

Category: Product Testing & Consumer Science

Student Name: Chris Adair

Team Members (if any):

Project Title: Does color effect the taste of food

Abstract: I tried to find out if different colored food would effect how it tasted by testing 11 people. I had them eat the normal food one day and then food colored them the next.

Category: Product Testing & Consumer Science

Student Name: Nicholas Andriese

Team Members (if any):

Project Title: GOT MILK (but can you tell the difference)?

Abstract: Question: I a blind taste test, can people tell the difference between whole milk, 1% milk, 2% milk, half and half, and skim milk? Hypothesis: Im guessing that none of the participants in a blind taste test will be able to identify all 5 different types of milk. Method: I collected my five different types of milk, did my research, then got my supply (a blind fold, a measuring cup, a tally sheet or data sheet, and offcourse the different types of milk) now I was ready to experiment. I had each subject before they did the experiment blindfolded and sitting in a chair, while they were blindfolded I wrote up a "master mind" sheet so that the cup would be in a random order the couldn't think of any guessing patterns. After I experimented with them I showed them the results. Results: Two people identifed all the milks correctly but the four other didnt even get more than half of the milks right so the result kind of went two ways but in my hypothesis I said no one could guess them all right."

Category: Product Testing & Consumer Science

Student Name: Jared Araujo

Team Members (if any):

Project Title: Tough Beans

Abstract: I wanted to find out which substance will speed up the softening for faster cooking of lima beans better. 8 different substances were tested and 8 different beans for a total of 64 trials. My hypothesis was that the chopped tomatoes would be the substance that will speed up the softening of the beans. I soaked the lima beans in regular water in a large container overnight for 10 hours. After draining the water I cooked the lima beans in the different substances. Then I got a paper cup, the cheese slicer, and a cutting board to test their softness. I tested each lima bean from each substance by adding coins to the cup to determine how much weight would take to cut a bean all the way through. I concluded that my hypothesis was close but not accurate. I found out that the baking soda is the substance that speeds up the cooking of lima beans the most! The second substance was the chopped tomatoes. Milk came into third place. Other substances follow in this order: Molasses, salt, sugar, regular water and vinegar.

Category: Product Testing & Consumer Science

Student Name: Madeleine Arnold

Team Members (if any):

Project Title: Is What You See What You Taste?

Abstract: QUESTION: Does our visual sense affect the way our taste sense detects flavor? HYPOTHESIS: If the color does not match the expected flavor, then the sense of taste will be confused. METHODS: Flavoring, food coloring, sugar and water were mixed to create eight drinks. Drinks were visibly displayed in clear cups in two rows: one row of four drinks with non-matching (e.g. green root beer) colors and flavors, and a second row of four drinks with matching (e.g. brown root beer) colors and flavors. The same four flavors were used in both the first and second rows, in the same order. Twenty participants, with no knowledge of what flavorings were used, tasted the drinks and identified each flavor. RESULTS: Drinks with matching color and flavor had a much higher percentage of correct flavor identification than drinks with non-matching color and flavor. For example, brown root beer was correctly identified 65% of the time. When the root beer was green, only 30% identified it as root beer, while another 30% thought it was either mint or apple! Interestingly, 25% of participants tasting watermelon colored purple identified it as grape. When watermelon drink was colored pink, it was never identified as grape. Also, green apple flavor colored green was correctly identified by 35%. Green apple colored pink was never correctly identified as green apple. CONCLUSION: Hypothesis is proven to be correct. Our sense of sight really does affect our sense of taste!

Category: Product Testing & Consumer Science

Student Name: Cassidy Ascione

Team Members (if any):

Project Title: Eww! Is that... Cheese?

Abstract: What household products slow or eliminate mold growth on cheese? I think that mold will slow mold growth the best. Using 7 products I tested which one would best inhibit the mold growth on cheese. I did my observing for several days to come up with my results. It turned out that the mold a mildew remover Slowed or eliminated mold growth the best. So my hypothesis was incorrect, but bleach didn't let much mold grow on the cheese.

Category: Product Testing & Consumer Science

Student Name: Ryley Bailey

Team Members (if any):

Project Title: Minimizing my Carbon Footprint

Abstract: The question I was trying to solve for my science project was: What are the major differences between an incandescent and fluorescent light bulb. My hypothesis was that fluorescent bulbs are better for the environment. I used a sensors lab and tested the heat, light output of the two kind of bulbs. Then I found the cost of the bulbs and how quickly a fluorescent bulb pays for itself in use. I wanted to know how I could do something to help the environment, and it turned out that I could do my part by using fluorescent bulbs. They were better light output, less heat output, and more cost efficient. Fluorescent bulbs help save earths resources.

Category: Product Testing & Consumer Science

Student Name: Mallory Bangerter

Team Members (if any):

Project Title: Is playing Wii really good for your heart?

Abstract: I wanted to find out which Wii game was best for your heart. Many games claim to be good, but which one is the best? My hypothesis was that active Wii games like Boxing from Wii Sports, Dance Dance Revolution, and Running from Outdoor Challenge will increase heart rate and blood pressure more than traditional video games like Mario Kart. Twelve people played each game for about 3 minutes. Blood pressure and heart rate were checked before and after playing the different games using a blood pressure monitor. The person had to wait 10-15 minutes between games to let their heart rate and blood pressure return to normal. I wanted to compare the change in heart rate and change in blood pressure. The change was calculated by taking the value after playing the game and subtracting the value before playing the game. I then compared the average changes in heart rate and blood pressure for the four Wii games. The best game for your heart was Running, then Boxing, then Dance Dance Revolution, and finally Mario Kart. This order was the same for both change in heart rate and change in blood pressure. For change in heart rate, Running was about 3 times better than Boxing, Boxing was about 3 times better than Dance Dance Revolution, and Mario Kart really didn't change heart rate.

Category: Product Testing & Consumer Science

Student Name: Alyssa Beltran

Team Members (if any): Alyssa Beltran, Sara Jeffs

Project Title: The strongest Paper Towel

Abstract: The strongest Paper Towel We thought that the 2 ply paper towels would be stronger either wet or dry. To test this we took 4 different brands of paper towels and put them in trays. One person held the four corners while the other person gently put the 1 oz. marbles in one at time. They all held 35 1 oz. balls when they were dry. Next we put 4 new paper towels in the trays and put 1 tbs. of water on each paper towels at a time until each one had 4 tbs. each. Then we held the four corners again and gently put in the marbles until the towel broke. Then we counted the marbles. We did this 3 times each. Our results showed that our hypothesis was correct. The 2 ply paper towels were the stongest wet and dry. It was interesting that the most expensive paper towel was not the stongest while the cheapest was the worst.

Category: Product Testing & Consumer Science

Student Name: Reese Blacker

Team Members (if any): Caden Lundquist

Project Title: Five a Day - A Better Way: Which storage method keeps fruits & vegetables fresh the longest?

Abstract: Question: Which storage method keeps fruits & vegetables fresh the longest? Hypothesis: Green Bags specialty storage bags will keep fruits & vegetables fresh the longest. Procedures: We purchased 4 pieces each of 12 different varieties of fruits and vegetables. Stored each variety of fruit or vegetable in four different ways: 1) No container - the fruit or vegetable sat on the refrigerator shelf in the open air. 2) The container or bag that the fruit or vegetable came from the store in. 3) Air-tight container with a lid. We used Glad brand containers. 4) "Green Bags" specialty fruit and vegetable storage bags. Took pictures and recorded data of how each fruit and vegetable was changing. we did this on day 1 day 11 day 16 day 22 and day 27. Compared data pictures and samples to see which storage method kept the fruits and vegetables fresh the longest. Conclusion: Air-tight containers kept fruits & vegetables fresh the longest.

Category: Product Testing & Consumer Science

Student Name: Caitlyn Bone

Team Members (if any): Caitlyn Bone & Megan Garside

Project Title: The Ultimate Cookie Sheet

Abstract: Purpose: Which of five cookie sheets will bake cookies the fastest? Hypothesis: We thought the insulated pan would bake the fastest, because it does not let heat rise faster from the bottom, than it does over to the tops of the cookies. This will make them bake evenly. Conclusion: Our conclusion came out to be that we were wrong, and it was actually nonstick that cooked them the fastest. We were a bit surprised with this conclusion because, with our hypothesis being the insulated pan, there is a big difference between the two. The reason the nonstick was better might have been because it was so thin, when the insulated was bigger and bulky. This experiment was one of a few other choices we had. Like we were about to see which cookie sheet burns the bottom of cookies the most, but the information on that project would be very difficult to record. So we went with the Ultimate Cookie Sheet. If people like to bake cookies a lot, the nonstick pan is the right one to go for. Not only did it cook them the fastest, but it also made some of the best tasting cookies.

Category: Product Testing & Consumer Science

Student Name: Riley Bradford

Team Members (if any):

Project Title: Getting Down and Dirty With Soap

Abstract: Which stays cleaner bar soap or liquid soap? My hypothesis is that bar soap is dirtier because it gets touched. I believe the liquid soap will stay cleaner, because you do not actually touch the liquid soap. I bought a new bar of soap and a new bottle of liquid soap. Both were antibacterial. I also purchased a science kit. The science kit included petri dishes, nutrient agar, and swabs for collecting samples. I collected samples for my control. I then set up my hand washing station and instructed people to alternate between using bar and liquid soap. I collected a new sample every two days. I would use a sterile swab for gathering each sample. I then put each sample on half of a divided petri dish. I would tape and mark the petri dishes and put them in a secure location. I put all of the petri dishes in the same location. I let the bacteria grow for three days. I then took a picture to record the growth of bacteria. I repeated this step five times. I assigned each sample a number from 1-10. Ten was the highest density of bacteria colonies and one being the lowest density of bacteria colonies. I then recorded this information on the line graph. This allowed me to see the pattern of bacteria growth from the samples. I used this information from my line graph to arrive at my conclusion. My conclusion is that soap is not as clean as you think. A liquid soap dispenser picks up a lot of germs before it

reaches our homes. Both bar and liquid soap got cleaner with use. In the end, neither bar or liquid soap stayed much cleaner than the other.

Category: Product Testing & Consumer Science

Student Name: Olivia Braiker

Team Members (if any):

Project Title: DETERGENTS - HOME MADE VS STORE BOUGHT TIDE

Abstract: The question that I was interested in answering was whether homemade laundry detergent works as well as, saves money, and has less impact upon the environment, than Tide. My hypothesis was that it would clean just as well, save money, and also, be better for the environment. I researched how to make homemade detergent, and how the ingredients differed from Tide. Then, I researched other benefits of making homemade detergent, starting with how much money could be saved. By calculating the amount of money you would spend a year on Tide and how much you would spend on homemade, I found a savings of \$120.00 a year. The second benefit of making homemade detergent is how you could help the environment. By reusing a 5 gallon bucket, you could prevent 15 Tide containers from being sent to landfills. I tested my hypothesis by washing stained socks in both detergents to check the results. What I found was that the homemade detergent was just as effective on the control, a sock I wore around the house, as the Tide. For the socks stained with grape and tomato, the homemade detergent left a barely noticeable stain. My experiment proved that homemade detergent would save \$120.00 a year and is more environmentally friendly. Although, homemade detergent did not work as well as Tide on the tough stains, it worked just as well on the control, the everyday wear. Therefore, if you pretreated the tougher stains, it will be more effective.

Category: Product Testing & Consumer Science

Student Name: Blake Bringhurst

Team Members (if any):

Project Title: Spoiled Rotten

Abstract: Do the Debbie Meyer Green Bags, designed to absorb and remove ethylene gas, really keep your food fresh for the longest period of time compared to other stored materials. My hypothesis is that the green bags will keep the food from spoiling the longest because only the green bags, unlike other storage materials, are designed to remove the harmful gas Ethylene which causes food to decay faster. My method was to purchase fresh fruit to compare the different varieties. Five bananas, five apples, and five strawberries were chosen. One kind of fruit was needed for each storage material to be tested. Note starting appearance of all fruit, take a photo, and then wrap one piece of each fruit type in the different storage materials. Materials included no wrapping, paper towel, plastic wrap, Ziploc bags, and Debbie Meyer green bags. Place the wrapped fruit in the crisper drawer of the refrigerator. Remove and unwrap all fruit items every two days from the refrigerator to take a photo and record observations for two weeks. After each observation, re-wrap the fruit and place it back in the refrigerator. For the last observation, also perform a taste test and cut the fruit open to observe and record any changes inside the fruit. My hypothesis was correct. The green bags were effective and kept the food the freshest for the longest period of time overall based on appearance, texture, and taste.

