

68th
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JUNIOR
DIVISION
ABSTRACTS



Pittsburgh Regional Science & Engineering Fair is a major event of the SciTech Spectacular

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Note: Additional projects may have been added after the printing of this book. Omissions should not be considered as a negative reflection on the student or their project.

JUNIOR DIVISION – PHYSICAL SCIENCE

Project Number: JPS001

Grade: 6

Title: Which rocket design has the most successful launch and reaches the highest altitude?

Abstract: I was always fascinated by the different rocket designs and I wondered which one is most efficient. I tested different designs keeping some features common and some variable. The rockets I used had similar engines, length of the rocket and number of tail fins. The upperparts of the rockets were different with a rounded nose (parabola), long cone nose (ogival) and a long cone nose with nose fins. These rockets were tested measuring their successful launches and recovery as well as their highest reach. A Successful launch was taken as a vertical take-off without change in direction. Recovery was recorded as successful, retrievable, or failure depending on where the rocket landed. I found that all of these rocket designs had successful launches, but the recovery and the highest altitude reached varied. My conclusion was that the rocket with rounded nose reached the highest altitude, as they had the lowest drag. However the recovery was the lowest in this design. The successful recovery was much higher in rockets with multiple nose fins.

Project Number: JPS002

Grade: 6

Title: How High or Low Can You Go!

Abstract: Since I am interested in and play sports, I wondered if the temperature of the ball would have any affect on the way it bounces. I hypothesized that the heated ball would have a higher bounce since the particles of matter move more rapidly when hot. I placed three tennis balls at different temperatures. One was placed in the freezer, one at room temperature, and one was heated with a hair dryer. All were left at these temperatures for a constant amount of time. The balls were then dropped and the height of the bounce was measured. My conclusion supported my hypothesis that the heated ball would bounce higher.

Project Number: JPS003

Grade: 6

Title: Cookies

Abstract: Please visit exhibit for student's abstract.

Project Number: JPS004

Grade: 6

Title: How does your air effect your bounce?

Abstract: Air pressure is the force that air has against other surfaces. The more air in a contained area, the more air pressure there is in that area. The purpose of this experiment is to examine how air pressure affects the bounce of a basketball. In this experiment I dropped a ball from 80 inches at varying air pressure amounts and then measured the bounce height of the basketball. I concluded that an increased amount of air pressure results in an increased bounce height. Having an optimal amount of air pressure in a basketball directly affects the basketball's overall performance.

Project Number: JPS005

Grade: 6

Title: Magnet Attraction

Abstract: The purpose of this experiment was to determine if magnets were affected by hot and cold weather. There were two temperatures used to consistently test each magnet they were: 402°F or 205.56°C (hot) and 27°F or -2.78°C (cold). Five trials were conducted to show the validity of the experimentation.

JUNIOR DIVISION – PHYSICAL SCIENCE

Project Number: JPS006

Grade: 6

Title: Wave Erosion

Abstract: Wave erosion is always at work at your favorite beach. This experiment was to learn if changing the beach material affects the amount of erosion. Six soil/sand samples were placed in a 12-gallon fish tank to simulate beach and wave conditions. The beach height and length was measured and I created waves. If the simulated beach height or length was affected, it was determined that the beach was not able to withhold the powerful waves. Interestingly, the findings were that the most natural beach was made out of play sand, but it also eroded the fastest.

Project Number: JPS007

Grade: 6

Title: Crystals

Abstract: Crystals grow in many conditions, but where do crystals grow the fastest? That was my big question. I began my project by growing crystals. The substance used in growing the crystals was a combination of table salt and boiling water. I made six batches of crystals. I put two batches in the freezer, four on a table in my basement, two of which, I placed in the oven at 100°F for one hour every day. After growing my crystals for ten days, the crystals placed in the freezer ended up growing the fastest, but the crystals growing in a heated condition, grew the best. My hypothesis of the crystals growing the fastest in a heated condition was proven wrong.

