b>Project Number</b> <b>J0403</b>
<b>Project Title</b> <b>Innovation in Autism</b>	
<p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives/Goals</b> Many children with Autism Spectrum Disorders (ASD) struggle with social, communication and behavioral issues. One of the most common, stereotypy (repetitive motions), can create social barriers as well as interfere with a child's ability to learn. Our mission is to develop and program a device that will 1) automatically detect hand flapping and 2) respond with vibration therapy, cuing the child to stop the behavior.</p> <p><b>Methods/Materials</b> We used the Lilypad# set of electronics, which included an accelerometer, to build a device that could record motion on the subject's wrist. Following approval from The Help Group's Institutional Review Board, we tested the device on children with autism. To determine if we could program a device to autonomously recognize stereotypy, we placed the motion-recording device on the children for 35-minute periods. We compared normalized acceleration data during repetitive and normal activities. We defined a repetitive motion as a period where the variation in acceleration values i.e. standard deviation, was high. Periods of stereotypy coincided with increased variations in acceleration. To test if vibration therapy calms the child, we utilized a device that via remote, delivers point vibration when we observed the child performing a repetitive motion. We then compared the frequency and duration of the flapping with and without vibration therapy.</p> <p><b>Results</b> While analyzing the acceleration data from our device, we compared acceleration values with our observations. We found that subjects had somewhat distinguishable repetitive motion patterns. In general, during stereotypy, the acceleration values were high with a larger STD compared to those during non-repetitive motions. However, we were not able to distinguish between intense physical activities (e.g. running) and repetitive motion. We found that all the subjects# repetitive motions decreased in frequency and duration when vibration therapy was delivered.</p> <p><b>Conclusions/Discussion</b> We developed a device that could successfully record and distinguish stereotypy from normal motion in children with ASD. We proved that vibration therapy calms repetitive motions. However, we were unable to program the device to autonomously distinguish between intense physical activity and stereotypy. Such programming would require complex algorithms.</p>	
<b>Summary Statement</b> The goal of our project was to create a device that would autonomously reduce the self-stimulatory behaviors of children with autism.	
<b>Help Received</b> Robotics mentor Arnold Lesin; Professionals and researchers at the Help Group. Based on our research, we deduced the parameters that would be required to program our device. Due to its complexity, a programmer wrote the code based on these parameters.	



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<b>Name(s)</b> <b>Anna L. Brewer</b>	<b>Project Number</b> <b>J0404</b>
<b>Project Title</b> <b>The Effect of Gender and Profile Picture on Popularity of Fake Facebook Accounts</b>	
<p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives/Goals</b> To determine if the number of junior high students willing to accept a Facebook friend request from a random stranger can be increased by listing a certain gender or profile picture.</p> <p><b>Methods/Materials</b> Three possible names (a boy's name, a girl's name, and a gender-neutral name) and three possible pictures (a cute puppy, a photo of a teen, and the default blank profile picture) were mixed and matched to create eight fake Facebook accounts. Requests were sent out to three groups of junior high students including both boys and girls. Each group received requests from two or three of the profiles. Over a period of eight days, data was collected about how many people accepted those requests.</p> <p><b>Results</b> The most-accepted profiles were the girl with the puppy picture and the gender-neutral profile with no picture. The profile of a boy with a teen boy's picture got significantly less acceptances than other profiles.</p> <p><b>Conclusions/Discussion</b> Junior high students are most likely to accept friend requests from profiles that appear very innocent and non-threatening (females with pictures of cute animals) or profiles onto which they can project their own image of who they want it to be (no gender listed, no picture). People often tended not to accept males, perhaps because they were perceived as threatening. People also tended not to accept profiles with teens' photos, likely because these allowed users to verify that they did not know the person.</p>	
<b>Summary Statement</b> This project studied the factors that influence a junior high student's decision to accept a Facebook friend request from a random and potentially dangerous stranger.	
<b>Help Received</b> Family members helped me verify multiple Facebook accounts by providing cell phone numbers and reporting security texts. Mom brainstormed ideas with me; helped organize and simplify my tables and graphs; assisted with wording my discussion.	



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<b>Name(s)</b> <b>Beth E. Buchanan; Emily E. Pofahl</b>	<b>Project Number</b> <b>J0405</b>
<b>Project Title</b> <b>Understanding or Clever? Two Studies on Gender Stereotypes</b>	
<p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives/Goals</b> The purpose of the project was to determine if fifth and sixth grade students display gender stereotypes towards babies and teachers.</p> <p><b>Methods/Materials</b> Study 1 examined gender stereotypes about babies. Fifty-four participants were randomly assigned to one of three conditions: girl baby, boy baby, or gender neutral baby. First the survey presented a biography of a baby in which the names and pronouns were changed to coincide with the assigned condition. Next, participants were given 14 possible traits (5 warm, 5 competent, 4 other) and were instructed to select 5 traits that best describe the baby. Study 2 examined gender stereotypes about teachers. Fifty-four participants were randomly assigned to one of three conditions: female teacher, male teacher, or gender neutral teacher. First the survey presented a biography of the teacher in which the names and pronouns were changed to coincide with the assigned condition. Next, the participants were asked to respond to four questions about how they think the teacher would be in terms of personality and behavior in the classroom (relating to warmth and competence).</p> <p><b>Results</b> The hypothesis for the first study was supported. Participants in the girl baby condition selected more warm traits (than was selected by those in the boy condition) and participants in the boy baby condition selected, on average, more competent traits to describe the baby (than was selected by those in the girl condition). However, our second study's hypothesis was not fully supported. Consistent with our hypothesis, the female teacher was rated higher in terms of warmth, but contrary to our predictions, the female teacher was also rated higher in mathematic skills and confidence, and lower in the likelihood to allow make-up assignments.</p> <p><b>Conclusions/Discussion</b> The Study 1 results supported our hypothesis. This finding suggests 5th and 6th graders make gender stereotypes about others as young as babies. Our Study 2 results are not as straight forward because the female teacher was rated as more warm, better at math, more confident and more strict than the male teacher. However, teachers are predominately female and this finding may be due to "occupational stereotyping." This suggests 5th and 6th graders make assumptions based on gender however not in a way that is consistent with the typical gender stereotype (of women being warm and men being competent).</p>	
<b>Summary Statement</b> This project uses an experimental design to examine how fifth and sixth graders make assumptions about babies and teachers' personalities and behaviors based on their gender.	
<b>Help Received</b> Elementary school teachers assisted in recruiting participants.	