Category: Product Testing & Consumer Science

Student Name: McKella Bunn

Team Members (if any): McKella Bunn and Bailey Wilde

Project Title: Which Cleaner Works the Best

Abstract: We wanted to see if more expensive cleaners work better than cheaper ones. We thought Lysol would work best because it was most expensive and we saw it the most on TV commercials. We rubbed raw meat on a divided cutting board and let it sit for 24 hours to grow bacteria. We then cleaned each of the six sections of the board with 5 different cleaners and one with water. We then swabbed each section with a cotton swab and rubbed that into a prepared petri dish. After letting them sit for 4 days we observed the different amounts of growth in each petri dish. The petri dish from the section cleaned with Lysol had the least amount of growth and the petri dish cleaned with water had the most amount of growth.

Category: Product Testing & Consumer Science

Student Name: Steven Burdette

Team Members (if any):

Project Title: The Effects of Increasing the Water/Cement Ratio in a Concrete Mix

Abstract: In my experiment, I wanted to know what would happen if I added too much water to a concrete mix. My hypothesis was that if I added too much water, the strength of the concrete would decrease and the architectural properties would change because of the separation of rock particles. I poured 6 cylinders of concrete. I added more water to 3 of the cylinders. I used a standard concrete mix on the other 3. After the cylinders had cured, I put them in a compressor to find the PSI or strength of the concrete. I found that by adding just a little bit of water will dramatically change the strength of the concrete.

Category: Product Testing & Consumer Science

Student Name: Brayden Butterfield

Team Members (if any):

Project Title: Ice Melt or Rock Salt For Melting Ice?

Abstract: QUESTION: I live in Heber City, Utah and it is very icy outside during the winter. I wanted to see how to melt the ice the quickest. Some of my neighbors are using rock salt and others are using ice melt. HYPOTHESIS: My hypothesis was, Ice will melt faster using Ice Melt rather than Rock Salt. METHODS: I set up two bowls with strainers over the top of each bowl. I next placed 7 ice cubes in each strainer. Then I spread Ice melt over the ice in one bowl, and equal amounts of Rock Salt over the second bowl. These bowls were placed side-by-side outside in equal temperatures. These bowls were checked every 15 minutes monitoring and observing the results of each bowl and taking a digital picture. OBSERVATIONS: I observed and noticed that Ice Melt was rapidly desolving the ice and seemed to be ahead of the Rock Salt by measuring the liquid in the bowl. At one point the Ice Melt was 10ml ahead or greater liquid than the Rock Salt. At the final stages the Rock Salt passed the Ice Melt and completely melted all of the Ice. The Rock Salt melted the Ice faster by almost 30 minutes compared to the Ice Melt CONCLUSION: My Hypothesis was rejected or proven wrong because the Rock Salt Melted the Ice Faster than the Ice Melt which is opposite of my Hypothesis. PROVEN: Ice Melt Does Not Melt Ice Faster Than Rock Salt. By: Brayden Butterfield Fifth Grade Heber Valley Elementary Mr. Jorgensen / Ms. Mason

Category: Product Testing & Consumer Science

Student Name: Dallin Bytheway

Team Members (if any):

Project Title: Video Games

Abstract: There have been many studies on the effects of playing video games on behavior and health. To my knowledge, there hasn't been any studies on non violent games that may raise one's heart rate or blood pressure. My project was to compare the effects of playing a racing game versus the effects of playing an adventure game. I chose to compare Mario Kart (the racing) and Zelda (the adventure). I had human subjects play these two video games for 20 minutes each. I took heart rates and blood pressure measurements at the end of each game. I also took a resting heart rate and blood pressure on each subject after 5 minutes of resting to get a control. The subjects rested for 10 minutes between playing each game to get their blood pressure and heart rate back to normal. The results of the testing were that Mario Kart raises blood pressure and heart rate higher. I think one of the reasons was that, with Mario Kart, you have to move your body around, but with Zelda, it's a button game. I had a lot of fun doing this and I would like to study it even more thoroughly and scientifically at a later time.

Category: Product Testing & Consumer Science

Student Name: Kyle Cannon

Team Members (if any):

Project Title: Play Set Protection: Do you have it?

Abstract: Question: Out of three different kinds of wood sealants (Behr Premium, Helmsman, and Preserva Wood) which one will work the best by keeping the most water out of the wood? Hypothesis: If I paint the same amount of sealant on each piece of wood, then the Helmsman sealant will work the best because it is the stickiest and it cost the most. For my experiment I used extra wood from my play set. We cut each piece of cedar wood into 3 by 5 inch pieces. I wanted to do the experiment three times so I cut the wood into twelve pieces (three for each sealant and three for no sealant). Then I weighed each one. Then I bought the 3 sealants. I then painted one and a half teaspoons of sealant. After that I let it dry and painted another coat that was one teaspoon. Then I let it cure for seventy-two hours. Following that I tied the wood onto bricks so that when I put them in the water they would be submerged. I left them in the water for 72 hours. Then I patted them dry and weighed them. Results: I conclude that my Hypothesis is correct because the Helmsman worked the best out of the sealants. I conclude this because I compared the percentage increase in weight of each of the pieces of wood after the experiment. (The Behr Premium was close behind Helmsman, but it made a stain, and Preserva wood barely worked.)

Category: Product Testing & Consumer Science

Student Name: Sheldon Chatelain

Team Members (if any): Braden Young

Project Title: Acidity in Liquids

Abstract: How much acid is in different liquids. We tested type of liquids, by taking purple cabbage and water and making a indicator. We then put the indicator into a liquid such as Rock Star, GQ, Lemonade, Mountain Dew and so on. My hypotheseis was that I thought Moutain Dew would have the most acid. The results found was Rock Star had the most and Moutain Dew had the fourth most. We looked at the color to determine how much acid it had.

Category: Product Testing & Consumer Science

Student Name: Emilee Christensen

Team Members (if any): Sarah Christensen

Project Title: Under Pressure - Are Under-Inflated Tires Deflating your wallet?

Abstract: We think that most vehicles' tires are under-inflated which is not safe and can cost more money in gas and tire replacements. We tested 27 vehicles tires for pressure and what their recommended pressure was. We also asked the owner some safety questions. We found that 82% of the tires we tested were lower than recommended and that 73% of them could improve gas mileage by 1 to 7%. We concluded that our hypothesis was correct and that most tires were under-inflated.

Category: Product Testing & Consumer Science

Student Name: Sarah Christensen

Team Members (if any): Emilee Christensen

Project Title: Under Pressure - Are Under-Inflated Tires Deflating your wallet?

Abstract: We think that most vehicles' tires are under-inflated which is not safe and can cost more money in gas and tire replacements. We tested 27 vehicles tires for pressure and what their recommended pressure was. We also asked the owner some safety questions. We found that 82% of the tires we tested were lower than recommended and that 73% of them could improve gas mileage by 1 to 7%. We concluded that our hypothesis was correct and that most tires were under-inflated.

Category: Product Testing & Consumer Science

Student Name: Brooke Christiansen

Team Members (if any):

Project Title: Grass Be-Gone

Abstract: Grass stains are very difficult to get out of clothing because the protein, chlorophyll, and organic matter attach to the cloth fibers. The purpose of this project was to try eleven different cleaners on jeans stained with grass stains, and determine the best cleaner. My family has used Isopropyl Alcohol to get grass stains out of my jeans for years, so I thought that Alcohol would get grass stains out best. However I learned that the commercial cleaners did the very best. During the fall I made 46 grass stain samples on two pairs of old jeans. These were numbered to document samples and cleaners. Eleven stain samples were wet with warm water and a different cleaner was applied to each stain. Each sample was scrubbed for twenty seconds. All cleaners were used on a second set of grass stains and these were scrubbed for twenty seconds also. Both sets of stain samples were washed in a washing machine for 29 minutes. The dry stain samples were scored on a scale of one to five (1: best, 5: worst results). The score from both cleaner samples were averaged to determine the best cleaner. The four best cleaners were tested again on a third set of stains. The two best cleaners were commercial cleaners. They were Spray 'n Wash and Fels-Naptha. Corn Syrup (Non-detergent item) did a pretty good job at cleaning grass stains also.

Category: Product Testing & Consumer Science

Student Name: Alexah Coon

Team Members (if any):

Project Title: Going Green" to Clean?"

Abstract: My Science Fair project made a great discovery about homemade glass cleaner. Through my research I learned that chemical cleaners are hard on people living in the home. Over 200,000 calls to poison control were because of the toxins in cleaning chemicals at home. Other health problems were also linked to fumes from cleaners. I wondered if I could make a homemade "green" glass cleaner without chemicals that would work as well as Windex. So I made a glass cleaner with water, vinegar and dish soap. I put toothpaste on mirrors to see if the homemade cleaner would clean as well as Windex. I tested 3 different ways. First I put two strips of toothpaste across the mirror and counted how many strokes it took to get a clean area on the mirror. For the next test, I smeared toothpaste all over the mirror and timed how long it took to completely clean the mirror. The third test was one dot of toothpaste in the middle of the mirror and I timed how long it took to get that spot clean. I recorded the number of strokes or time that each test took. I found that the homemade glass cleaner did clean as well as Windex, but the most interesting thing was that I found out that it did NOT clean as fast as Windex. I concluded that the few seconds more that it takes to clean a mirror is well worth it to keep families and the environment safe.

Category: Product Testing & Consumer Science

Student Name: Nathan Cornell

Team Members (if any):

Project Title: Pain Relief Fast or Slow

Abstract: I tested pain relievers in diluted muriatic acid to bring to proper ph, in baby food jars on a rocker machine powered by a drill, to see how fast they dissolve in stomach acid. That way I would know which would help faster. I learned faster is not always better. Pain relievers that dissolve to fast cause stomach irritation. I learned which pain relievers work well but have a slower dissolve rate making them better for the stomach. I will not bring the rocker, acid or glass jars to the fair.

Category: Product Testing & Consumer Science

Student Name: Ethan Crain

Team Members (if any):

Project Title: Batteries...

Abstract: My question is: if I put Lithium, Alkaline and Rechargeble batteries in a hot or cold temperature which one would last longest, AA and AAA? I tested it by bringing the batteries into Texas and tested them there and I also put them in Highland (during winter). My results were that Alkaline lasted longest in hot temperatures (both AA and AAA) and the AA lasted longest in cold while the Alkaline AAA was beat by Lithium by a few minutes.

Category: Product Testing & Consumer Science

Student Name: TJ Crowther

Team Members (if any):

Project Title: Does the Price of Laundry Detergent affect the cleaning power?

Abstract: Question: Does the price of Laundry Detergent affect the cleaning power? Hypothesis: I think that the most expensive Laundry detergent will remove the stains the best. I based this on the fact that studies show that Tide detergent does a better job of getting cloths clean. Method: I took a white towel and cut it into 4 pieces. I separated each towel into 4 sections. I rubbed barbaque sauce, red punch, ink and grease into one of the 4 sections on each towel. I let the stains sit overnight. I put one of the stained towels in the washer and added 1/2 cup of one of the 4 chosen laundry detergents. Washed and rinsed the cloth. set the cloth out to dry. I repeated each step with the remaining 3 detergents and cloths. Results: My data showed that the Tide Laundry detergent the most expensive at \$0.27 a load cleaned the stains the best. My hypothesis that the most expensive detergent would clean the best was correct.

Category: Product Testing & Consumer Science

Student Name: Steven Cuthbert

Team Members (if any):

Project Title: Do Enzymes & Water Temperature Really Make A Difference When Doing Laundry?

Abstract: I wanted to know if the enzymes and the water temperature make a difference when you do laundry. I believed that the detergent with the enzymes would do better in the cold water. I took five clothes and put four different stains on each cloth. Then I let the stains sit and dry in then took four clothes and let two clothes sit in the non enzymes detergent, and two in the detergent with the enzymes then washed and dried. It turned put that the best detergent in my experiment was the one with out enzymes with disagreed with my hypothesis.