Project Number: JPS008

Grade: 6

Title: Square vs. Triangular

Abstract: The purpose of my project is to see which formation is stronger: square or triangular. After making my formations, I tried the square one first. When I saw it held, I tried the triangular one. I saw it twist, but then it held. I originally had three formations: one square, two triangular. The first triangular was too large, and needed more support. I made it smaller, and made the square the same size. Then I experimented. After doing everything I did, I came to the conclusion that the square formation was only slightly stronger than the triangular formation.

Project Number: JPS009

Grade: 6

Title: Insulation...Which One is Best?

Abstract: The purpose of this project was to determine which types of insulation would retain the most heat in a model house over a given amount of time. The types of insulation were: Fiber Glass, Bubble Wrap, Attic Insulation, and Sheeting foam. Every house began at a temperature of 60°F or 15.56°C, and then they were positioned in cooler temperatures to record the difference in temperature over time.

Project Number: JPS010

Grade: 6

Title: Is it easier to shoot a .22 rifle sitting or laying down?

Abstract: The purpose of my experiment is to figure out if it is easier to shoot a .22 rifle laying or sitting down. My conclusion was that it is easier to shoot a .22 rifle laying down for me and sitting for the other kid.

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Project Number: JPS011

Grade: 6

Title: Rust Busters

Abstract: I chose this experiment to see the way metals react when exposed to regular tap water and saltwater. Label the test tubes with the name of the metal and type of water used and fill them accordingly. Check the test tubes daily and record any changes. During my experiment, I have changed the physical characteristics of some of the metals. Corrosion and oxidation caused these changes. The least affected metal was aluminum. The other metals had a varying degree of physical change. In conclusion, I could see a definite change in most of the metals which made an interesting experiment.

Project Number: JPS012

Grade: 6

Title: Are you Gellin'?

Abstract: The purpose of my project was to find out if the viscosity of a gel changes when the amount of corn starch is increased. Using corn starch and water, I made four gel suspensions, each containing different amounts of corn starch. I heated each suspension in the microwave for 1 minute, 30 seconds. After the suspensions were heated, I put them on graph paper. The gel containing 5% corn starch covered 37 squares, 10% covered 28 squares, 15% covered 26 squares, and 20% covered 19 squares. In conclusion, the more corn starch, the thicker; the less corn starch, the thinner.

Project Number: JPS013

Grade: 6

Title: Light Bulb Heat

Abstract: The reason I did this experiment was to see what type of light bulb gave off the most heat. This is important to know because if you leave your light on while you are gone you should buy the one that uses the lowest energy. I found that the flourecent bulb put off the least amount of heat. The light bulbs I tested were in my house. I tested the following bulbs; 40 watts, 75 watts, 70 watts flourecent. This experminet was really fun for me. I liked leaving the lights on but now I know not to leave the lights on because it wastes energy.

Project Number: JPS014

Grade: 6

Title: Terminal Velocity

Abstract: An ultrasonic motion sensor was used to measure the terminal velocity of cups and coffee filters that varied in weight and cross-sectional area. The terminal velocity of these objects was experimentally proven to be proportional to their weight. Terminal velocity was also shown to be proportional to the inverse of the cross-sectional area of these objects. Based these observations, a linear model was developed to predict terminal velocity from both the weight and cross-sectional area. This model was proven able to predict the terminal velocity of eight different objects with an average error of 9.14%.

Project Number: JPS016

Grade: 6

Title: Alarming Alarms

Abstract: This project was done to determine what type of alarm sound wakes me fastest. Three different alarms sounds were used and the waking time was recorded. It was determined that the buzzer sound woke me up the fastest. Future work is planned to determine if the hours of sleep affect which alarm wakes me up the fastest.