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<b>Name(s)</b> <b>Samantha G. Dyar</b>	<b>Project Number</b> <b>J0406</b>
<b>Project Title</b> <b>Marketing and Color</b>	
<p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives/Goals</b> The objective of this project was to determine if the marketing color would promote healthier eating.</p> <p><b>Methods/Materials</b> I tested six, first grade classes by giving each class a different colored bag such as: red, orange, yellow, green, blue, and purple, with five carrots each. Students were given seven minutes to decide to eat the carrots or not. They did not have to finish the snack. I conducted this test three more times with the same first grade classes, but changed the color of the bag for each trial. After each trial I marked the bags "B" for boy, and "G" for girl. I then counted how many carrots were eaten from each bag.</p> <p><b>Results</b> The results of the experiment proved that students on average ate more carrots from the orange bags. The average percentage for all three tests were: orange = 83%, blue = 82%, green = 80%, yellow = 76%, red = 73%, and purple = 72%. I also compared the number of carrots eaten between boys and girls for each colored bag. My data showed that boys and girls preferred different colored bags. Boys ate 85% of carrots from the blue bag, as compared to 81% for girls. Girls ate 90% from the green bag, as compared to 84% for boys. The least amount of carrots were eaten out of the purple bag for both boys (66%) and girls (72%).</p> <p><b>Conclusions/Discussion</b> My hypothesis was correct. Based on my research, I predicted students would eat more carrots out of the orange bag. My results also indicated that there were no true patterns or trends in my data. During my three trials, there were many variables out of my control such as: dates of each trial, room temperature, seating arrangement, classroom management, attendance, and student appetite. The information gained from this experiment would benefit food companies and adults who want children to eat healthier.</p>	
<b>Summary Statement</b> Does marketing color positively influence children's interest in eating healthy food?	
<b>Help Received</b> Father painted board. District Migrant Department translated permission slips. Family helped bag carrots. Parents helped transport testing materials.	



# CALIFORNIA STATE SCIENCE FAIR 2012 PROJECT SUMMARY

<b>Name(s)</b> <b>Lauren R. Fishman</b>	<b>Project Number</b> <b>J0407</b>
<b>Project Title</b> <b>Expressing Emotion: Facial, Verbal, and Physiological Differences</b>	
<p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives/Goals</b> The purpose of this experiment is to investigate differences in the way boys and girls (ages 6-13) express emotion, including facial, verbal and physiological differences. These differences will be compared against prior research on adults to understand how gender differences in expressing emotion change with age.</p> <p><b>Methods/Materials</b> Over 45 subjects (ages 6-13) were individually exposed to three different multi-media videos, each meant to elicit a different emotional reaction (for example, happiness, sadness). Recorded measurements included each subject's facial expressions (mouth, cheek, eyebrow and eye movements), verbal responses and physiological reactions (heart rate) associated with each of the three videos.</p> <p><b>Results</b> The average and standard deviation were calculated for each of the 6 measurements recorded for boys and girls by video. Analysis of data for the happy video shows that both boys and girls outwardly express happiness to the same extent. Over 70% of boys and girls giggled or smiled after watching the happy video. But there was an inward (physiological) difference. Girls' pulse increased nearly double that for boys, meaning girls express happiness both outwardly and inwardly, whereas boys express happiness mainly outwardly. The sad video was most interesting. Girls outwardly expressed their sadness with about 70% grimacing or looking away, while boys showed significantly less emotion (only 40% grimaced). Inwardly, however, girls' pulse increased slightly, by 0.1 beats per minute, whereas boys' pulse increased by 3.3 beats per minute.</p> <p><b>Conclusions/Discussion</b> These findings suggest that boys, even as young children, hide their emotions, specifically sadness. On the other hand, girls outwardly express their emotions. In comparing this data to findings on adults from past studies, men showed very little emotion, not even happy expressions, whereas women openly expressed their emotions. This suggests that boys may learn at a young age to hide their sadness, and they later learn to hide their happiness as well. As children get older, boys become less expressive, while girls continue to express their emotions. Many questions remain unanswered for future experiments, such as: Are the differences between boys and girls learned or biological? Would results be similar for other emotions, similar for seniors, or similar for subjects from different cultures?</p>	
<b>Summary Statement</b> There are many differences in the way boys and girls ages 6-13 express emotion (including facial, verbal and physiological differences), and these differences by gender increase with age.	
<b>Help Received</b> Science teacher answered questions about science fair; Father helped with transportation; Mother helped purchase materials	



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<b>Name(s)</b> <b>Anthony G. Flores</b>	<b>Project Number</b> <b>J0408</b>
<b>Project Title</b> <b>How Does Gender Affect Multitasking?</b>	
<p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives/Goals</b> Objective: The Objective is to determine whether gender plays a role in a humans multitasking ability.</p> <p><b>Methods/Materials</b> Materials &amp; Methods: Consent Forms were collected from 50 random subjects who patronized the public library and agreed to be a part of the study. These subjects were divided between 25 females and 25 males. Each subject was given a book review; paper, two pens, and a reminder card to supply instructions. All subjects were asked to copy down the given book review word for word. However, subjects also had to listen to a recording that read a script. Subjects had to keep count of how many times the word #old# was said. In addition, a bell rang every 30 seconds, this bell meant for subjects to switch pens. Data was then collected. Productivity (number of words copied and number of times #old# was recorded) and accuracy was recorded from subjects.</p> <p><b>Results</b> Results: Females had a mean score of 102.92 words copied from the book review compared to the male#s mean score of 79.76 words copied from the book review. Females also had a mean score of 2.68 spelling mistakes when copying the book review compared to the male#s mean score of 8.12 spelling mistakes. This then shows that females are more productive and accurate when faced with a visual task. In the audio task of recording the word #old,# females also had a mean score of about 80% of #old#s recorded compared to the male#s mean score of about 75% of #old#s recorded. However, regarding the kinesthetic task of switching pens, there was no difference. Both genders had a mean score of 100% switched pens.</p> <p><b>Conclusions/Discussion</b> Discussion: It was observed that women were superior when multitasking. This may be because of the womens wider corpus callosum in the brain. This wider connection between the hemispheres may allow more information to pass in the females brain than in the male#s brain. Therefore, females can switch through thoughts faster than males can. However, these multitasking skills also might have been acquired through the females everyday life. Females are known to multitask daily in their home lives; therefore, this constant practice might have given their gender the edge. In addition, it was observed that subjects with low education had a higher score than subjects with high education. This may be because subjects with high education read with a goal of comprehending the text; therefore, they might write slower.</p>	
<b>Summary Statement</b> This project is trying to determine which gender is superior when dealing with multitasking.	
<b>Help Received</b>	