Category: Product Testing & Consumer Science

Student Name: Emily Davis

Team Members (if any):

Project Title: Egg War

Abstract: Question: Which brand of eggs are the freshest? Hypothesis: If I test these eggs by putting them in a bowl of water and by watching what they do and by frying them and watching to see what they look like, I believe that my own family fresh eggs will be the freshest. Procedure: Test 1: You get a bowl and water and put 1 1/2 quarts of water in it. Then you get an egg and put it in the bottom of the bowl. Then you watch the egg for a few seconds. If it lays at the bottom of the bowl it is fresh. If it stands up it is semifresh. If it floats, then you should discard the egg right away. Procedure #2: Turn the stove on to medium and place a frying pan on the stove. Crack an egg in to the frying pan and watch it for 10 seconds. If the whites hold the yolks together so it doesn't run and the yolk is a dark orange, it is a very fresh egg. Results: The eggs are not always as fresh as the writing on the cartoon tells you. Eggland's Best had writing on the cartoon such as "vegetarian fed hens" and "America's best tasting eggs". My hypothesis was correct and my family fresh eggs were the freshest. Eggs in order of freshest: family fresh eggs Nutrifresh eggs Rocky Mountain foods Nest Fresh and Eggland's Best."

Category: Product Testing & Consumer Science

Student Name: Karyne Dimas

Team Members (if any):

Project Title: Chuck, Drop and Roll Oops! Was that Fragile?""

Abstract: Are there common household materials that can protect a fragile item (egg), during shipping, as well as or better than professional packing materials? Will the object shift and make it more likely to crack in future tests? My hypothesis was that common HOUSEHOLD materials would successfully protect the egg from cracking. I didn't think that the egg would move, because the package was full of the testing material, therefore it would not make a difference in the results. From an interview with a UPS Shipping manager and information from a website describing the ways that companies test shipping products before the public can buy them, I set up a test where I packed a box with packing materials two inches all around the egg, then chose three of the tests listed: CHUCK the package back and forth 10 times; DROP the package from a two story level; ROLL the package down a hallway 10 feet. The HOUSEHOLD materials I chose to try were: marshmallows, quilters batting, popped popcorn, sandwich Ziplocs filled with air, and crumpled newspaper. The PROFESSIONAL materials were: bubble wrap, packing peanuts and a combination of both. I did the test and checked the egg's placement, if it was cracked the test was over. If not I re-taped the box and tried again. Then I repeated the process. My hypothesis was correct the quilter's batting did better than the professional materials, but also incorrect, the egg moved and was often the reason for it cracking the second time.

Category: Product Testing & Consumer Science

Student Name: Sahalie Donaldson

Team Members (if any):

Project Title: Battle of the Snacks

Abstract: I wanted to do a project that could promote healthy eating habits. Because most snacks have a healthier version, I wanted to find out if the healthy version of the snack tastes as good or even better than the original version. I predicted that kids would like the original version more than the healthy version. I found out that kids like healthy versions just as much and sometimes more than the original version. Because of this, I think parents should be buying us healthier snacks.

Category: Product Testing & Consumer Science

Student Name: Rachel Duncan

Team Members (if any):

Project Title: Whole Grain Science

Abstract: My question is Does how much whole grain one eats help determine whether or not one likes new whole grain cookies?. I conducted my experiment by making whole grain cookies for people to try. Then I made surveys that asked the person filling out the survey to rate the cookie on a scale of 1-5 (5 being the best,) then what their age was, (Adult, 7-17, and 6and under.). The final Question was if they ate 0-1, 2-3 or 4or more servings of whole grains on a average day. I took the cookies and surveys around my neighborhood, and asked the people in my neighborhood to try the cookies and then fill out the surveys. I charted my results for each age group on graphs and wrote my conclusion. I found that those who ate 0-1 servings of whole grains rated the cookies the highest, those who ate 4 or more servings gave the second highest ratings, and those who ate 2-3 servings gave the lowest ratings. My conclusion: I now think that even though someone may not eat a lot of whole grains they may still like them. I think that some people who eat lots of whole grains may still not like them. I also think that many people like cookies in general, and that if several hundred surveys had been filled out I might have gotten different results. I think that whole grain cookies are a good way to get people to eat whole grains.

Category: Product Testing & Consumer Science

Student Name: Seth Erickson

Team Members (if any):

Project Title: Does Playing video games increase or decrease math skills?

Abstract: My question for the science fair this year is: Does playing video games increase or decrease math skills? Parents always say not to play video games because of school grades. So this is my project. My hypothesis is that Dance Dance Revolution won't wash your brain out, but Starwars Battlefront and Rockband will. I also thought the control group (who only took the tests) wouldn't improve on anything either. This is how it went. I had a grown-up, a teenager, and a kid from 7-9 years old in each group. 2 times a week for 4 weeks they would take a test, play the game they were assigned to for 20 minutes and then take the test to see if they improved or not. If they didn't finish the test in 5 minutes then all the problems they didn't do would count against them. Once it was over the results were that Dance Dance Revolution didn't fry your brain, but the other groups did. I thought it was because physical activity with Dance Dance helped, but with Starwars it is fighting and for Rockband the songs are really loud, rock songs so you would be paying more attention to those. My hypothesis was correct. So, video games really don't fry your brain all the time.

Category: Product Testing & Consumer Science

Student Name: Joshua Evans

Team Members (if any):

Project Title: What Materials Make the Best Insulation?

Abstract: My question was: what materials make the best insulation? I chose nine different materials to experiment with: a piece of fleece blanket, a cotton t-shirt, a polyester shirt, wool sock, newspaper, tin foil, plastic wrap, a piece of down coat, and a piece of fiberglass insulation. I used 10 glass jars and wrapped the materials around them. I used one of the jars as a control and didn't wrap anything around it. I did two different experiments. The first one was to see which material would keep the cold in the jar and the heat out. I put five ice cubes in each jar and let them sit at room temperature for two hours. My hypothesis was that the fleece would keep the heat out the best and have the least amount of melted ice when the time was up. The results were that the down coat had the least amount of melted ice. The next experiment was to see which material would keep the heat in and the cold out. I put two cups of hot tap water (115 degrees) in each jar and let them sit at room temperature for two hours. My hypothesis was that the fiberglass insulation would keep the water the warmest. My hypothesis was correct. The control jar with nothing wrapped around it had the worst results in both experiments. Through my experiments I learned that some materials like fleece, down, and fiberglass are good insulators and will keep temperatures steady the longest.

Category: Product Testing & Consumer Science

Student Name: Megan Garside

Team Members (if any): Caitlyn Bone

Project Title: The Ultimate Cookie Sheet

Abstract: Which of five cookie sheets will bake cookies the fastest? We thought that the insulated pan would bake them the fastest, because it doesn't let heat rise faster from the bottom of the cookie than it does over to the top of the cookie. This helps them to bake evenly. We put six pieces of Pillsbury cookie dough on one of the five different types of pans. Then, we put the extra pieces of cookie dough back into the fridge so that they were always kept the same temperature before they were baked. Third, we preheated the oven to 350 degrees farenheit. When it finished preheating, we put the pan that already had cookie dough on it into the oven. Next, we set the timer for ten minutes. At the ten minute mark, we checked the cookies, and recorded what they looked like. From then on out, we checked them every two minutes, and record what they looked like. We repeated it until we had done every different type of pan three different times. Our results showed that the nonstick pan actually won, so, we were wrong. We think that one reason the nonstick pan was better was because it was thinner.

Category: Product Testing & Consumer Science

Student Name: Justin Gentry

Team Members (if any):

Project Title: Fertilizers- Helping Plants Grow

Abstract: For my experiment, I wanted to find out what fertilizer would help a plant grow tallest and healthiest in manure soil. After I did some research, I chose radish seeds, because they grew the fastest. I thought just the manure soil would make a radish plant grow tallest and healthiest. I started my experiment by gathering radish seeds, manure, soil, pots, Miracle-Gro fertilizer, fish emulsion fertilizer, and Grow-More fertilizer. I planted the first seed in manure soil. I planted the second seed in manure soil and Miracle-Gro fertilizer. I planted the third seed in manure soil and Grow-More fertilizer. I planted the last seed in manure soil and fish emulsion. I watched and charted the growth of the plants. After completing the experiment, I found out that my hypothesis was half correct. The manure soil grew tallest but not the healthiest. It produced a limp plant. The fish emulsion grew the healthiest. It grew the greenest and straightest. The Grow-More did well, but not as good as the fish emulsion. In this experiment, Miracle-Gro did not produce the best plant. I would recommend fish emulsion as a fertilizer from this experiment.

Category: Product Testing & Consumer Science

Student Name: Peyton Gibson

Team Members (if any):

Project Title: Does temperature affect popcorn?

Abstract: I wanted to know how temperature affected how many kernels in a microwave popcorn bag would pop. So I decided to try frozen, refrigerated and room temperature popcorn. I thought that the frozen popcorn would pop the least and the room temperature would pop the most. I started by heating 1 cup of water in the microwave for 1 minute to preheat it. I used the automatic popcorn button to ensure that each bag was popped the same amount of time, about 2 minutes and 25 seconds. I popped 3 bags of popcorn starting with the frozen, the refrigerated and the room temperature last. I repeated this experiment 4 times. Each time measuring the amount of popped corn and how many kernels were left that did not pop. After totaling the numbers, I was surprised by the out come. The frozed and room temperature microwave popcorn popped the same amount and the room temperature popcorn came in 3rd. I found that the frozen popcorn tasted better and seemed fluffier. The butter stuck to the popcorn and more individual popcorn pieces were covered in butter. So my research showed that frozen popcorn was a better way to go. Who knew?

Category: Product Testing & Consumer Science

Student Name: Matthew Graf

Team Members (if any):

Project Title: Sanitizing Science

Abstract: Which sanitizer is better... name brand or homemade? Research proves that for sanitizer to be effective it must have at least a 62% alcohol content. Could a homemade sanitizer with only 2% alcohol content be as effective? My hypothesis was that it could not be as effective even though the recipe that I used contained tea tree oil which is considered a natural sanitizer. Three subjects rubbed their hands together and then each hand had store brand sanitizer or homemade sanitizer applied by glove to one of their hands. After the sanitizer dried, the hands were swabbed and the swab was rubbed onto a petri dish with agar. My results were surprising. After observing my subjects hands 42 hours after swabbing with the sanitizers, the homemade sanitizer was just as effective and in one subject killed the germs even better.

Category: Product Testing & Consumer Science

Student Name: Emily Grover

Team Members (if any):

Project Title: How to Achieve Zero Xerosis

Abstract: I suffer from dry skin, medically termed xerosis, and wanted to test various moisturizing ingredients to determine what ingredients I should look for when purchasing lotions. To accomplish this, I created a synthetic skin using gelatin inside 16 Petri dishes. I left four of the Petri dishes as controls. With the remaining 12 Petri dishes I covered each synthetic skin with two tablespoons of an individual moisturizing ingredients. I then weighed all 16 Petri dishes to 1/8th oz. every 24 hours and recorded the weights on a spreadsheet to calculate the percentage of moisture lost (or evaporated) from the synthetic skin. My hypothesis was that the coconut oil would prevent the most amount of moisture loss. I researched skin and the causes of xerosis as well as each of the moisturizing ingredients that I tested. My data indicated that olive oil did not allow any moisture loss from the synthetic skin. I also learned from my research that olive oil contains essential fatty acids as well as vitamins A, B-1, B-2, L, D, iron and helps the body maintain a strong level of vitamin E. My data also indicated that the mineral oil also prevented any moisture loss from the synthetic skin, but I learned from my research that this ingredient is not a healthy option for skin. Coconut oil can be absorbed into skin and allowed only 4.2% moisture loss. My conclusion is that olive oil is the best moisturizing ingredient to prevent moisture loss from skin and prevent xerosis.