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Project Number: JPS017

Grade: 6

Title: Cleaning-up Oil Spills

Abstract: The purpose of this project was to see what material would clean-up an oil spill the best. First I tested the polypropylene for how much oil it could absorb by measuring the remaining oil on the water. Then I tested the gauze and cotton balls and recorded the results. The polypropylene absorbed the most oil. The gauze did not absorb nearly as much oil as the polypropylene. The cotton balls absorbed the least amount of oil. I concluded my hypothesis was correct, because the polypropylene absorbed the most oil. I could improve my project by testing more materials.

Project Number: JPS018

Grade: 6

Title: Effect of Borax on Slime

Abstract: Homemade slime is a lot of fun to make and play with. I wondered what would happen to the slime if I varied the amounts of Borax added to my recipe of Elmer's glue and Borax. Four different recipes with varied amounts of Borax were used during my project. I learned that the firmness was changed when I used different amounts of Borax and sometimes the slime did not absorb all the liquid. In doing my project, I had a lot of fun, and learned a lot about polymers and chemical reactions!

Project Number: JPS019

Grade: 6

Title: How a Sprinkler Head Works

Abstract: The purpose of my experiment is to extinguish the fire that has ignited. Then I put the pipe together with a pipe threader. Last I had my dad light a fire so that the linkage would burst. Things that I learned was that not all systems are alike. Most of the systems are different and unique in their own way. In my conclusion, the fire system does the society good and saves lives and property.

Project Number: JPS020

Grade: 6

Title: Iron in Cereal

Abstract: Please visit exhibit for student's abstract.

Project Number: JPS021

Grade: 6

Title: How Can We Convert Wind to Electrical Energy

Abstract: The purpose of this experiment is to see how wind can be converted into electrical energy. I used a hair dryer as the wind and a windmill as a generator. When the wind was blown towards the windmill, the blades spun, and the LED turned on. When I moved the wind away from the windmill, the blades slowed down, and the LED turned off. The results showed that speed affects whether electricity is created or not.

Project Number: JPS022

Grade: 6

Title: Sticking Together Thru Hot & Cold

Abstract: My purpose was to test if magnets are stronger by heating or cooling them. I tested a room temperature magnet by putting paper between a paperclip and the magnet, repeating with hot and cold magnets, and different sizes. My results showed that room temperature worked best

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for the large round magnet and warm worked best for both the medium square and small rectangular magnets. My hypothesis was confirmed, that room temperature magnets would work the strongest and extreme temperatures would not be as strong. If I were to do this project again, I could have used larger magnets.

Project Number: JPS023

Grade: 6

Title: Which Bridge Can Hold The Most Weight?

Abstract: The purpose of this experiment was to determine which type of bridge could hold the most weight. The procedure started with constructing a truss bridge by using Popsicle sticks, glue, and blocks and then weighing it. I then constructed a beam bridge with wooden dowels and blocks weighing the same as the truss bridge. I put the weight on the bridges and compared the effect it had. I recorded the weight and described the effect on each bridge. A truss bridge was stronger because it is more efficient and balances the live load with its superior design of triangles.

Project Number: JPS024

Grade: 6

Title: The Strength of Structures

Abstract: The purpose of this experiment is to determine which structure is the strongest. Three structures were tested: a triangular pillar, a square pillar, and a x-shaped pillar. The procedures are as follows: All three structures were placed under a wood board and weights were placed on top. Weight as continually added until the structure break/collaped. Process repeated. My hypothesis was proven incorrect. The square pillar did better than the hypothesized x-shaped pillar.

Project Number: JPS025

Grade: 6

Title: What kind of Salt melts ice the fastest?

Abstract: This experiment evaluated which salt is most effective in deicing. Ice cubes were measured in cubic centimeters. Four of the cubes were placed on different types of salts. A fifth cube was a control. After five minutes the cubes were removed from the salts and measured again. Rock and table salts melted the cubes equally as fast, followed by kosher salt, then sea salt. The control melted the least amount. The conclusion supported the hypothesis that rock salt would melt the ice cubes fastest. It was not predicted that table salt would melt ice as much as the rock salt.