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<b>Name(s)</b> <b>Mark J. Green</b>	<b>Project Number</b> <b>J0409</b>
<b>Project Title</b> <b>2+2 = Racism</b>	
<p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives/Goals</b> The objective of this experiment was to learn whether or not an eighth grade student's level of education affects their view of racial stereotypes when given a survey regarding popular racial generalizations. My hypothesis was that above-average students will have the most open-minded view on stereotypes than the average or below average students.</p> <p><b>Methods/Materials</b> To begin this experiment, I gathered 5 classes of students with varying mathematical proficiency and administered the survey to them. After all the classes had completed the survey, I organized the surveys based on their percentage in their algebra class, above-average as 100-85%, average as 85-70%, and below average as 70% and below. I then proceeded to count the amount of instances students chose different answers for the survey questions. After counting the answer instances I calculated what percentage of students chose each answer and saw what the majority of them chose.</p> <p><b>Results</b> After I had calculated all of the data, it showed that the below-average and average students had a much higher percentage of answering No Racial Denomination for the seven questions posed by the survey. The average and below average students answered 71.4% of the questions with the majority answer No Racial Denomination. On the other hand the above-average students answered 28.6% of the questions stating it as the majority. A trend in data that applies to the above-average and average groups was for the question regarding racism where both groups answered with a majority stating Caucasian. Furthermore, the below average class gave this answer on this question the second-highest number of votes. However, the most noticeable trend in data through groups was for question 6, regarding dropping out of school, where no students put Asian as their answer throughout the groups.</p> <p><b>Conclusions/Discussion</b> My hypothesis that above-average students would have a more open-minded view on stereotypes than their average and below-average counterparts due to their higher knowledge was rejected by my data. The above-average students answered less of the questions with majority responses as No Racial Denomination while average and below- average students answered the questions with a much higher majority of that answer. My data shows that above-average students will be more likely to stereotype against other people, which means more tolerance needs to be developed with them.</p>	
<b>Summary Statement</b> My project regards the effect, if any, that mathematical proficiency has on the view of racial stereotypes in eighth grade students.	
<b>Help Received</b> Ms. Fisher assisted me in the development of my experiment and the overall final product. Mrs. Diaz assisted me in the writing of my research report by making corrections and setting parameters for the final product. Ms. Green allowed me to use her classroom.	



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<b>Name(s)</b> Cassandra M. Hom	<b>Project Number</b> <b>J0410</b>
<b>Project Title</b> Say It Again? A Study of the Effect of Bilingual Accents	
<p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives/Goals</b> The goal of this project is to single out the main reason why people are less tolerant of bilingual people with foreign accents. When this reason is found, people will be more aware of this and will try to be tolerant of English language learners. The long-term goal is to at least alert most of the U.S. and increase the tolerance for bilingual people.</p> <p><b>Methods/Materials</b> For this experiment, two people recorded one sales pitch. One speaker had a Chinese accent while the other had a regular American accent. Subjects listened to a speech and said whether or not they would buy from the person and why. There were four groups; 1) Monolingual people listening to the Chinese accented speech 2) Monolingual people listening to the Chinese regular accented speech 3) Bilingual Chinese people listening to the Chinese accented speech 4) Bilingual Chinese people listening to the regular English accented speech.</p> <p><b>Results</b> The results of this experiment were almost what was hypothesized. The control group, (Monolingual people listening to the regular English accented speech) was unbiased and a little more than half would buy from their salesperson. The bilingual group listening to the Chinese accented speech was unbiased and almost neutral. The monolingual people listening to the Chinese accented speech group's results were prejudiced away from their speaker. The bilingual group that listened to the regular English accent was biased away from their speaker.</p> <p><b>Conclusions/Discussion</b> The results taken from the experiment conducted showed stereotyping through language and accents. Judging just by their voice, the majority of the monolingual people would buy from a voice that has the same or similar accent as them. Many monolingual people are not used to accents from foreign countries because they live in a predominantly English-speaking community and do not have much exposure to their cultures and languages.</p>	
<b>Summary Statement</b> This project was conducted to single out a reason why people are prejudiced about bilingual people with accents.	
<b>Help Received</b> Dad helped get supplies; Mom proof-read backboard	



# CALIFORNIA STATE SCIENCE FAIR 2012 PROJECT SUMMARY

<b>Name(s)</b> Shira J. Kahn-Samuelson	<b>Project Number</b> <b>J0411</b>
<b>Project Title</b> <b>Can Children Perceive If Their Peers Are Truly Smiling?</b>	
<p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives/Goals</b> The objective is to see if children can perceive the difference between Duchenne (real) smiles and fake smiles in other children. Additional goals were to determine if there was a difference in perception between boys and girls, and if there were differences in perception between children with opposite gender siblings versus those without.</p> <p><b>Methods/Materials</b> Informed consent was obtained from the parents of 56 randomly chosen children, 30 girls and 26 boys ages 8-13 years. The children were shown 20 pictures of children equally divided by gender and by Duchenne and fake smiles. A picture of a child with their face in a neutral expression was shown before a picture of the same child was shown smiling. After each photo the subject was asked to circle "happy", "not happy", or "I do not know". The "I do not know" option was counted as wrong and used to eliminate guessing. Before seeing the photos, subjects filled out a questionnaire asking the subject's gender, age, and the number, ages, and gender of their siblings. Microsoft Excel was used to summarize the data and calculate the success rate, kappa value, and 95% confidence intervals. The control group used for comparison was the results that would have been obtained from random guessing.</p> <p><b>Results</b> The data established with statistical significance that children were able to differentiate Duchenne from fake smiles, as the result from guessing was outside the 95% confidence interval. There was no statistically significant difference between girls and boys, or girls with brothers versus girls without brothers. Boys without sisters was almost significantly worse than boys with sisters and the lower 95% confidence limit was only slightly better than random chance.</p> <p><b>Conclusions/Discussion</b> Children are able to differentiate Duchenne smiles from fake smiles. Boys without sisters scored the lowest overall, and were nearly statistically different than boys with sisters and barely statistically different than random chance. Boys without sisters may be at a social disadvantage because of their inability to perceive Duchenne smiles. Since the confidence intervals for the boy groups barely over-lapped further research with a larger sample size is warranted. Another potential area of research is whether children who are home-schooled are less able to differentiate Duchenne from fake smiles than children who attend school.</p>	
<b>Summary Statement</b> In this experiment different groups of children were tested to see if they were able to perceive differences between Duchenne and fake smiles in other children.	
<b>Help Received</b> Mother proofread research paper and abstract; Father mentored statistical analysis, provided Excel software for data analysis, confirmed data analysis and reviewed charts.	