Category: Product Testing & Consumer Science

Student Name: Jane Haddock

Team Members (if any):

Project Title: Soap vs Hand Sanitizer

Abstract: I was curious to see what killed more bacteria: soap or hand sanitizer. I did some research on soap, hand sanitizer, and bacteria and got useful information. From there I came up with my hypothesis which was: if I take samples from unclean hands, hands washed with soap, and hands washed with hand sanitizer, the unclean hands sample will have more bacteria than the hand sanitizer which will have more bacteria than the soap. I used two different soaps and two different hand sanitizers. I swabbed subjects' hands that had washed their hands with one of the soaps or hand sanitizers and then rubbed the same swab in a Petri dish. Then I left each of the samples in a lab and waited for the bacteria to grow. The results were: one of the soaps I used had fewer bacteria than both of the hand sanitizers did, but on trial three one of the hand sanitizer had no bacterium which was fewer bacteria than the soap had. My hypothesis was most likely correct because two of the trials showed that the soap killed more bacteria than the hand sanitizer.

Category: Product Testing & Consumer Science

Student Name: Sariah Hamilton

Team Members (if any):

Project Title: Wii Exercise to be Fit

Abstract: My question was, Will the wii sports or wii Fit provide great exercise on bad air quality days and can I convince my Mom to buy one for us if I can convince her that it is healthy? My hypothesis is, It is my belief that playing wii fit, wii tennis or wii boxing will provide the recommended levels of exercise. As with all exercise it needs to be done properly with no cheating or minimizing of movements. I asked my aunts and grandparents, who had wii systems, to keep track of heart rates and to ask their friends to also participate. I made a chart that I emailed to them to help keep track of their information and results. I then checked in with my participants on a bi-weekly basis. As the chart was filled out it was emailed back to me, and the results have proven my hypothesis to be true. Now to finish convincing my Mom.

Category: Product Testing & Consumer Science

Student Name: Dustin Hansen

Team Members (if any):

Project Title: Farthest Cast

Abstract: Does the weight of the fishing line affect the casting distance? I think the fishing line with the heavier weight will travel farther and faster. I believe this will happen because the more weight behind the cast will make the line go a farther distance. 1. Gather all materials needed and prepare a chart to record data on. 2. I will put 6 pound line on my reel, a swivel and a 0.7 oz. sinker. I will measure the length of 6 casts and record the distance. 3. I will take off the 6 pound line and replace it with the 8 pound line. 4. I will repeat step 2 with 8 pound line on my reel. 5. I will take off the 8 pound line and replace it with the 10 pound line. 6.

I will repeat step 2 with 10 pound line on my reel. My results are that the lighter line traveled farther than the heavier line. My hypothesis was wrong. The line weight refers to the amount of pressure each line can hold. When you compare the lines, the heavier the weight, the thicker the line. Not only does the pressure increase with line weight, but because the line is thicker, it probably does weigh more. I realize that if you were trying to throw a 60 pound weight or a 100 pound weight you could throw the 60 pound weight farther. The same appears to be true with the fishing line.

Category: Product Testing & Consumer Science

Student Name: Lauren Harker

Team Members (if any): Ashton Gately

Project Title: Think Before You Drink

Abstract: Every year Americans consume thousands of gallons of drinks such as soda, coffee, and sports drinks. All of these have a claim of some wonderful benefit and happy feelings. As I sat pondering this, while enjoying a soda of my own, with all of these drinks claiming they're the best which of these drinks will stain my teeth the most? The question posed now I had to devise a way to answer my inquiry. Since I didn't have any teeth sitting around I found something that was made of the same thing. Teeth are comprised of calcium and eggshells are as well. All I would need to do is submerge eggs into various drinks and chart the change over a set period of time and compare them to each other. The eggs would act as teeth and give results similar to those of a set of real teeth. Each cup was labeled with a different drink. The exact amount of liquid was filled in each cup. We used soda coffee energy drinks and sports drink with one filled with tap water. Over several hours we observed our findings and graphed our results. The findings were interesting and colorful. The darker sodas stained most quickly while the bright drink the sports drink stained brighter and darker over a longer period of time. The dye in this drink had the greatest change. As an interesting side note the energy drink actually caused the eggshell to become "mushy" but did not change the color. Since I was looking for stains I will now have a project for another day.

Category: Product Testing & Consumer Science

Student Name: Jenna Harmon

Team Members (if any):

Project Title: Energy Drinks and Your Health

Abstract: Question: Are energy drinks a health hazard? Hypothesis: Energy drinks will have a significant impact on a person's heart rate." Method - Direct test: Asked 20 people to participate in my experiment. My experiment: 1. Took pulse of subject. 2. Subject drank either 1) non-caffeinated soda 2) caffeinated soda or 3) an energy drink. 3. Waited 10 minutes. 4. Took resting pulse again. 5. Recorded data and studies it. Result and conclusion: My experiment showed that most people who drank the energy drinks had a heart rate increase. Non-caffeinated drinks did not affect heart rate and caffeinated drinks decreased heart rate. I also learned that Taurine is in most energy drinks and is supposed to regulate heart rate but didn't seem to have an effect. There are also many other ingredients in energy drinks are that supposed to increase energy. My question is "Do we know enough about combining all of these energy ingredients and how they will affect our bodies? Are we sure they are 100% safe? Will we one day find out that they damaged organs or other parts of our bodies?"

Category: Product Testing & Consumer Science

Student Name: Elizabeth Harris

Team Members (if any):

Project Title: Shake Em Up

Abstract: You are playing a game of Monopoly and everyone is getting 6's, why? I think it is because dice are uneven. Because of the dimples in the dice, each side is a different weight. I think this would effect the rolling outcomes. Casinos use precision dice without dimples and they specially measure their dice so they will not have unfair dice. I rolled 12 game dice and three precision fair dice each 306 times. I shook the dice holder 5 times and gently tipped the dice onto my kitchen table. The probability for the precision dice should be that each number appears the same number of times. I found that the dimples do effect the outcomes also the shape of the dice. Game dice are rounded and not perfect cubes. Precision Dice are perfect cubes. There is not enough of a difference in game dice for any one to have an advantage if you just playing a game at home. If you are going to a Casino you probably want precision dice. The precision dice did have more precise results.

Category: Product Testing & Consumer Science

Student Name: Rachel Haskell

Team Members (if any): Kylee Hazard

Project Title: Flavor Fusion

Abstract: Where we started with this project and where we ended were quite different, but we had fun getting there! The following list describes how our project evolved: 1)Question: If plain cookies and peppermint cookies or brownies were placed together in a sealed container, would the flavor and aroma of the peppermint/brownies transfer to each other? 2)Question: If plain cookies and peppermint cookies are baked together in the same oven, would the flavor and aroma transfer? 3)Question:If plain cookies are placed in a sealed container with candies (peppermints, bubblegum, cinnamon gum, peanut butter cups), would the flavor/aroma transfer? Does it matter if the candies touch the cookies? a.Hypothesis:The flavors/aroma will transfer and it will be more noticeable in smaller containers than in large ones and candies touching the cookies will also transfer more flavor. b.Process: Plain cookies were baked and placed in small airtight containers with various candies for 14 hours. Some touching the candies and some not touching the candies. Adults sampled one cookie of each flavor from each group and a control cookie, and results were measured in the same manner. c.Results:For physical transfers (candy touching cookies), cinnamon resulted in the strongest transfer of flavor/aroma (average rating of 5 for aroma and 4 for taste, rounded, on a scale of 1-5), and peppermint showed

the weakest transfer (average rating of 3 for aroma and 2 for taste, rounded). Physical versus non-physical transfers yielded similar results for each flavor.

Category: Product Testing & Consumer Science

Student Name: Layne Haskell

Team Members (if any):

Project Title: IT JUST MAKES CENTS!

Abstract: Helping save money has been something we have all been working on in my family. I decided to try an experiment with hamburger to see which grade of hamburger is the cheapest? After I came up with a question, I wrote my hypothesis. The hamburger with the least fat in it is the cheapest to buy for your family. First I weighed the raw hamburger to get exactly one pound of each sample. I cooked each sample. After browning I used paper towels and then ran HOT tap water over the meat to finish getting rid of the fat. After the hamburger had drained for five minutes, I weighed it again to see how much each weighed after being cooked. To compare the price per pound of the cooked hamburger I had to figure out how much it cost. I took the price per pound of raw hamburger, divided that by the amount of cooked hamburger to equal the price per ounce of cooked meat. I multiplied that by 16 (16 ounces = one pound) and that is the price per pound of cooked meat. I learned a lot of new things: *The right way to cook and prepare meat to keep it safe. *Hamburger does not have the same fat content even though it is marked the same. *Blotting and running HOT water over hamburger can remove more than half of the fat. *My hypothesis was wrong - the cheapest hamburger has the most fat in it.

Category: Product Testing & Consumer Science

Student Name: Annie Hayward

Team Members (if any):

Project Title: Is a Picture Worth a 1,000 Words?

Abstract: I did this experiment because I was curious to know which is more effective in advertising, pictures of words. How do we retain information better? Question: Which items will 6th grade students remember more: pictures or text? Hypothesis: I think that my classmates will remember the pictures better than the words. Procedure: I handed eight students four sheets of paper which had the following: 1) twenty typed words, 2) twenty colored pictures, 3) Text" numbered 1-20 4) "Pictures" 1-20. First

Category: Product Testing & Consumer Science

Student Name: Kylee Hazard

Team Members (if any): Rachelle Haskell

Project Title: Flavor Fusion

Abstract: Where we started with this project and where we ended were quite different, but we had fun getting there! The following list describes how our project evolved: 1)Question: If plain cookies and peppermint cookies or brownies were placed together in a sealed container, would the flavor and aroma of the peppermint/brownies transfer to each other? 2)Question: If plain cookies and peppermint cookies are baked together in the same oven, would the flavor and aroma transfer? 3)Question:If plain cookies are placed in a sealed container with candies (peppermints, bubblegum, cinnamon gum, peanut butter cups), would the flavor/aroma transfer? Does it matter if the candies touch the cookies? a. Hypothesis: The flavors/aroma will transfer and it will be more noticeable in smaller containers than in large ones and candies touching the cookies will also transfer more flavor. b. Process: Plain cookies were baked and placed in small airtight containers with various candies for 14 hours. Some touching the candies and some not touching the candies. Adults sampled one cookie of each flavor from each group and a control cookie, and results were measured in the same manner. c. Results: For physical transfers (candy touching cookies), cinnamon resulted in the strongest transfer of flavor/aroma (average rating of 5 for aroma and 4 for taste, rounded, on a scale of 1-5), and

peppermint showed the weakest transfer (average rating of 3 for aroma and 2 for taste, rounded). Physical versus non-physical transfers yielded similar results for each flavor.

Category: Product Testing & Consumer Science

Student Name: Jarek Hedman

Team Members (if any):

Project Title: A Remote Battle

Abstract: I wanted to find out if inexperienced video game players play better with a controller based on natural mapping (guitar) or an abstract controller (remote). For my experiment I got 6 inexperienced video game players (people who play less than 5 hours a month). Three volunteers started the experiment with the natural mapping controller. I gave the volunteer directions and showed him/her how to play the game. I let the volunteer practice for 5 minutes on a practice song. After he/she practiced, the volunteer played the test song on easy level, using the natural mapping controller. I recorded the score. Next I showed the volunteer how to use the abstract controller. He/she practiced for 5 minutes on the same practice song and then tested on the same test song, using the abstract controller. I recorded the score. Each volunteer did this again on medium and hard level, without practicing. I repeated this procedure with three other volunteers, who started with the abstract controller first. I concluded that the inexperienced video game players played better with the controller based on natural mapping on easy, medium, and hard levels. As the game level got harder, however, the type of controller didn't matter as much. I learned that experienced video game players should let inexperienced players use the controllers based on natural mapping. Companies who make video games, should make games

with controllers based on natural mapping. These games would probably become more popular and they would make more money.

Category: Product Testing & Consumer Science

Student Name: Katrina Hillam

Team Members (if any):

Project Title: What if I Don't Have Enough

Abstract: I wanted to find out what would happen if I didn't put enough eggs in cookies. I chose Vanilla Crisps because they are simple and delicious. I made 3 batches of cookies exactly the same except 1: 1/2 eggs, 2: no eggs 3: all eggs After I mixed each I took 5 cookies from each batter and baked them.