Project Number: JPS026

Grade: 6

Title: Effect of Heat on Speed of Toy Cars

Abstract: The purpose of this experiment was to determine if hot, cold, or room temperature cars go the fastest. The following procedure was followed when conducting the experiment. Heat two cars in the oven, put two cars in the freezer, and keep two cars room temperature. Build a track to run toy cars along. Forty trials for each temperature were completed. The average speeds for each temperature were recorded. It was determined that the cars that were heated in the oven went the fastest overall.

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Project Number: JPS027

Grade: 6

Title: Most Water with Least Material

Abstract: My project was to design a tower which would hold at least 2.65 Kg of water using the least amount of material, following the design requirements outline in the Research Plan. Testing was done using gravel rather than water. I started out with 4 designs, two using three legs and two using four legs. Two designs used the smallest diameter top with the smallest diameter bottom, and two designs used the largest top diameter with the smallest bottom diameter. My first designs were just legs without any structural bracing. These designs mostly failed by bowing and twisting. I decided to add a brace around the middle of each leg and retested each one. The towers now failed mostly by twisting but not so much by bowing. Then I add inverted V bracing to all of the designs, and the Small Topped Triangular Tower was the one with the least amount material and it held the most gravel.

Project Number: JPS028

Grade: 6

Title: Are We Carrying Too Much Weight?

Abstract: This project is important because it can help students correct improper backpack use. Six out of the eleven students carried more than 15% of their body weight. The hypothesis that was tested was proved to be correct.

Project Number: JPS029

Grade: 6

Title: Battery Power

Abstract: My project is to see what AA batteries work the best. All batteries have different chemistry make-up and different cell voltage. Most battery voltages come in increments of 1.5 volts, which is the number of individual cells in the battery. Newer batteries, like rechargeable batteries have approximately 1.25 volts per cell. Some things may not run right on rechargeable batteries because of the lesser amount of volts. My hypothesis was that the lithium battery would hold out the longest. The reason I chose that this battery would last longer than the others is that it was the most expensive batteries that I used and the label said it lasts 7x longer than alkaline batteries.

Project Number: JPS030

Grade: 6

Title: Hot or Cold

Abstract: The purpose of this experiment was to determine whether chewing gum would change the temperature of the mouth. There were five individuals tested five different times to verify the results. Many advertisements convince people that their product will make the mouth cooler. This experiment was to check the validity of those advertisements.

Project Number: JPS031

Grade: 6

Title: Disappearing Act

Abstract: I investigated which liquid evaporates the fastest. I did this because I was curious if liquids other than water evaporated. I thought Rubbing Alcohol would evaporate the quickest. I first measured 30mL of each liquid. Then I poured the liquids into a cup, watched, and measured as they evaporated. The evaporation rate was timed by days and the liquids were kept at the same temperature. The Apple Juice became too moldy to use in my experiment. The liquids evaporated in this order Rubbing Alcohol, Dr. Pepper, water, Gatorade, vinegar, hydrogen peroxide. I was correct Rubbing Alcohol evaporated the fastest.

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Project Number: JPS032

Grade: 6

Title: Metals vs. Acids

Abstract: My project is about metals and acids. My purpose for doing my project is to find out how metals will react in acids while they are heated and cooled to different temperatures. The metal reacted greater heated and less cooled. The aluminum, cold, and hot roll steels, and the alloy steel reacted the most with gasses, flaking, and large amounts of bubbling. The copper and brass re-acted the least with only bubbling. There were many things that effected the metal such as temperature, the acid, and ho long it was put in.