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<b>Name(s)</b> <b>Lauren M. Klauer</b>	<b>Project Number</b> <b>J0412</b>
<b>Project Title</b> <b>Multi-Tasking Teens</b>	
<b>Objectives/Goals</b> The purpose of my science fair project was to see if distractions\multi-tasking altered the time it took at seventh grader to take a test. This topic interested me because nowadays, many teenagers listen to music, watch TV, and are on Facebook while doing their homework. (I'm one guilty of this as well!) Yet, I wondered if multi-tasking between all those tasks was really helping or hurting us. Sure, most think that it gets many things done at once, but does it really? When you try to be efficient and do multiple things at once, do you really distract yourself and make it harder to complete both tasks? Do all these electronics actually slow us down, therefore taking a longer time to get something done? My hypothesis for this experiment was if a group of seventh graders take a timed, four-question test (one multi-tasking, one silent) then, the average of the student's times, as measured in seconds, will be higher with distractions.	
<b>Abstract</b>	
<b>Methods/Materials</b> Procedure: 1) Get a desk in a quiet, outdoor area. 2) Get all materials needed (notebook, test, pencil, timer). 3) Call students out of class one by one for trial #1 (nodistractions). 4) Make sure to write down name and time for this trial. 5) Set up trial #2 (notebook, different test, pencil, timer, movie, laptop, iPod). 6) Call same students out one by one for trial #2 (distractions). 7) Make sure to write down name and time for this trial. 8) Gather all data and compare.  Materials: 1) a quiet, outdoor area; 2) seventh grade students; 3) 2 desks; 4) notebook; 5) pencil; 6) timer; 7) laptop; 8) movie; 9) iPod; 10) 2 different four-question tests.	
<b>Results</b> The results were the average time it took a seventh grader to take a test was actually lower with distractions! The average time for Class #1 Trial #1 was 28 seconds. The average time for Class #1 Trial #2 was 24 seconds. The average time for Class #2 Trial #1 was 29 seconds. The average time for Class #2 Trial #2 was 26 seconds.	
<b>Conclusions/Discussion</b> My project's results show that my hypothesis was not supported by the data collected. If I were to do this experiment again, I would give myself more time. Also, maybe adding more distractions or unfamiliar distractions would be better as well. I could take this experiment to a different level by doing male vs. female too. Altogether though, I had a really fun time doing my project, and sure learned a lot about distractions and multi-tasking in teens.	
<b>Summary Statement</b> The objective of my project was to determine if multi-tasking altered the time it took a seventh grader to take a test; many technological advances have made teenagers want to be online and on their phones while doing homework.	
<b>Help Received</b> Teacher let me use her students for project	



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<b>Name(s)</b> <b>Abigail M. Klein</b>	<b>Project Number</b> <b>J0413</b>
<b>Project Title</b> <b>Does the Color of Food Affect Its Taste?</b>	
<b>Objectives/Goals</b> The purpose of my experiment is to determine whether the color of food influences our perception of how they taste.	<b>Abstract</b>
<b>Methods/Materials</b> 1.I began by making my different colors of soda (purple, red, normal/clear, and green). This step was fairly easy, because all I needed to do was add a certain amount of food dye and make sure that the colors looked like they were close to the same colors as a commercial brand soda. 2.Second, for the fries, I cut one potato, then took half the uncooked fries and placed them in black food dye. 3.Then I mixed the pudding in a large bowl. 4.Fourthly, I baked both colored and regular fries together on the same pan for 30 minutes with some light oil and salt at 400° F.  1.For the experiment, I placed each of my test subjects alone in a room.I gave each of them a pencil and a sheet of questions for them to answer after finishing eating a certain food group. The questions asked them what they thought of the different items in the section (ex. Was there something about each of the sodas that you particularly liked or disliked. Why?). 2.When a subject was in the room, I gave them one sample of each food item at a time. I did this so my subjects could not try a food more than once, then figure out that they were all the same. 3.I then gave them the sodas. First red,then purple,next original with no dye,then lastly green.Each subject was given 1.35 ounces of each soda. 4.After the soda section was complete, subjects were given 1 tbs. of each pudding. Vanilla first then "chocolate". 5.The last food section subjects were given were fries. I gave them three black then normal.	
<b>Results</b> Soda: 3 subjects recognized sameness, others preferred one of the 4 colors. Fries: 2 thought they were the same, only 1 preferred the black to the regular. Pudding: 1 recognized they were the same, all others preferred vanilla.	
<b>Conclusions/Discussion</b> I found out that my hypothesis was proven. I say this because at least 5 of my subjects did taste a difference in any of the foods used(every food in each category was the same). I also discovered that when testing families or two people related, that their test results were similar. By my research, I found that it could be hereditary for you to have close to or same taste recognition as a blood relative.	
<b>Summary Statement</b> To see is people's perception of taste is influenced by the colors of foods.	
<b>Help Received</b> My Father helped me buy materials, set up test, and do as well as discuss some of the research.	



**CALIFORNIA STATE SCIENCE FAIR  
2012 PROJECT SUMMARY**

<b>Name(s)</b> <b>Ariele Ladabaum; Ben Ladabaum</b>	<b>Project Number</b> <b>J0414</b>
<b>Project Title</b> <b>San Carlos Teens Solve National Debt Crisis</b>	
<p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives/Goals</b> The objective of our experiment was to see if the perception and/or experience of economic mobility affected whether research subjects would want the highest income earners to get a tax increase as one of the solutions to pay off national debt.</p> <p><b>Methods/Materials</b> We conducted a simulation with two rooms. In Room 1, a scenario was designed to create a perception of very low economic mobility, and no experience of economic mobility (Group 1.) In Room 2, a scenario was designed to create a perception of high economic mobility, and for half of the subjects, also experience of economic mobility (Groups 2 and 3.) All subjects went through four rounds, each representing one pretend economic year, in which they could receive a raise. In order to create the different groups, we rigged how many subjects in each room got raises during each round. At the end of the four rounds, all subjects were asked about their perception of economic mobility and whether they agreed with giving the highest income earners a tax increase as part of a solution to pay off national debt.</p> <p><b>Results</b> 62% of the subjects in Group 1 were in favor of the tax increase. 78% of the subjects in Group 2 were in favor of the tax increase. 80% of the subjects in 3 were in favor of the tax increase. Although these results could be due to chance, the trend was the opposite of what we hypothesized.</p> <p><b>Conclusions/Discussion</b> More of the subjects who had perception and experience of economic mobility were in favor of the highest income earners receiving a tax increase than the subjects who did not have perception or personal experience of economic mobility. Our results could have occurred the way they did because the subjects in groups 2 and 3 thought that if they earned more money, they should be taxed more.</p>	
<b>Summary Statement</b> We conducted a rigged simulation to see whether the perception and/or experience of economic mobility affected subjects' willingness to give the highest income earners a tax increase.	
<b>Help Received</b> Our dad taught us how to use functions on Excel. We also had some help from our parents in developing the idea and study design. Our parents read the components of our poster and gave us suggestions on certain parts.	