Category: Product Testing & Consumer Science

Student Name: Brittnee Jacobson

Team Members (if any):

Project Title: What is in our drinking water?

Abstract: My question was What is in our drinking water. My Hypothesis was that Fridge water would be the cleanest and Toilet water would be the dirtiest. I thought there would be a lot of movement in the toilet water and the snow water. If I would have to choose between what one would be the dirtiest out of school or home I would choose school water but the school water was all the same. MY procedure was I got three waters from school class drinking fountain and toilet. Next I got three waters from home tap snow and fridge. I tested school water first on Jan 3th next on the 20th. Then I tested the home waters on 13th and 20th. My results were snow water was the dirtiest and drinking fountain was the cleanest. What suprised me the most was the snow looked like a giant hair ball with mud splattered all over it. My conclusion was I will never eat snow again and that I would be better off drinking toilet water then eating snow. I wouldn't though because I am not sure yet. MY last comment is this was a really fun science fair project and i really enjoyed it also that I will probably do the science fair next year! I did my graphs on how many water crystals were in each the first week and then the second week. The first week was a bar graph and the second week was a pie graph.

Category: Product Testing & Consumer Science

Student Name: Sara Jeffs

Team Members (if any): Sara Jeffs, Alyssa Beltran

Project Title: The Strongest Paper Towel

Abstract: We wanted to know what the strongest paper towel wet or dry was. We thought that 2 ply paper towels would be stonger wet or dry. We used 4 kinds of paper towels. They all held 35 1 oz marbles when they were dry. Then we put 1 of each brand on a tray and added water 1 tbs at a time until we had 4 tbs. on each towel. One person held the corners while the other person slowly put in the marbles 1 at a time. We tried this 3 times with each brand. Our hypothesis was right. The 2 ply paper towels were stonger and we also found a difference in prices. The most expensive was not the strongest. The cheapest was by far the least strongest.

Category: Product Testing & Consumer Science

Student Name: Mckay Jensen

Team Members (if any):

Project Title: This Diaper Can't Handle the Pressure

Abstract: I wanted to know which of the 3 name brand diapers is the most reliable. I thought Huggies would be because it is more expensive. I slowly poured up to 3 cups of water in each one and observed how they absorbed the water, then I performed several tests on each of the diapers, by applying 20 pounds of pressure for various periods of time. I also plopped my weight on them to simulate a baby sitting down forcefully. I documented all the results by taking written notes as I went along and by taking pictures of every step. I was surprised to find that they all absorbed and leaked about the same, and that Huggies was the first to explode. I concluded that Pampers was best overall. My research showed that public opinions of each brand varied, though they leaned toward Pampers. I also researched what the diapers are made of that makes them absorb so much and was amazed that such a substance exists.

Category: Product Testing & Consumer Science

Student Name: Tucker Jensen

Team Members (if any):

Project Title: Efficient Battery Power

Abstract: I wanted to know if you could create electrical power using common household items. My hypothesis is that if the items contain the right chemicals then the reaction may create electrical current. I will test my theory using lemons, potatoes, galvanized nails, copper wire and vinegar. I concluded that it is possible to generate electrical power using common household items. However, the amount of current generated is too low for practical use.

Category: Product Testing & Consumer Science

Student Name: Shaylee Kartchner

Team Members (if any):

Project Title: Yeast Vs. Baking Powder (Which one will rise to the challenge?)

Abstract: I love to cook and have learned that yeast and baking powder both make foods rise, but sometimes cooks run out of ingredients, or the rising ingredients become so old that they no longer work, causing the cook to run to the store to replace them. So I wondered if you could substitute baking powder and yeast for each other in biscuit and bread recipes, in case you ran out of the one you need. Which one would rise the highest? (Purpose) In my research, I found out that yeast needs sugar and time to make bread rise, so I made sure my biscuit and bread recipes contained sugar, and I decided to cook one group immediately and one after an hour. My hypothesis (in summary) stated that I thought the baking powder would make the biscuit recipe rise the most, and that the yeast would make the bread recipe rise the most, but it was the baking powder that rose the most each time. In my experiment, my experimental variables were the yeast and baking powder. I left both out of my control group. I concluded that yes, you can substitute yeast and baking powder for each other, and that both cause biscuits and bread to rise, but the resulting texture and taste will be different than when using the intended ingredient.

Category: Product Testing & Consumer Science

Student Name: Megan Kashuba

Team Members (if any):

Project Title: Which Stain Remover Works the Best?

Abstract: I wanted to see if Oxi-Clean was as good as all the commercials say. I tested it against Shout and Resolve. I stained an old T-shirt with 1 tablespoon each of balsamic vinegar, ketchup, chocolate syrup, and olive oil. After I let it sit for 24 hours, I applied 1 tablespoon each of Shout, Oxi-Clean and Resolve to the stains on the shirt. I then set the washer and dryer, put the shirt in the washing machine and waited for it to be done. When it was done, I graphed the results and saw my results conflicted with my hypothesis. I thought Oxi-Clean would do best, but Resolve and Shout averaged a higher percentage than Oxi-Clean. Resolve averaged 95 percent, Shout averaged 85 percent and Oxi-Clean averaged 80%. This tells me that if you wanted to get a particularly tough stain out of some fabric, you should use Resolve. I think Resolve worked best because it's a carpet cleaner, so it was especially formulated to break down stains faster and more efficiently.

Category: Product Testing & Consumer Science

Student Name: Elyce Keller

Team Members (if any):

Project Title: Which brand of battery lasts the longest?

Abstract: I tested a consumer product. I wanted to see which brand of AA battery lasted longer. The four brands were Duracell, Kirkland, Energizer, and Rayovac. I thought that Rayovac would last the longest because it said on the package it lasts as long as Energizer. For part of my research, I did a survey of family and neighbors. Most people thought that Duracell would last longer. For the experiment, I used 4 flashlights and turned them all on at the same time and then watched until they ran out. My hypothesis turned out to be wrong. Rayovac actually was the first to go out but only by about 5 - 10 minutes, followed by Energizer, then Kirkland. In the end, Duracell lasted the longest by about an hour. The other three all lasted about the same amount of time.

Category: Product Testing & Consumer Science

Student Name: Meredith Larsen

Team Members (if any): madison stranc

Project Title: dose it sparkle

Abstract: Our question: which toothpaste whitens best? the toothpaste we used were colgate,crest,aqaufreash and close up.we thought of doing something with toothpaste but it would be hard to identify bacteria so instead we did which toothpaste whitens best? our hypothesis was that colgate would whiten best. you could say that our hypothesis was wrong or right it depends on how you look at it.each toothpaste was good at whitens something.steps were: we soaked the tiles in four different liquids for 45 minutes. then put 1 teaspoon of the four different toothpaste on each different tile. then we each scrubbed them for 5 minutes. rinsed them in water and compared them to find the winner!

Category: Product Testing & Consumer Science

Student Name: Tarin Leavitt

Team Members (if any): Tarin Leavitt and Laurel Anne Meiners

Project Title: Can you taste the difference?

Abstract: Question: Does it matter if I use butter, shortening or margarine when I make cookies? Will I be able to taste the difference? Will the cookies look different? Which one will taste and look the best?

Hypothesis: Cookies made with shortening will be fluffier. Cookies made with butter or margarine will be flatter and crunchier. The best tasting cookie will also look the best. Procedure: We used the same recipe for each batch changing only the oil ingredient. One batch used only shortening, one butter, one margarine, one half shortening/ one half butter, one with melted butter, another one with butter that we chilled for one hour in the fridge before baking. A scooper was used so the same amount of dough was in each cookie. We had 12 testers. Cookies were first judged on appearance which cookie would you choose to eat based on appearance. Then each cookie was tasted and rated. Water was drunk in between each cookie. The cookies were numbered so the testers didn't know what was different. Results: Shortening makes cookies bigger and softer, and butter or margarine makes cookies flatter and crispier. Cookies made with butter then chilled are the best tasting and the best looking. There was a connection between what people thought looked best and how good it tasted. From the ratings people expected the thickest cookies to taste the best. Generally that was the case, except that cookies made with butter only tasted better than expected.

Category: Product Testing & Consumer Science

Student Name: Landon Ledingham

Team Members (if any):

Project Title: DRINK PULSE

Abstract: QUESTION: Do certain drinks affect your heart rate? HYPOTHESIS: I think drinks that contain caffeine will increase your heart rate. METHODS: 1.Choose drinks with and without caffeine. 2.Measure out 8oz of the drink. 3.Measure 4 peoples resting heart rate. 4.Drink the beverage. 5.Measure each persons heart rate at intervals of 15 minutes and 30 minutes. RESULTS: Caffeinated drinks do raise your heart rate.

Category: Product Testing & Consumer Science

Student Name: Sariah Lee

Team Members (if any):

Project Title: For Real or For Ripoff? -Do Debbie Meyer Green Bags Really Work?

Abstract: My question was Do Debbie Meyer green bags really work? Hypothesis: Green bags can keep bananas fresh longer than if they're just left lying out. Method: Left bananas out on the counter (3 bananas in green bags, and 3 bananas out of the bags) Monitored, took pictures, and recorded bananas progress for 13 days. Results: The part of the banana you eat, in green bags, rotted quicker than the part of the banana you eat outside of the bags. But the peels were vice versa. Bananas in the green bags tasted like natural gases. Bananas in the bags also grew mold on the stems. Conclusion: I had a mixed result. The green bags worked on the peel of the banana, but not on the actual banana you eat. So the Green Bags may work on other things, such as apples or even bell peppers.

Category: Product Testing & Consumer Science

Student Name: Connor Lightfoot

Team Members (if any):

Project Title: Sunscreen: Don't Get Burned

Abstract: Summary of question: If sunscreens contain different ingredients, are applied differently and cost different amounts of money, then their effectiveness should differ as well. Methods: For my experiment, I used a pan, eight hot dogs (same brand), three different brands of sunscreen (same SPF), a heat lamp, and timer. During my experiment, I placed a cooking pan on a flat surface, and hung a heat lamp over the cooking pan. I rubbed three different sunscreens on three separate hot dogs, and tested a fourth hot dog with no sunscreen. After the hot dogs had been under the heat lamp for 40 minutes, I rotated them so they would get equal amounts of heat. I also took a picture and recorded their burn scale ratings. After 80 minutes, I took a final picture and recorded their final burn scale ratings. Results: The results of the experiment supported my hypothesis, and the sunscreens performed with different effectiveness. In my experiment, the Coppertone lotion performed best, and the Western Family lotion with similar ingredients did second best, the Banana Boat spray was almost as bad as no sunscreen at all. Overall, the lotions both did better than the spray. Cost of the sunscreens did not seem to be as important of a factor as the ingredients and application method.

Category: Product Testing & Consumer Science

Student Name: Parker Littlewood

Team Members (if any):

Project Title: Damaging Effects of Bullets

Abstract: I wanted to find out what the difference in damage would be between a 9mm Hollow Point bullet and a 9mm Full Metal Jacket bullet shot out of the same gun. My hypothesis was that the 9mm Hollow Point would do a lot more damage than the 9mm Full Metal Jacket. We went to a gun range area and shot an apple, a watermelon and a gallon jug of water with a 9mm Full Metal Jacket bullet. Then we shot an apple, a watermelon and a gallon jug of water with a 9mm Hollow Point bullet. The experiment was very close to the research I had done and my hypothesis. The Hollow Point bullet did a lot more damage than the Full Metal Jacket bullet which is what it was designed to do.

Category: Product Testing & Consumer Science

Student Name: Caden Lundquist

Team Members (if any): Reese Blacker

Project Title: Five a Day - a Better Way: Which Storage Method Keeps Fruits & Vegetables Fresh the Longest?

Abstract: Question: Which storage method keeps fruits & vegetables fresh the longest? Hypothesis: Green Bags specialty storage bags will keep fruits & vegetables fresh the longest. Procedures: We purchased 4 pieces each of 12 different varieties of fruits and vegetables. Stored each variety of fruit or vegetable in four different ways: 1) No container - the fruit or vegetable sat on the refrigerator shelf in the open air. 2) The container or bag that the fruit or vegetable came from the store in. 3) Air-tight container with a lid. We used Glad brand containers. 4) "Green Bags" specialty fruit and vegetable storage bags. Took pictures and recorded data of how each fruit and vegetable was changing. we did this on day 1 day 11 day 16 day 22 and day 27. Compared data pictures and samples to see which storage method kept the fruits and vegetables fresh the longest. Conclusion: Air-tight containers kept fruits & vegetables fresh the longest.