Project Number: JPS033

Grade: 6

Title: Growing Riches

Abstract: My experiment involved growing crystals. The problem I am trying to solve is, "Under which conditions will crystals grow the best?" The conditions I used in the experiment are room temperature, refrigerator, and artifical light. My hypothesis is that crystals would grow best in the refrigerator. I hypothesized that because crystals are usually found in dark, cool places. The purpose of this experiment was to determine the best condition for growing crystals. I chose this tooopic and experiment because I am interested in minerals, and the different types. I like reading about how they form, and why the minerals turned out the way they are. My results showed that crystals grew in colder conditions. In Trial 1, I had 12 crystals grown, in Trial 2 I had 10 and in Trial 3 I had 11 crstals grow. But in room temperature, only 5-7 crystals grew in each jar. In heat I only had 3-6 crystals grow. So in conclusion the crystals grew the best in the refrigerator, and the least in room temperature. My hypothesis was proven correct.

Project Number: JPS034

Grade: 6

Title: Rusting Metals

Abstract: I chose this project to see what kind of water metals corrode the fastest. My hypothesis is that metals will corrode the fastest in distilled water with salt. To perform this project I used steel, copper, and aluminum wire and cut them in half. Next I used three beakers and filled them with distilled water ans salt. Finally I put three of the wires in the beakers with salt and the other halves of the wires in the beakers with no salt, and observed the wires for fifteen days. I learned that metals will corrode fastest in distilled water with salt, and that aluminum wire does not corrode and when copper corrodes it turns green, and when steel corrodes it turns orange-brown.

Project Number: JPS035

Grade: 6

Title: Which candle Burns the Longest?

Abstract: My project is explaining how the Yankee candle will outlast the White Barn candle. Each day I will light the candle for a couple of hours. Once they have burned for a couple of hours, I will then measure (in millimeters) how much of the candle is remaining. I will track the measurements for ten days in my journal. After ten days, I will summarize the results and reach a conclusion. My results showed that the Yankee candle did outlast the White Barn candle. These results verified my own conclusion of which candle would last longer.

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Project Number: JPS036

Grade: 6

Title: Rates of a Chemical Reaction

Abstract: The purpose was to test the effect of temperature and substrate concentration on the rate of a reaction. Solution A(Sodium Iodate Solution) and Solution B(Sodium Sulphite and Citric Acid with starch as indicator) were mixed and the reaction time noted. I tested the rate at three temperatures (5 C, 25 C, and 55 C) and with different concentrations of sodium iodate and citric acid. Each condition was repeated three times and mean reaction time calculated. Increasing temperatures and increased substrate concentration shortened reaction time. I conclude that increasing temperatures and increased substrate concentration increase the rate of reaction..

Project Number: JPS037

Grade: 6

Title: Which Liquid Conducts the Most Electricity?

Abstract: The reason I selected this project is because of my interest in the electrical field and I hope to prove the best liquid to conduct electricity. I took the reading from the wire that had electricity flowing through it from the liquid that had electricity being put into it. My hypothesis was the Pepsi would conduct the most current. I think of this because of the acid. My experimented liquids are listed from least to greatest with their averages here. Water (0.046mA), ice tea (0.064), Pepsi (0.064mA), Milk (0.116mA), and Gatorade (0.164mA). I was disappointed in the fact that my hypothesis was wrong.

Project Number: JPS038

Grade: 6

Title: Strong Structures

Abstract: Please visit exhibit for student's abstract.

Project Number: JPS039

Grade: 6

Title: Lightning

Abstract: The purpose of this experiment is to demonstrate how lightning works. In order to do this, tape foil over TV screen. Connect foil to a can using another piece of foil. I hung a pop tab from a string between the first can and a second can an inch away. Turn on TV. The reaction is a charge produced and collected by the foil. A negative charge was transferred to the first can. The tab vibrated between the two cans for a short time. When I turned the TV off, the tab vibrated back and forth again. Negative charges were transferred between the cans and tab causing it to be repelled and attracted. This experiment will teach people to stay away from lightning.

Project Number: JPS040

Grade: 6

Title: Hot or Cold--Which one makes a magnet stronger?