**CALIFORNIA STATE SCIENCE FAIR  
2012 PROJECT SUMMARY**

<b>Name(s)</b> <b>Larkin A. Levine</b>	<b>Project Number</b> <b>J0415</b>
<b>Project Title</b> <b>Teens and the Media</b>	
<p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives/Goals</b> My goal for this project was to test the affects of media/commercials on 12 and 13 year old kids. Media is a huge part of the average teen and preteens life. We spend most of our time on our computers, phones, or watching our TV's. We see ads everyday and they all have one thing in common. They are all trying to get us to buy that product. My objective was to dig in deeper to this concept and really try to see how these adds or in my case commercials affect 12 and 13 year old teens and preteens and how they look at there self body image.</p> <p><b>Methods/Materials</b> I created a survey of 21 questions about kids self body image. For most of the questions there were five possible answers: strongly agree, somewhat agree, in the middle, somewhat disagree, and strongly disagree. About half of the children that took the survey were instructed to watch four commercials before taking the survey. The other half just took the survey. Most of the questions were related to the topics in the commercials. I then compared the answers of the people that watched the commercials to the ones that did not.</p> <p><b>Results</b> I had varying results. On some of the questions asked on the survey the people that watched the commercials were more self conscious than the ones that did not and visa versa. In some cases the majority of people that watched the commercials had the same answers as the majority of people that did not watch the commercials.</p> <p><b>Conclusions/Discussion</b> In the end I deemed my results inconclusive. I found that there was know way to come to a substantial conclusion from the varying data that I gathered. I also looked back at my data and compared the answers according to gender. I found that in all cases except for one girls were ether more self conscious or tied with the boys. The only question that the boys were more self conscious was "I wish I had more Muscle."</p>	
<b>Summary Statement</b> How comercials affect the way 12 and 13 teen year old childern look at there self body image.	
<b>Help Received</b> Teacher: come to conclusion and find how to graph data. Dad: Edit papers and lay out board.	



**CALIFORNIA STATE SCIENCE FAIR  
2012 PROJECT SUMMARY**

<b>Name(s)</b> <b>Hanna E. Maillard</b>	<b>Project Number</b> <b>J0416</b>
<b>Project Title</b> <b>It's Not Easy Being Green! An Experiment on the Convenience of Recycling at a Green School</b>	
<b>Abstract</b> <b>Objectives/Goals</b> The purpose of my project is to determine if the convenience of recycling effects the degree to which students recycle, even at a Green School where students have previously received education about recycling and the behavior is reinforced. <b>Methods/Materials</b> The recycling behavior of 5th-8th graders at a private school, which is designated by the County as a 'Green School', was observed on 3 days over a 4-week period. In Week 1, baseline data was collected. In Week 2, half of the usual recycling bins were removed and the number of beverage containers ending up in the trash and recycling bins were recorded. In Week 3, all of the recycling bins were removed, leaving only the usual, large recycling cans in place, and data was recorded. <b>Results</b> At baseline, 88% of the beverage containers ended up in the recycling and 12% ended up in the garbage. When half of the recycling bins were removed, 29% of the containers ended up in recycling, compared to 71% which ended up in garbage. When all recycling bins were removed, only 9% of the containers ended up being recycled and the remaining 91% ended up in the trash. One of the most startling findings was that the majority of students were unwilling to walk an additional 5 steps to the large recycling cans after dropping off their lunch trays, and instead, threw their recyclables in the garbage. <b>Conclusions/Discussion</b> Overall, my hypothesis was supported and the experiment demonstrated that students only recycle when it is convenient, even at a Green School. With this information, our educational efforts need to be more focused on increasing intrinsic motivation for helping the environment, not just reinforcing behavior. There is also a great opportunity to help students be aware that most of the time when we 'do the right thing', it takes effort and helping the environment is no different...it is worth taking the extra 5 steps!	
<b>Summary Statement</b> The project examines whether students' recycling behavior is influenced by how convenient recycling is made for them, even at a Green School where recycling behavior is reinforced.	
<b>Help Received</b> Mother and friend helped collect garbage/recycling; Mother helped edit report; Principal and teachers were supportive.	



# CALIFORNIA STATE SCIENCE FAIR 2012 PROJECT SUMMARY

<b>Name(s)</b> Megan N. McQueen	<b>Project Number</b> <b>J0417</b>
<b>Project Title</b> <b>That's Uncanny! Gender in the Uncanny Valley</b>	
<p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives/Goals</b> The objective is to determine how the gender of a subject affects the way he or she responds to human-like androids that can be categorized as belonging to the Uncanny Valley. The Uncanny Valley is a theory in the field of robotics and computer animation that states: "When human replicas look and act almost, but not perfectly like human beings, it invokes feelings of revulsion among human observers."</p> <p><b>Methods/Materials</b> 25 male and 25 female participants were surveyed, 14 images of progressively more human-like androids/digital animation were gathered via the Internet, and a notebook was used to record survey data. Each participant was shown the 14 images one by one and asked to rate them on a familiarity scale from -5 to 5, (-5 being highly repulsive, and 5 being very appealing). Familiarity is a measure of human attraction and positive feelings towards any certain object. High familiarity describes something/someone that is appealing and attractive to humans, and a low familiarity describes an object that is not appealing or comforting at all.</p> <p><b>Results</b> Females responded with more dramatically negative responses than males towards images of humanoids categorized under the Uncanny Valley. Like-wise, females had more positive responses towards images of real human beings or appealing, simplistic human-like androids. The results were not surprising, in part, because females have shown to have a higher rate of facial recognition than males, allowing for female subjects to better recognize images in which a humanoid's facial expression or appearance looked "off."</p> <p><b>Conclusions/Discussion</b> My conclusion is that female participants respond more negatively to Uncanny Valley humanoids than male participants, whose responses were less extreme, both positive and negative, than female participants. This supports my hypothesis and helps us to better understand the way in which different genders respond or interact with artificial human beings. As animation and robotic human beings are being integrated into everyday life in areas such as entertainment, warfare, medical fields, research in human behavior, and to perform tasks that would otherwise be too dangerous for an actual human being, it is important to understand the way we respond and behave towards humanoids.</p>	
<b>Summary Statement</b> I surveyed both male and female participants in order to determine if gender affects the degree of emotional response to images of life-like human replicas used in the field of animation and robotics.	
<b>Help Received</b> Mentor: Karl F. MacDorman, Associate Professor in the Human Computer interaction program, Indiana University	