Category: Product Testing & Consumer Science

Student Name: Madison Magleby

Team Members (if any):

Project Title: Which popular drink causes more tooth erosion -Diet Coke or Gatorade?

Abstract: Sports drinks and diet sodas are usually thought of as healthy drinks, but these drinks aren't necessarily healthy for your teeth. This project tests two popular drinks; Diet Coke and Lemon-lime Gatorade, to determine which one causes the most erosion to teeth. My hypothesis was that Gatorade would erode teeth more because my research indicated that Gatorade is more acidic than Diet Coke and that acidity is what would cause the erosion of the teeth. Six teeth (controlled variables) pulled from the same mouth were used to test the drinks; three teeth were submerged in Diet Coke and three teeth were submerged in Gatorade (experimental variables), each for ten days. Each tooth was dried, weighed, and charted every twenty-four hours and then put back into fresh liquid. The experimental results supported my hypothesis by showing that even though both drinks caused some erosion, the teeth submerged in Gatorade had the biggest loss of weight and therefore Gatorade causes the most erosion.

Category: Product Testing & Consumer Science

Student Name: Brianna Martin

Team Members (if any): Tatum Chiniquy

Project Title: Whashing Your Hands keeps You Healthy

Abstract: Washing Your Hands Keeps You Healthy By: Brianna Martin Our project is teaching you that it does not matter what soap you use it just matters how long you wash your hands. Our question: How important is it to wash your hands? Our hypothesis: Does it really matter how long you wash your hands? Project: We grew germ cultures from our hands before and after washing our hands. My partner washed her hands for 20 seconds; I only washed my hands for a few seconds. I touched the toilet seat, a computer mouse, the bottom of my sister's shoe, and a door mat. It was interesting to see which item grew the most germs. The computer mouse grew the most germs. Then the second one with the most germs was the bottom of my sister's shoe. Then there's the door mat, it had the third most germs. Last but not least there's the toilet it had the least germs out of our whole project. I used different types of soaps to see if it made a difference. Western Family Brand seemed to work the best. I also used Jergens, Lever 2000, and Bath & Body soaps. Conclusion: Most people think that you need a certain soap to get most of the germs off. But they are wrong. We found out that it doesn't matter what soap you use it just matters how long you wash your hands.

Category: Product Testing & Consumer Science

Student Name: Allison McCulloch

Team Members (if any):

Project Title: Fire and Fabric

Abstract: Fire and Fabric My project dealt with the flammability of fabric. The main question was: "which fabrics are most flammable". I wondered how safe the fabrics I wear are. I was most interested in the difference between fabrics made of man-made fibers verses fabrics made with natural fibers. My hypothesis is: "Synthetic fabrics will burn at lower temperatures and in less time". For my experiment I purchased different kinds of fabrics, acetate, acrylic, cotton, nylon, polyester, poly-cotton, poly-rayon, rayon, silk and wool. All fabrics were cut to the same size and during the experiment they were placed on a pan in the same order. We did this as we did not know how they would change in appearance and wanted to keep things straight. We placed the fabrics in an oven outside so we would not be hurt by the fumes. We cooked the fabrics and kept the time the same, but changed the temperature for the first experiment. For the second experiment we kept the temperature the same and changed the time. For the third experiment we tested all the types of fabric. This was done at the same time as the other experiments. The conclusion is that the original hypothesis is right. Synthetic fabrics do burn at lower temperatures and in less time. Cotton and Silk were able to withstand the most heat for the longest time. This was very interesting as the silk fabric was very flimsy and delicate and yet it held up the best.

Category: Product Testing & Consumer Science

Student Name: Rebecca McDougal

Team Members (if any): Hannah Polevoi, Ana Tuione

Project Title: Which product and shape will hold the most weight?

Abstract: We would tape each product, wax paper, paper towels, and plastic wrap onto each bucket, the circular bucket and the rectangular bucket. We then set 6 oz. tuna cans on each product until it tore from the weight. This was our method. Our question was which product and shape would hold the most weight. Our hypothesis was that the wax paper would hold the most weight because it was the thickest. Our results were that the plastic wrap held the most weight with both buckets.

Category: Product Testing & Consumer Science

Student Name: Laurel Anne Meiners

Team Members (if any): Tarin Leavitt

Project Title: Can You Taste the Difference?

Abstract: Question: Does it matter if I use butter, shortening or margarine when I make cookies? Will I be able to taste the difference? Will the cookies look different? Which one will taste and look the best?

Hypothesis: Cookies made with shortening will be fluffier. Cookies made with butter or margarine will be flatter and crunchier. The best tasting cookie will also look the best. Procedure: We used the same recipe for each batch changing only the oil ingredient. One batch used only shortening, one butter, one margarine, one half shortening/ one half butter, one with melted butter, another one with butter that we chilled for one hour in the fridge before baking. A scooper was used so the same amount of dough was in each cookie. We had 12 testers. Cookies were first judged on appearance which cookie would you choose to eat based on appearance. Then each cookie was tasted and rated. Water was drunk in between each cookie. The cookies were numbered so the testers didn't know what was different. Results: Shortening makes cookies bigger and softer, and butter or margarine makes cookies flatter and crispier. Cookies made with butter then chilled are the best tasting and the best looking. There was a connection between what people thought looked best and how good it tasted. From the ratings people expected the thickest cookies to taste the best. Generally that was the case, except that cookies made with butter only tasted better than expected.

Category: Product Testing & Consumer Science

Student Name: Tyler Meldrum

Team Members (if any):

Project Title: Melt The Ice

Abstract: My questions were: Why does salt melt ice? and which type of salt would melt ice the fastest and most efficiently? Hypothesis: Commercially produced Ice Melt will work best because it is rock salt with added chemicals, plus the packaging claims, melts faster than rock salt". I froze 7 blocks of ice and used 6 types of salt: iodized table salt non-iodized table salt ice cream salt kosher salt commercial rock salt Ice Melt and had one control block without salt. I kept the experiments outside in 33-37 degree weather. I measured how much water ran off each block by pouring it into a container and weighing it in grams on a very precise digital scale. I measured after 30 minutes 1 hour 3 hours 6 hours and 8 hours. My results showed that the ice cream salt worked better than all the others and that my hypothesis was wrong. Ice melt came in fourth even being beat out by non-iodized table salt.

Category: Product Testing & Consumer Science

Student Name: Megan Mills

Team Members (if any):

Project Title: What's Pop'n?

Abstract: My question for this experiment was, if the popcorn price is higher does that mean the quality of the kernels are greater? I wanted to learn more about popcorn so I went to www.recipes.howstuffworks.com. I learned that moisture inside the kernel has to be just right for the popcorn kernel to explode then solidify. I then chose three brands of popcorn from the store: Jolly Time, Orville Redenbacher, and Pop Weaver. I hypothesized that Pop Weaver would have higher quality kernels. For my experiment I first popped one bag of each brand and dumped them out one by one on a cookie sheet. Then I separated the kernels from the popcorn and placed the remaining kernels in a zip lock bag. Then I wrote the brand name and the number of kernels left on each bag. I did this process twice. Once done, I found the average of the unpopped kernels per brand and compared them. Orville Redenbacher left an average of 46 kernels, Jolly Time left an average of 40.5, and Pop Weaver's average was 24. The data showed that a higher quality of kernel with better moisture content will pop better. A higher price does not mean a higher quality kernel. According to the results of my experiment my hypothesis was correct that a cheaper brand has higher quality kernels making it a better value for your money.

Category: Product Testing & Consumer Science

Student Name: Gable Munn

Team Members (if any):

Project Title: The Effect of Energy Drinks

Abstract: My question is - How do Energy Drinks Affect Teeth & General Health? I tested this by placing teeth saved from my own losses into seven different energy drinks for two weeks time. I checked and logged each day what happened to the teeth. I was able to verify through observation that one energy drink used quickly colored and almost completely blackened the tooth placed in it. Another interesting observation from a different energy drink was that the roots on the tooth in it were liquefied and stretched out like spaghetti noodles when removed from the container.

Category: Product Testing & Consumer Science

Student Name: Calvin Nicol

Team Members (if any):

Project Title: Do you get what you pay for?

Abstract: My question is, Does the price of a golf ball make a difference in the ball's speed and distance? My hypothesis is that I think the two-layer cheaper balls will go farther than the more expensive three-layer balls because they have fewer layers. I researched about golf balls and what they are made of the history of them their cost and the different brands of balls. I then chose an average golfer to serve as the control and hit all three brands of balls. the indoor golfing center had computers to measure the distance and speed for better accuracy. The golfer hit the three types of balls 9 times each. The results were that the 3 layer more expensive balls did not out preform the cheaper 2 layer balls for the extreme price difference for the average golfer.

Category: Product Testing & Consumer Science

Student Name: Tyler Nilsen

Team Members (if any):

Project Title: Spray and Wash

Abstract: Does the cheaper stain remover work better than the expensive stain remover? To find out, I bought four different stain removers. I took a cotton sheet and measured, cut and tore 80 swatches. Next I made five different types of stains. I did two experiments on the first day and two more experiments one week later. For each experiment I cleaned four swatches of each stain only changing the stain remover. I sprayed each swatch with five sprays of stain remover, waited five minutes, and then scrubbed it with water and a brush. Then I looked at each swatch and recorded the results. My hypothesis was wrong. The most expensive stain remover worked better than the cheaper ones, but surprisingly the cheapest one did better than the others that cost more. Also surprisingly, one that wasn't the cheapest did so much worse than all the other brands.

Category: Product Testing & Consumer Science

Student Name: Preston Olschewski

Team Members (if any):

Project Title: Playing The Wii, What Does It Do To Mii?

Abstract: My question was, "Does playing video games increase your heart rate?" My hypothesis was that if you play video games then your heart rate will increase. The way that I tested this was by having 20 test subjects - ten male and ten female subjects - play Wii Tennis. I used a pulse oximeter and checked the subject's heart rate before they started to play. I wrote down this number and set the timer for five minutes. The subject played for the five minutes then I checked their heart rate again and wrote this number down. They played for five more minutes and then I checked the heart rate one last time and wrote it down. I repeated this test with each of my subjects. After the first five minutes in most cases the heart rate had gone up. After the next five minutes in most cases the heart rate had gone up even more. There were a few exceptions with some of the subjects having heart rates that went down instead of up during both tests and one subject that had a heart rate that stayed the same after going up at first. The results to my experiments showed that when people play video games their heart rate will in most cases increase. This confirmed my hypothesis.

Category: Product Testing & Consumer Science

Student Name: Spencer Parks

Team Members (if any):

Project Title: Bandage vs Water

Abstract: My question is What Brand of bandage lasted the longest in running cold and hot water (shower water). Nexcare, Band-Aid, or Curad. It turned out that my hypothesis was incorrect. Anyway for cold water, Nexcare lasted for a whopping 28 minutes! Curad lasted 8 minutes and Band-Aid lasted 5 minutes. For hot water Curad lasted 17 minutes, Band-Aid lasted 14 minutes and Curad lasted 12 minutes.

Category: Product Testing & Consumer Science

Student Name: Jerron Patterson

Team Members (if any):

Project Title: Can you pay for pure?

Abstract: Does higher priced bottled water mean it is more pure than the cheaper brands? Hypothesis: The more expensive bottled water is, the more processing and filtering it has been through. Therefore, it should be more pure than less expensive water. Absolutely pure water does not conduct electricity. By adding minerals or other impurities, water becomes ionized and begins to conduct electricity. The more impurities in water, the better it conducts. By measuring the impedance of water with an ohm meter I will be able to tell which brand of bottled water is the most pure. The sample with the highest impedance (high ohm reading) will be the most pure. Although people don't buy distilled water to drink, I still included it in the experiment as a control and assumed it would be the most pure. It was. But the final results were a bit surprising. One of the most expensive and least expensive brands were nearly "identically impure" and many of the less expensive brands were better filtered as indicated by higher ohm readings."