Abstract: The problem that I tried to solve was which temperature makes a magnet stronger. I placed the magnet into various temperatures then recorded the amount of paper clips that the magnet was able to pick up. The magnet that was placed in the dry ice was the strongest.

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Project Number: JPS041

Grade: 6

Title: What Building Frame is the Strongest?

Abstract: I wanted to determine the longitudinal strength of structures in 2 & 3 dimensions. I built structures in these dimensions using toothpicks and wax balls. I placed weights on each structure and found out how much weight they held. I recorded and compared my data. I determined that triangles are stronger than squares. The strongest kind of triangle is one with an acute upper angle. The strongest possible building frame would have lots of acute upper angled triangles. A follow up experiment might be to test each structure a greater amount of times and to test for horizontal strength.

Project Number: JPS042

Grade: 6

Title: Magnetic Pull at Different Temps

Abstract: Please visit exhibit for student's abstract.

Project Number: JPS043

Grade: 6

Title: Paper Airplane Performance

Abstract: The purpose of this investigation was to determine what type of paper airplane flies the farthest distance. Different types of paper airplanes were shot out of a launcher and the distance they flew was recorded. I thought that The Dragonfly would go the farthest distance because it had the heaviest tip, but that hypothesis was not supported by the data. The Origami Plane flew the farthest distance because it had the widest wing span.

Project Number: JPS044

Grade: 6

Title: Blast Off

Abstract: Would using different sodas than Myth Buster's Mentos and Diet Pepsi, cause a different explosive reaction? My prediction was a higher caffeine drink, such as Diet Mt. Dew, would have a higher explosive result. I tested 10 different soda drinks, caffeine and non-caffeine as well as regular and diet. Same number of Mentos candies were dropped into the drinks. The height of the explosion and remaining liquid was measured. My hypothesis was incorrect. Diet Mt. Dew did not perform. Caffeine had nothing to do with the explosion. I enjoyed doing this experiment because of the unknown expectation from each soda.

Project Number: JPS045

Grade: 6

Title: Salt Water Buoyancy

Abstract: Everyone likes to float in the pool and ocean, but which one allows you to float better. I did this experiment to find out if salt water has more buoyancy than fresh water. To do my experiment, I put a pencil in a glass of both fresh and salt water, marked the water line. Then I repeated this same step using an egg. I found that in both cases, the object floated better in salt water than in fresh water.

Project Number: JPS046

Grade: 6

Title: True North vs. Magnetic North

Abstract: Problem - is true north the same as magnetic north Hypothesis - true north is not the same as magnetic north Materials –thermometer, scientific watch, transit, GPS System, books

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Procedure - get date, temperature, barometric pressure, time, altitude, and latitude; find Polaris in book; set up transit; get magnetic reading from compass; find Polaris while looking through transit; get angles; get latitude Data - record temperature, barometer, time, altitude, and latitude; record magnetic reading; record latitude Conclusion - true north and magnetic north are not the same; declination calculated

Project Number: JPS047

Grade: 6

Title: Visualizing Voice Spectrums

Abstract: The purpose of this experiment is to distinguish between male and female voice samples using frequency spectrum analysis. I collected five male and five female voice samples using Audacity software, a computer and a microphone and plotted the frequency spectrum of each sample. I analyzed the spectrograms and found striking differences between male and female voice samples.

Project Number: JPS048

Grade: 6

Title: What will hold more mass suspension or cable-stayed

Abstract: The purpose of my experiment was to test the main two bridges (suspension, and cable-stayed), and see which one would support more mass. First, what I did over the course of six days is make three suspension and three cable-stayed bridges for a total of six bridges. I knew I was going to use two of each to test. My hypothesis was that cable-stayed would hold more mass than suspension. What I did was tie a harness around the center of the bridge and add weights until it breaks. My hypothesis tested true and cable-stayed proved to be much stronger.

Project Number: JPS049

Grade: 6

Title: Kneepad Knockout

Abstract: The purpose of my project is to find which wrestling knee pad is the most durable. I labeled each knee pad to tell them apart. I took pictures to show how much each kneepad sank after use.