**CALIFORNIA STATE SCIENCE FAIR  
2012 PROJECT SUMMARY**

<b>Name(s)</b> <b>Brenda M. Pack</b>	<b>Project Number</b> <b>J0418</b>
<b>Project Title</b> <b>Can Girls Correctly Identify the Difference Between Real and Fake Smiles Better than Boys Can?</b>	
<p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives/Goals</b> The objective of this project was to determine if girls could correctly identify the difference between real and fake smiles while being shown pictures of them, better than boys could while being shown the same pictures.</p> <p><b>Methods/Materials</b> Five people were asked to have two pictures taken of them, a real smile, and a fake smile. Then the pictures were shown to fifty different women and fifty different men all of which were between the ages of twelve to fifty six. They were then asked to fill out a questionnaire about which smile they thought was real.</p> <p><b>Results</b> The results show that the girls could, in fact, correctly identify the difference between real and fake smiles better than boys could. The overall average of real smiles that girls got correct was 3.8 out of 5, ( 76%), while the boys got 2.58 out of 5 correct, ( 51.6%).</p> <p><b>Conclusions/Discussion</b> The reason that the boys scored lower than the girls may have been due to the boys being less interested in participating in the study.</p>	
<b>Summary Statement</b> This project was conducted to determine if girls can identify the subtle differences of the faces muscles used to make real and fake smiles better than a boy would be able to.	
<b>Help Received</b> My science teacher and my parents helped me with the writing of my lab report.	



**CALIFORNIA STATE SCIENCE FAIR  
2012 PROJECT SUMMARY**

<b>Name(s)</b> Neil J. Patel	<b>Project Number</b> <b>J0419</b>
<b>Project Title</b> <b>Off Balance</b>	
<b>Abstract</b> <b>Objectives/Goals</b> My project was to determine if music has an effect on the loss of equilibrium and can cause dizziness. If so what music will cause the largest loss of equilibrium and make you the dizziest? My Hypothesis is that heavy metal music will cause the largest loss in equilibrium and make you the dizziest. <b>Methods/Materials</b> Four subjects were chosen at age groups 9 through 42. They each spun in a circle at 1 revolution per second without music, and with their eyes open for 1 minute. The subjects then tried to follow a pencil with their eyes that was moved side to side across their plane of sight and counted the nystagmus. This was a control test. The same process was repeated for the heavy metal, classical, and country music. All subjects listened to the music at full volume. The whole experiment was performed twice to ensure accurate results. <b>Results</b> The heavy metal tests proved that heavy metal music causes the largest loss in equilibrium and makes you the dizziest. The other types of music had a low consistent count of nystagmus. <b>Conclusions/Discussion</b> I conclude that music can cause a loss in your equilibrium. Heavy metal music will have the most drastic effect and the country and classical music will not effect you as much.	
<b>Summary Statement</b> Music can cause a loss in equilibrium and can have a potentially drastic effect on your vestibular system.	
<b>Help Received</b> Mother and sister helped me with the exhibit decoration.	



**CALIFORNIA STATE SCIENCE FAIR  
2012 PROJECT SUMMARY**

<b>Name(s)</b> <b>Matthew P. Saenz</b>	<b>Project Number</b> <b>J0420</b>
<b>Project Title</b> <b>Do As I Say, Not As I Do: Does Medical Knowledge Improve Drug Compliance?</b>	
<b>Abstract</b> <b>Objectives/Goals</b> To study the compliance pattern of the most medically knowledgeable and educated group (physicians) compared to that of non physicians. <b>Methods/Materials</b> Twenty subjects- 10 non physicians and 10 physicians were given a week's worth of vitamin D tablets. These tablets were placed in pill containers labelled Monday-Sunday. One tablet was placed in each compartment. Subjects were instructed to take 1 vitamin tablet per day. <b>Results</b> Twenty subjects completed the study. The physician group missed an average of 1.3 pills while the non physician group missed an average of 0.3 pills. Also, non college educated subjects missed an average of 0.4 pills while those who completed at least a college education missed 1.0 pills. <b>Conclusions/Discussion</b> This study was an investigation of factors affecting a serious public health problem-drug non compliance. One major element is the educational level of subjects. Many studies suggest that more educated people lead healthier lifestyles and are as a result, healthier. This study, however, seemed to indicate that higher educational level was actually associated with worse compliance.	
<b>Summary Statement</b> This study will attempt to prove whether medical knowledge is an effective and worthwhile method towards the improvement of drug compliance.	
<b>Help Received</b> Father helped nail in titles and laminate the display	



**CALIFORNIA STATE SCIENCE FAIR  
2012 PROJECT SUMMARY**

<b>Name(s)</b> <b>Sara J. Simon</b>	<b>Project Number</b> <b>J0421</b>
<b>Project Title</b> <b>Newsflash: Teenagers Choose Cell Phones over Brain Cancer</b>	
<b>Abstract</b> <b>Objectives/Goals</b> My objective of my Science Fair Project is to warn the population about brain cancer and cell phones. My dad passed away from brain cancer and I want to share my family's story about our personal experience and combine that with the knowledge that I have learned. I think this is a very important topic that people should know about, and I am very excited to be the one to share that. <b>Methods/Materials</b> I tested fifty students of the age between 13 and 16 in my study hall classroom. My main materials were 8x10 white printer paper, a Lexmark printer, a MacBook Pro laptop, test #1, and test #2. <b>Results</b> The main question of my project was: If teenagers knew the risks of brain cancer would they change their ways? When looking at the results between the first and second questionnaire, teenagers did not change their ways as predicted. But, they did change their thoughts on the topic, which is very important as well. I was not surprised of these results. <b>Conclusions/Discussion</b> The conclusion of my science fair project was that teenagers do not want to spend the time and energy learning about something new, even if it's important. They have always something on their mind and don't have time to listen to news like this. But, once the teenagers watched the video, it did change their thoughts on brain cancer and cell phones. They were than all aware that cell phones are dangerous and are something that you should be paying closer attention to.	
<b>Summary Statement</b> My project is testing whether to see if teenagers would change their ways if they knew about the risks of cell phone and brain cancer.	
<b>Help Received</b> I got together with my father who's a neurologist and his Neuro- Oncologist, Dr. Kesari after I had done my research to receive extra information	