Category: Product Testing & Consumer Science

Student Name: Joseph Peterson

Team Members (if any):

Project Title: Surfaces That Give Traction

Abstract: I wondered whether the surfaces wood, tile, short pile carpet and tall pile carpet would change the traction of a remote controlled car. So I bought the car and got the surfaces. I used a protractor to measure the angle to put in the surfaces, I had to put a 5 degree angle in each because it couldn't go up any other bigger angle, I marked the first 30 inches so I would stop timing at that point. I set the stopwatch and timed as the car went up. After every time it went up I changed batteries to eliminate the variables. I drove it up each surface 3 times to see if the answers were consistent. My data was: Wood: 1.37, 1.26, 1.32 Sec. Average: 1.32 Sec. Tile: 1.11, 1.26, 1.26 Sec. Average: 1.21 Sec. Short Pile Carpet: 1.48, 1.26, 1.27 Sec. Average: 1.34 Sec. Tall Pile Carpet: 1.91, 1.80, 1.84 Sec. Average: 1.85 Sec. In the end the tile got the fastest time, then the wood, then the short carpet, then the tall carpet.

Category: Product Testing & Consumer Science

Student Name: Cameron Peterson

Team Members (if any):

Project Title: Batter Up!!!

Abstract: Batter Up!!!
Problem Statement I want to discover which batting glove has the best grip when hitting a ball with a bat. Success is measured by the batting glove which has the least slippage while hitting the ball.
Hypothesis I believe the old Franklin Batting Gloves will have the best grip of any batting glove.
Experiment Plan The steps of the experiment are the following:
-Find five different types of batting gloves.
-Get the right equipment.
-Put tape on the bat so the batters hand is always in the same place.
-When the batter's hand slips up or down the bat, the second person measures the difference between where the bat was held and where the hands end up on the bat.
Conclusion The conclusion of my experiment was the Neumann sticky glove was the best batting glove. It was the glove having the least amount of movement while hitting the ball.

Category: Product Testing & Consumer Science

Student Name: Emily Pew

Team Members (if any):

Project Title: It's All in the Tissue

Abstract: I tested different tissues. The different brands were Puffs Plus, Kleenex, Kroger, Great Value, and Target. I had people test on their arm which tissue they thought was softest. I also squirted water from a syringe on the five different tissues. My hypothesis was Puffs Plus would be the best. I was wrong. Kleenex was the softest, most absorbent, and had the best value. The Store brands were worse than the National brands. I was right about that. I enjoyed doing my project very much!!!!

Category: Product Testing & Consumer Science

Student Name: Hannah Polevoi

Team Members (if any): Rebecca McDougal and Ana Tuione

Project Title: Which Product and Shape Will Hold The Most Weight

Abstract: My teammates and I wondered which product and shapes could hold the most weight. We got together a circle bucket and a rectangular bucket with the exact same area. We taped our three different products on the buckets which are: paper towels, plastic wrap and wax paper. After fastening on each product we tested it by stacking cans of tuna on top, recording how many cans each product would hold. After completing this process once, we repeated it two more times to see if our results were the same. The paper towels held the least amount of cans. The wax paper held the second most. The pastic wrap held the most. Between the shapes the circle held the most.

Category: Product Testing & Consumer Science

Student Name: Bailey Pope

Team Members (if any):

Project Title: Ballistic Destruction

Abstract: What is the difference in destruction patterns caused by varying types of ammunition? After researching different types of ammunition, I formulated my hypothesis: If shooting into ballistic gelatin, the full metal jacket and solid lead point ammunition will cause similar damage at entry and exit, while the hollow point will expand and create much more damage upon exiting. I made four pans of ballistic gelatin, which is what the FBI uses to test ballistics. We then went to a gravel pit/ shooting range and set up the test. After putting in ear plugs and reviewing safety precautions, we walked off a distance of 37 feet and fired into the test pan. Since all three test rounds went through the gelatin, we placed a phone book behind the gelatin to stop the ammunition for analytical purposes. We then systematically fired each type of ammunition into the ballistic gelatin and measured the damage at entry and exit. The results didn't completely agree with my hypothesis. While the hollow point performed as I expected, the full metal jacket and solid lead point caused more damage upon entry than I had anticipated. This may have been due to the force with which the bullets hit the target.

Category: Product Testing & Consumer Science

Student Name: Kaytlin Porter

Team Members (if any):

Project Title: Paper Towels Strength and Absorbency

Abstract: Question: Which paper towels is the strongest and most absorbent? Hypothesis: Viva will be the strongest because it feels the thickest and Bounty will be the most absorbent because of the air pockets. Method: Strength test: I pour-ed 5 tsp. of water on each paper towel and then added one penny at a time until the paper towel ripped. Absorbency test: I dripped water one ml. at a time until the paper towel dripped from underneath. Viva won both.

Category: Product Testing & Consumer Science

Student Name: Jadey Price

Team Members (if any):

Project Title: Gas N Go

Abstract: Hypothesis: Using higher-octane ratio, more expensive gasoline (premium) will get better gas mileage and save more money than lower-octane rating, less expensive gasoline (regular) Method: Asked several friends and relatives to track gas mileage using different types of octane. I analyzed the results with my dad. Conclusion: My hypothesis was not correct. Premium gasoline usually got better gas mileage than regular gasoline, however regular gasoline was usually more cost efficient

Category: Product Testing & Consumer Science

Student Name: Mia Quintero

Team Members (if any): Jenna Stephens

Project Title: What's Cracking?

Abstract: Our project question was what of the 5 chosen objects would break the easiest in different temperatures? My hypothesis is: The cold mirror, ceramic, thick vinyl, will break easier than the room temperature tiles and mirrors. The room temperature Styrofoam, and the room temperature thin vinyl will break easier than the cold tiles. The order of operations is: 1st we would put half of the chosen objects in the freezer (0°F), and wait for them to cool. We would keep the others on the counter in the room (68°F). 2nd we would take one of the objects and put it in the breaking chamber. 3rd take picture 4th -put weight under string above centre of object 5th drop weight on object 6th count pieces 7th look at pieces with magnifying glass 8th measure biggest piece and smallest piece 9th record data and clear pieces from chamber 10th- repeat procedure with the different objects and the different temperatures before doing the same object once more.

Category: Product Testing & Consumer Science

Student Name: Brooklyn Ramsay

Team Members (if any):

Project Title: Water Wars, Bottled vs. Tap

Abstract: The purpose of my science project is to find out if people can taste a difference in bottled water vs. tap water. American's spend millions of dollars a year on bottled water. Many claim that they choose bottled water over tap water because of taste. Is there really a difference? Who win's the war...Bottled vs. Tap. I think that if people do prefer one flavor over the other, then I will be able to determine through sight/taste/smell tests and recording data which is preferred. I think that people will choose the bottled water over the tap water. I will take two bottles of water, one tap and one purchased bottled water. Place them both in the same container and place both in the fridge so that they are served at the same temperature. Then I'll ask 30 different people to visually try and label them correctly by sight/smell/taste. I'll conduct this experiment and compile the results. I found that in my overall in my experiments 81% of the time people chose the tap water over the bottled water. I found that very interesting. The data I gathered proved that my hypothesis was wrong in that people prefer tap water over bottled water when they have to use their senses of smell, sight and taste instead of the advertised label. I think that through my research I have learned that tap water is also regulated to be safer than bottled water in most instances.

Category: Product Testing & Consumer Science

Student Name: Nityam Rathi

Team Members (if any):

Project Title: Does A Cell Phone Conversation Affect Reaction Time?

Abstract: The purpose of my experiment is find out, Does a cell phone conversation affect reaction time? For my experiment, I needed 4 participants, 4 cell-phones, stopwatch, and test questions. I conducted my experiment with 4 children of the ages 12-13 years old by giving all the participants a cell-phone, and the test papers had 36 questions that included simple math problems, identifying shapes, and an identifying colors quiz. So first, they took the test when they were not on the phone, and I recorded the time, and when they were talking on the phone I gave them the same test and recorded the time taken to complete the test. In the other parts of the experiment their accuracy was recorded. The results show that more time is taken to complete the test; also, the accuracy was lowered when the children were on cell-phone conversations.

Category: Product Testing & Consumer Science

Student Name: Kaliann Rawle

Team Members (if any):

Project Title: Stain Remover Spotlight"

Abstract: I wanted to know which brand of liquid stain remover would be the most affective. My hypothesis was that the most expensive brand would probably be the best. I figured the saying You pay for what you get. might have something to it. I purchased the stain removers and took the price and divided it by how many fluid ounces were in each bottle to figure out how expensive they were. I tested grape juice blood and tomato sauce on cotton fabric. I allowed the stain removers to soak the fabric for equal amounts of time. I scrubbed each stain and rinsed the fabric. After allowing the fabric strips to dry overnight I compared the stains on each strip. I counted the stains that were completely gone as 100% and if the stain was about 1/2 gone as 50% affective and so on. Surprisingly the 2nd most expensive was the most affective overall. My hypothesis was incorrect.

Category: Product Testing & Consumer Science

Student Name: Abbey Rindlisbacher

Team Members (if any):

Project Title: which fabric stain remover removes stains best?

Abstract: My question was, Which fabric stain remover removes stains the best? My hypothesis was that spray n' wash would do the best because it uses both the power of oxi clean and its own formula. The method of my project was, I took four 4 by 4 wash cloths and divided them into thirds then I took 1tspn of mustard, 1tspn of tomato juice, and 1tspn of chocolate syrup of each of the thirds and rubbed them in. Then I took 1 tspn of the following stain removers: Spray n' wash, Oxi clean, Shout, and Zout and poured them on each stain I let each of the stain and stain removers sit for an hour and then put each in the washing machiene for 30 minutes on normal wash with a 1/2 cup of detergent. Once they were done washing I layed them out and copared each of the stains. My result was that Spray n' wash did the best because all of the stains came out except for the mustard, but none of the stain removers exactly took the mustard all the way out and the spray n' washes mustard stain was the lightest. Oxi clean came in second and then Shout came in third, I would have to say that Zout did the worst because it didn't get out the chocolate stain or the mustard stain. So in conclusion Spray n' wash did the best and if you ever get mustard on your clothes you'll either have to live with the stain or buy a new shirt.

Category: Product Testing & Consumer Science

Student Name: Mikayla Robins

Team Members (if any):

Project Title: Battling the Elements on the Playground

Abstract: Question: I wondered which material used in coats would keep kids the warmest while playing outside during recess. The reason I wanted to know this is because the wind blows almost everyday in Spanish Fork making it very cold outside during the winter. Hypothesis: I thought that wool would keep kids the warmest because it is a natural product. Methods: I chose six different fabrics that I made into coats. I then had to build an anemometer because I needed constant wind for my testing. This was to mimic the weather in Spanish Fork. I tested a fan with my anemometer to find out that the air that it put out blows approximately 14 mph. I began my experiment by filling a glass jar with 180 degree water and wrapping it in a coat. I placed the jar outside in front of the fan. I recorded the temperature at the start of the experiment, at 15 minutes and at 30 minutes to see map the heat loss. I tested each coat 3 times at 3 different temperatures and recorded all the data. Results: I found that all six coats were great insulators, but the ski coat fabric held the heat the longest. Its fabric is lightweight and dries very quickly if it gets wet. Through research I found the best way for staying warm is to wear many lightweight layers so you do not get overheated. This is probably why ski coats are made from this type fabric.

Category: Product Testing & Consumer Science

Student Name: Adrienne Robinson

Team Members (if any):

Project Title: Are Dice Really Fair?

Abstract: The sides of traditional dice are often marked with between one and six divots (indentations in the faces of the dice) to show the number rolled. The purpose of my Science Fair project is to find out if dice are really fair, or whether the difference in the number of divots changes the balance of the dice enough to make a difference in the probability of rolling a given number. My hypothesis is that the differing number of divots changes the fairness of the dice. When rolling dice, higher numbers will come up more often because increasing number of divots makes a side progressively lighter, and heavier sides (or lower numbers) will tend to end up on the bottom. I tabulated the results of 1500 rolls, taking care to throw in the same manner and let the dice rotate freely. I found that divotted dice are not perfectly fair. Different numbers of divots on the faces of dice appear to unbalance the dice, making sides with more divots come up more often than those with less divots. The average difference caused by one divot is .5%. A six is 2.5% more likely to be rolled than is a one.