**CALIFORNIA STATE SCIENCE FAIR  
2012 PROJECT SUMMARY**

<b>Name(s)</b> <b>Emma C. Spaeth</b>	<b>Project Number</b> <b>J0422</b>
<b>Project Title</b> <b>Supersized: Can Teenagers Measure Serving Sizes?</b>	
<p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives/Goals</b> My project was to determine whether teenagers can accurately measure one USDA recommended serving size of milk and cereal.</p> <p><b>Methods/Materials</b> Collected Informed Consent Forms from 31 participants with ages ranging from 12 to 18, of which 19 were girls and 12 were boys. Each participant completed a survey testing their knowledge of serving sizes and their nutritional habits. Each participant was then directed to pour one USDA serving size of cereal into Bowl 1 (12 oz) and then again into Bowl 2 (24 oz). Each participant was then directed to pour one USDA serving size of milk into Cup 1 (9 oz) and then again into Cup 2 (18 oz). I measured and recorded the contents of each container. I compared the data collected to the amount recommended by the USDA as one serving size.</p> <p><b>Results</b> From the survey, participants were pretty good at estimating the number of calories in a serving size of cereal and milk. They overestimated number of cups of milk and cereal in a USDA recommended serving size. Participants , on average, poured one USDA recommended serving size of cereal correctly into Bowl 1 (the smaller bowl) and, on average, overestimated one serving size by 25% with Bowl 2 (the larger bowl). Participants, on average, underestimated a serving size by 23% with Cup 1 (the smaller cup) and underestimated one serving size of milk by 8% with Cup 2 (the larger cup). Generally, males were likely to pour more than females.</p> <p><b>Conclusions/Discussion</b> Teenagers are confused when it comes to understanding serving sizes. First, they overestimate by a lot when asked what a serving size is. Second, they don't pour what they estimate a serving size to be. Third, the amount they pour seems to be influenced by the size of the container they are pouring into.</p>	
<b>Summary Statement</b> My project was to determine whether teenagers can accurately measure one USDA recommended serving size of milk and cereal.	
<b>Help Received</b> I received help from my older brother. He helped me to consider different types of graphs and charts to help analyze my data. My mom and dad helped me organize my board.	



**CALIFORNIA STATE SCIENCE FAIR  
2012 PROJECT SUMMARY**

<b>Name(s)</b> <b>Heidi K. Van Beek</b>	<b>Project Number</b> <b>J0423</b>
<b>Project Title</b> <b>Color vs. Taste</b>	
<b>Abstract</b> <b>Objectives/Goals</b> The purpose of my project was to find out whether or not the color of a drink affect's a person's perception of taste. <b>Methods/Materials</b> I had to do two trials because the first trial had too many errors. On the first trial I made sugar water and flavored it with flavored (candy making)oils. The biggest problem was that the flavored oils seperated from the sugar water and most of the individual samples ended up being just sugar water. On my next trial I used clear, sugar-free flavored seltzer water. I then added colors to some of the seltzer water. I had twelve samples using four different flavors of seltzer water in different combinations with four different colors; four samples I left clear, four were mis-matched colors for flavors, and four had colors that matched the flavors, red for strawberry and cherry, purple for grape, and orange for orange. I had ten participants sample all twelve of the color and flavor combinations and report what flavor they thought they were tasting. <b>Results</b> My results showed that color does affect perceived taste and that without color or a label participants were often very confused about the flavor. When the color didn't match the flavor, there were similar results to the samples without color. When the color did match the flavor the participants were much more successful in identifying the flavors. <b>Conclusions/Discussion</b> My hypothesis was that the color would affect perception of taste and my results proved my hypothesis was correct. When I tasted the clear seltzer waters I was concerned that my second trial would also fail because the flavors seemed too obvious and I didnt think color, or lack of color, would cause confusion. I was very supriised that during testing participants were very confused and it was exciting to see my project working.	
<b>Summary Statement</b> When tasting a sweetened drink, does the sense of sight (color) affect your sense of taste?	
<b>Help Received</b> My parents helped set-up sample cups for participants.	



**CALIFORNIA STATE SCIENCE FAIR  
2012 PROJECT SUMMARY**

<b>Name(s)</b> Aaron P. Wapner	<b>Project Number</b> <b>J0424</b>
<b>Project Title</b> <b>Do Adolescents Know How to Live Healthy Lifestyles, and Do They Put That Knowledge into Action?</b>	
<p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives/Goals</b> The objective is to obtain information regarding adolescent#s knowledge of healthy eating and physical activity, and compare this data to what the adolescents actually do themselves in terms of healthy eating and physical activity. Also, to obtain information on what factors and methods motivate early adolescents to live healthy lifestyles.</p> <p><b>Methods/Materials</b> 155 questionnaires were printed and given to students at Marshall Middle School. Also, Microsoft Excel 2003 was used to organize and compute data.</p> <p><b>Results</b> 54% of adolescents knew the proper amount of nutritious foods to eat every day. However, 21% actually consumed the proper amount of nutritious foods. 65% of adolescents knew how much daily physical activity should be obtained, but surprisingly, 94% obtained the proper amount of physical activity. Finally, the majority of the adolescents looked to themselves for motivation.</p> <p><b>Conclusions/Discussion</b> Over half of the adolescents knew what healthy foods they should be eating, but less than a quarter actually consumed it. This may be because they are not motivating themselves to eat healthy foods. 65% of the adolescents knew the proper amount of daily physical activity, and 94% obtained the right amount of physical activity. This may be because they are getting the physical activity in their school's physical education classes. Most adolescents looked to themselves for motivation; however, they may not be motivating themselves enough because only 21% consumed the right amount of healthy foods.</p>	
<b>Summary Statement</b> This questionnaire was designed to determine if adolescents know the requirements for proper nutrition/exercise, if they met those requirements, and to determine what motivates them to live healthy lifestyles.	
<b>Help Received</b> Dr. Patricia Cantrell (pediatrician) helped develop the idea and was interviewed by the experiment conductor, Mother, Father, school science teacher helped edit papers.	



**CALIFORNIA STATE SCIENCE FAIR  
2012 PROJECT SUMMARY**

<b>Name(s)</b> <b>Blake A. Wilson</b>	<b>Project Number</b> <b>J0425</b>
<b>Project Title</b> <b>Color and Blood Pressure</b>	
<b>Abstract</b> <b>Objectives/Goals</b> My project was to determine if color has an effect on blood pressure. I believe that out of the six colors (blue, red, black, white, green and yellow) chosen to test; red and black would increase blood pressure. These two colors represent danger, blood and death and will have an impact on blood pressure. <b>Methods/Materials</b> Five male participants around the same age were chosen to be tested. The participants were first brought into a room to rest for 15 minutes. After the rest period, all males had their initial blood pressure taken and recorded. Then individually, they were brought in and seated comfortably in front of a computer monitor where they stared at a specific color for a three minute period. Their blood pressure was again taken and recorded and any variation from the original was noted. The procedure was repeated until all colors had been tested. <b>Results</b> During the testing of the six colors, there was some increase and decrease noted. However, the effects the colors had on the blood pressure did not produce the same results on all participants. <b>Conclusions/Discussion</b> My conclusion is that the color red did impact two out of the five participants by raising their blood pressure. While the other colors tested, did not have dramatic influence on blood pressure.	
<b>Summary Statement</b> My project was to determine if blood pressure could be changed by any specific color.	
<b>Help Received</b> Mother helped type out report and assemble both the display and Lab Book. Father, applied EKG electrodes to all five participants and printed out EKG strips.	