Category: Product Testing & Consumer Science

Student Name: Michael Rodriguez

Team Members (if any):

Project Title: Pop Pop Popcorn

Abstract: Which brand of microwave popcorn pops the most kernels? Orville Redenbacher's, Pop Secret or Jolly Time? Pop Secret microwave popcorn will have less unpopped kernels than Orville Redenbacher or Jolly Time. Method: Put microwave popcorn bag in the middle of microwave. Enter 2 minutes, then press go. After time is up take popcorn bag out and count popped and unpopped kernels. (Use percentages) Then repeat with Jolly Time and Orville Redenbachers. The results conflicted with my Hypothesis because Orville Redenbacher microwave popcorn popped a greater percentage of kernels than Pop Secret and Jolly Time.

Category: Product Testing & Consumer Science

Student Name: Ashlin Rohbock

Team Members (if any):

Project Title: What is the most efficient light source and angle for solar cells?

Abstract: My purpose question was What is the most efficient use of a solar cell? This means that I am trying to figure out what angle and light source would be the best to use with a solar cell. The hypothesis that I came up with was If a solar cell is placed at different angles relative to the Sun then the most energy will be produced when the solar cell is perpendicular to the Sun. What I am trying to say in my hypothesis is if I place the solar cell at different angles toward the Sun then the most energy will be produced. The method for doing my experiment was get a solar cell test it at four different angles and also test it with four different types of light. The four angles I tested the cell at was 90 degrees 67.5 degrees 45 degrees and 22.5 degrees. I tested the solar cell at these four angles with four different light sources. I used halogen light direct sunlight incandescent light and fluorescent light. The results of the experiment were the same as my hypothesis. Direct sunlight at a 90 degree angle had the greatest energy output. Direct sunlight at a 90 degree angle had a 100 percent energy output. Incandescent light came in second halogen light came in third and fluorescent light came last.

Category: Product Testing & Consumer Science

Student Name: Bridges Sayers

Team Members (if any):

Project Title: Caffiene Harmful to Your Heart?

Abstract: I decided to do my science fair project on the harmful effects of caffiene. My hypothesis was that it would raise pulse and blood pressure. The method I used was to have seven test subjects. I took the pulse and blood pressure of each subject. Then I had each subject drink a Rockstar energy drink. I waited fifteen minutes, then took their pulse and blood pressure again and recorded the results. My results showed an increase in both pulse and blood pressure for each subject. I found this research interesting because of the increased use of energy drinks by teens.

Category: Product Testing & Consumer Science

Student Name: August Schmid

Team Members (if any):

Project Title: Does Removing Gluten and Casein from the Diet of Children with Autistic Spectrum Disorders (ASD) help make a Positive Change in Their Symptoms?

Abstract: For my science fair project I tested whether or not removing gluten and casein from the diet of children with an Autistic Spectrum Disorder (ASD) would help make a positive change in their symptoms. I choose this project because my two younger siblings have an ASD. I also used my siblings as my test subjects. I did this by comparing their behaviors and physical symptoms before the diet and on the diet. I also introduced gluten and casein at the end of my experiment and observed the effects of putting these back into their diet. My hypothesis was that when I put gluten and casein back into their diets for one day I would see a return of their former symptoms. On separate days I gave them ice cream and cookies. I observed and noted that some of their symptoms returned but that the more dramatic results came from the long term observation and not my two days of experiments.

Category: Product Testing & Consumer Science

Student Name: Caleb Shuler

Team Members (if any):

Project Title: Electro Heat

Abstract: Question: What kind of lightbulb is the best energy/heat saver and will that change in different environments? Hypothesis: My hypothesis was that the bulb which emitted the most heat would be the incandescent bulb, indoors, enclosed; and that the bulb which emitted the least heat would be the fluorescent bulb outdoors, exposed in a glass tank. Method: I tested each of my bulbs out in the open indoors and out by placing a candy thermometer so that it touched them and timing it for five minutes per test. I then recorded my results. Before recording the results I would measure the air temperature and subtract it from the total temperature. I repeated this process in a box, indoors and out, in a glass tank, indoors and out, and in the glass tank with foil covering it. Note: On the LED I put zero meaning it did not affect the temperature whereas on the others I wrote down how much the temperature rose to including room temperature. The air temperature indoors was 60 degrees F, 17 degrees C. The temperature outdoors was 40 degrees F, 4 degrees C. Results: My hypothesis was incorrect on all parts. Instead of the incandescent bulb, indoors, enclosed being hottest, the hottest bulb was the halogen bulb outdoors enclosed glass. This may have been the result of the glass magnifying the heat out at the foil and the foil bouncing the heat back in. Also the foil may have kept the cold

air out. The best energy/heat saver was the LED seeing as it didn't affect the thermometer. See "The Big Question" in my journal for interesting thoughts on how LED lights could be used in households in the future.

Category: Product Testing & Consumer Science

Student Name: Makay Smith

Team Members (if any):

Project Title: Thawing out ground beef..which method has the least amount of bacteria growth

Abstract: It is very interesting to me how fast bacteria can grow on meat. I wondered if the bacteria would grow differently if the meat were handled (thawed out) differently. I thought that the meat that sat out the longest would have the most bacteria because it would have more time to grow and spread, and the meat that thawed out the quickest would have the least amount of bacteria. I thawed out 3 different packages of ground beef three different ways- in the fridge, in the microwave, and on the counter at room temperature. I did this four different times. I waited for the samples to thaw, then I took a spong swab of the samples and put the swab samples into a TPC tube that has a solution in them. I swirled the tubes to mix it, then I placed the solution into simplot sample plates, tapped the plates to remove air bubbles, inverted the plates and incubated them for 10-14 hours, recorded the number of cells that had changed color (meaning these had bacteria), and figured the most probable number, and made a graph showing the results. In conclusion, I learned that even though it takes longer, thawing out beef in the fridge is the safest method. It had the least amount of bacteria in every test I did.

Category: Product Testing & Consumer Science

Student Name: Kelsey Sorensen

Team Members (if any):

Project Title: Sprays VS Stains

Abstract: I tested 3 different stain removers (Spray-N-Wash, Zout and Shout) and put them up against Food coloring, grass stains, hamburger grease and salad dressing. I put the stains on the same fabric and sprayed each stain with the different products and washed them. Which product worked the best? You will have to wait and see at the Science Fair!

Category: Product Testing & Consumer Science

Student Name: Whitney Springer

Team Members (if any):

Project Title: Dont Stop The Pop!

Abstract: My question was, How does the way you store microwavable popcorn and the temperature at which you store it affect how well it pops? My hypothesis was that if I store the popcorn in a container in the cupboard it will pop the best (because in reasearch you should store it at room temperature). I stored 12 bags of popcorn in 4 different places of varying temperatures (3 in each place). I also stored another 12 bags in containers (3 bags in each) in the same 4 places. I popped them all recorded the volume and counted the left over kernals. My hypothesis was incorrect the bags I stored on the counter that were in a container popped the best.

Category: Product Testing & Consumer Science

Student Name: Madison Stranc

Team Members (if any): Meredith Larsen

Project Title: does it sparkle

Abstract: Our question we did which toothpaste whitens best?the toothpaste we used were colgate, crest, aqua fresh, and close up. we came up with this question because we did not know what to do so we asked meredith's brother what we should do and he said we should do something with teeth. so we thought of doing something with tooth paste. at first we were going to do which toothpaste cleans best, but it would be very hard to identify bacteria. so instead of doing that we did which toothpaste whitens best. our hypothesis was that colgate would whiten best. you could say our hypothesis was wrong or right it depends on how you look at it. each tooth paste was good at whitening something. our steps are: soak tiles in liquids for 45 minutes took them out then put one table spoon of each toothpaste on each different tile then we each scrubbed them for 5 minutes soaked them in water and compared them to see which one won!

Category: Product Testing & Consumer Science

Student Name: Bridger Thompson

Team Members (if any):

Project Title: A Wii Bit More Energy?

Abstract: Question Does a Wii use more energy than a Nintendo 64? Hypothesis I think that a Wii uses more energy than a Nintendo 64 because a Wii does more advanced processing. Procedure I used a Wattmeter to measure how much energy the game systems used. Watts were measured during pause mode, play mode and off mode while playing three different games. 1. Plug the Wattmeter into a standard house outlet. 2. Plug the game console into The Wattmeter. 3. Make sure the Wattmeter is Adjusted to measure watts. 4. Measure and record the watts used by the console during pause, play, and off modes across three different games. Analysis The Nintendo 64 uses about half the energy than a Wii console does. It doesn't matter if you are in pause mode or play mode, they both use about the same amount of energy. Even in the off mode, both game consoles use 6.5 watts. Conclusion My hypothesis is correct. The Wii uses about twice the energy than a Nintendo 64. So if you and your family are trying to save energy, I would recommend using the Nintendo 64 if you have one. I would further recommend that you unplug your game console when not in use.

Category: Product Testing & Consumer Science

Student Name: Beth Weber

Team Members (if any):

Project Title: Wet & Wild

Abstract: Question: Which diaper is the most absorbant? Hypothesis: CozyCare and Huggies will be the top two. Method: Take cookie sheets, lay them out, put diapers on, and pour water cup by cup until every single diaper has some overflow. Pour off the water and measure. Results: CozyCare got last place and Huggies first place.

Category: Product Testing & Consumer Science

Student Name: Branson Wilbur

Team Members (if any):

Project Title: Just How Bright Is That Light?

Abstract: I wanted to find out if the Compact Fluorescent Lightbulbs (CFL) are as bright as they say on their packaging. 23 watt CFLs say they are as bright as a 100 watt incandescent light and a 13 watt CFL should be as bright as a 60 watt incandescent. I didn't think they were as bright as they say. I measured the light output of CFLs and incandescents with a light meter and I found that I was correct and CFLs do not put out as much light as they say.

Category: Product Testing & Consumer Science

Student Name: Bailey Wilde

Team Members (if any): Makella Bunn

Project Title: Which cleaner works best

Abstract: Question: Will expensive cleaners work the best. Hypothesis: First place we think lysol will work the best because it's most expensive and more in demand. Second cleaner used was clorox, third cleaner used was 409, fourth cleaner was fabuloso, fifth was Western Family Bleach, and sixth was water. Methods and results: on 1/26/09 cutting board was rubbed thoroughly with red raw meat. Board was left out in the open for 24hrs. On 1/27/09 one of six sections of cutting board was cleaned with one cleaner previously mentioned after which each section was swabbed with a clean swab. Each section of cutting board was numbered and each swab used was transferred to the same numbered petri dish. The petri dishes were left to stand at room temperature for three days and the results were recorded. Lysol was the winner.

Category: Product Testing & Consumer Science

Student Name: Raquel Williams

Team Members (if any):

Project Title: What Stain remover works the best at removing stains.

Abstract: What stain removers work best on removing stains? My hypothesis was that I thought Spray n wash would work the best, and that Mustard would be the hardest to remove. I called my friends and neighbors and asked them what products they used. Most everyone said either spray-n-wash or shout. I checked the internet for the most popular stain removers so I added Zout, Oxi Clean to my list. I also searched on the internet for the hardest stains to remove, mustard, wax, grass, Hot Sauce, crayon, & lip stick. That is how I came up with what products I would test on what stains. After making my test strips with the different stains. I then followed the suggested washing instructions and waited for the results to show up. I found that Spay-n-wash did remove the most. Nothing took out everything but I felt that it did the best overall. The wax and Lip stick were the hardest, not the mustard.

Category: Product Testing & Consumer Science

Student Name: Braden Young

Team Members (if any): Sheldon Chatelain

Project Title: Acicity in Liquids

Abstract: To find out how much acid is in liquids. We took purple cabbage and water, and made a indicator. Then we mixed it with different liquids such as Rock Star, Moutain Dew, Lemonade, G2, and so on. Then we looked at the colors and determined how much acid was in the liquid. My hypothesis was I thought Rock Star would have the most acid, and it did.