**CALIFORNIA STATE SCIENCE FAIR  
2012 PROJECT SUMMARY**

<b>Name(s)</b> <b>Kally D. Zheng</b>	<b>Project Number</b> <b>J0426</b>
<b>Project Title</b> <b>The Effect of Age on Ability to Predict Personalities by Analyzing Handwriting</b>	
<p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives/Goals</b> The purpose of my experiment was to discover if average people, out of three age groups (adolescent, young adult and middle aged adult), contained the ability to predict a person's character by analyzing their handwriting, and which age group could most accurately do this.</p> <p><b>Methods/Materials</b> I chose 10 handwriting samples which were best suited for my project. Then I wrote one personality description for each of the ten handwriting sample providers. Next, I verified the accuracy of the descriptions and modified them accordingly. I created a test in which people from each age group of adolescent (12-19), young adult (20-44), and middle age (45-65), would attempt to correctly match the acquired handwriting samples and written personality descriptions. I measured and compared the percentages of accurately matched descriptions and samples for each age group and handwriting sample.</p> <p><b>Results</b> The percentages of accuracy for each age for each age group did not vary drastically. The overall percentages of difference for each age group carried from 13.5 percent to 14.8 percent. The percentages of accuracy for handwriting sample A were just below 50 percent. This varied with the percentages of accuracy of the other nine samples whose percentages varied from 0 percent to 26.6 percent.</p> <p><b>Conclusions/Discussion</b> My hypothesis ( The average person has the ability to predict personalities by analyzing handwriting and that the adolescent age group can most accurately perform this task), was rejected by the data found in my project. From the results of this experiment I did not find support that age affects one's ability to match handwriting samples and personalities correctly. Additionally, I did not find information which implied that the average person could decide a person's character by analyzing their handwriting.</p>	
<b>Summary Statement</b> The differences in accuracy of average people out of three psychological developmental age groups in ability to determine one's personality by analyzing their handwriting.	
<b>Help Received</b> My science teacher made me aware of another style in which I could use to write the conclusion for my project	



# CALIFORNIA STATE SCIENCE FAIR 2012 PROJECT SUMMARY

<b>Name(s)</b> <b>Alexa R. Crabb</b>	<b>Project Number</b> <b>J0498</b>
<b>Project Title</b> <b>Does Name Influence Personality Type?</b>	
<p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives/Goals</b> The objective of this experiment was to determine if there is a correlation between a person's first name and their personality type (introvert or extrovert). The hypothesis was that people with unusual first names would have an extroverted personality type and people with common first names would have an introverted personality type.</p> <p><b>Methods/Materials</b> A survey was given to 121 high school students. The survey, which was based on the Myers-Briggs Personality Type Inventory, was used to determine if students' personalities were introverted or extroverted. Other information gathered was each student's first name and birth year. Common names were defined as names being in the top 20 of the students given birth year. Unusual names were defined as names being below the top 100 of the students given birth year. After dividing students by personality type (introverted, extroverted and undetermined) and name types (common, unusual and undetermined) they were tested to see if there was any correlation between the two.</p> <p><b>Results</b> Of the 121 students surveyed, there were 32 students with common first names (as determined by the top 20 names in the students birth year on the Social Security website). Of these 32 students with common first names, 76% identified themselves as introverts, 20% as extroverts and 4% were undetermined (had an equal number of true and false statements on the inventory). There were 29 students with undetermined names (number 21-99 names on the Social Security website). Of these 29 students 56% identified themselves as introverts, 39% extroverts and 5% undetermined. There were 60 students with unusual first names (as determined by being below the top 100 names of the students birth year on the Social Security website). Of these 60 students, 62% identified themselves as introverts, 25% as extroverts and 13% were undetermined personality types.</p> <p><b>Conclusions/Discussion</b> The data compiled showed no clear correlation between a person's name and personality type. The population of students tested had a high percentage of introverted personality types at 70%; 29% were extroverted and 1% were undetermined personality types. In addition, a high percentage of students had unusual first names at 50%. Twenty-six percent of the students had common names and 24% were in the undetermined group. If this inventory were given to a wider population of people the conclusion of this experiment may change.</p>	
<b>Summary Statement</b> The purpose of this project was to determine if there is a correlation between a person's first name and their personality type, in particular, whether they are an introvert or extrovert.	
<b>Help Received</b> My mother distributed surveys to her high school students at Ghidotti Early College High School.	



**CALIFORNIA STATE SCIENCE FAIR  
2012 PROJECT SUMMARY**

<b>Name(s)</b> Gracie C. Suenram	<b>Project Number</b> <b>J0499</b>
<b>Project Title</b> <b>Unwrapped: Is a School Hot Lunch Served on a Plate More Appetizing?</b>	
<p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives/Goals</b> The objective of this experiment was to discover which presentation of a school hot lunch, whether the lunch was on a plate, a tray or in the pre-packaging, would be more appetizing to Kindergarten-8th grade students. The hypothesis stated that the students would find the hot lunch served on the plate the most appetizing.</p> <p><b>Methods/Materials</b> Pictures were taken of three separate lunches (cheese pizza, French toast, and a chicken patty and bun), with each one on a plate, a tray, and in the pre-packaging. The pictures were then put into a PowerPoint, with the three pictures of the same lunch on the same page. A form was then created that said Lunch 1, Lunch 2 and Lunch 3 down the side and next to the lunches, 1(pre-packaging) 2(tray) 3(plate). The PowerPoint was shown to approximately 200 Kindergarten-8th grade students who circled the preferred lunch presentation out of the three pictures on each slide of the PowerPoint on the form. The data was collected and put into tables and graphs.</p> <p><b>Results</b> After the experiment was performed, it was found that for two out of three lunches that students preferred the lunch on the plate. For one lunch, they preferred the tray. Very few students favored the lunch in the pre-packaging.</p> <p><b>Conclusions/Discussion</b> It was concluded that most students prefer a hot lunch on a plate than on a tray or in the pre-packaging. The least appetizing is to serve a hot lunch in the pre-packaging. The researcher believes that this was because the students associate the pre-packing with the lunch looking and tasting unappetizing. A trend that was noticed is that the Kindergarten-2nd graders had the most amounts of students preferring the prepackaging. The researcher believes this is because the younger students haven't had as much exposure to the school hot lunches as the older students and don't associate the lunches with being distasteful.</p>	
<b>Summary Statement</b> The object of this study was to find out if students in the Kindergarten-8th grades preferred hot lunches on a plate, tray or in the pre-packaging, and it was found that 2 out of 3 times the students preferred the lunch on a plate.	
<b>Help Received</b> Mother helped edit report.	