Project Number: JPS050

Grade: 6

Title: How Much?

Abstract: My purpose is to find out "Which Strip of Material is the Strongest?" My procedure is as follows, first, I will cut three strips of material with the same width and length. Next, I will tape one wooden pencil (same length and weight) to the bottom of each strip. After, I will cut two holes on each side of the plastic bowl. Next, I will attach the bowl to the wooden pencil by a string. Finally, I will hold the material by the top and slowly add pennies until all of the strips rip and the bowls fall. I will repeat the steps by untying the string and tying the bowl back up to a different material. The data I collected is that the brown paper bag held the most pennies with the amount of 300+ pennies. The garbage bag came in second with the amount of 262 pennies. The paper towel came in last with the amount 194 pennies. My conclusion is that my hypothesis was wrong. I thought the garbage bag material would be the strongest because it can hold a lot of garbage, but the brown paper bag held the most. I am glad I use a brown paper bag for lunch!

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Project Number: JPS051

Grade: 6

Title: pH Level Testing

Abstract: I have noticed when I was at the store there are all different waters besides tap water. I wanted to see if the pH was neutral for all brands. Spring water, distilled water, Aquafina water, and tap water were tested. All were different pH. Spring water was most acidic at 7.2, and distilled and Aquafina were most basic at 6.2.

Project Number: JPS052

Grade: 6

Title: Melt in your mouth

Abstract: The purpose of this experiment was to determine which type of chocolate was able to melt the quickest. The types of chocolate that were tested were: White, Milk, Dark, Baking, and Semi-Sweet.

Project Number: JPS053

Grade: 6

Title: What Type of Wood Is Most Absorbent?

Abstract: My project was, What Type of Wood Is Most Absorbent? I found my idea when my mother and I were gathering wood for a fire. Some of the wood did not burn well in the fireplace. I cut and soaked five different types of wood, each weighing 453.6 grams (one pound), for one week. After that week, I reweighed the five woods. Cedar absorbed the most water out of the five. Walnut absorbed the least amount of water. My hypothesis was not supported, as cedar absorbed the most water.

Project Number: JPS054

Grade: 6

Title: Heat, Heat For Everyone

Abstract: Insulation is used in daily lives, mostly in winter. I tested which is the best type of insulation because I wanted to stay warm during the winter. I did it by basically filling a babyfood jar with hot water and wrapped an insulating material around it. I waited for an hour and removed the insulator. I used a thermometer to record the temperatures before and after the one hour time period. The best insulator was the one that kept the highest temperature. Fiberglass ended up being the best insulator.

Project Number: JPS055

Grade: 6

Title: What "Wood" Burn Faster?

Abstract: The purpose of my project is to determine what would burn faster; pine poplar, or oak. Each piece of wood was 3.5 inchest by 2 inches by .75 inches. Each piece of wood was weighed and then burned for five minutes and thirty seconds. They wre then put in water to stop the burning process. Each piece was weighed after thirty minutes, twelve hours, and twenty-four hours. The weight of the woods were recorded and checked to see which piece of wood had the largest difference of weight. The poplar had the largest difference in weight.

Project Number: JPS056

Grade: 6

Title: Which Bridge Type is the Strongest?

Abstract: My experiment is to determine which bridge is the strongest; the beam, triangle, double-truss, or arch bridge. The procedure performed was as follows: construct two balsa wood

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bridges for each type; measure the strength of each bridge by hanging a bucket from the center support beams and slowly adding sand until it breaks; weigh the bucket and sand needed to break each bridge and record the results; after performing the tests, my hypothesis that the double-truss bridge was the strongest was proven incorrect. The arch bridge was the strongest followed by the double-truss, triangle, and beam bridge.

Project Number: JPS057

Grade: 6

Title: The Sounds of Music

Abstract: When musical notes are put together they make a song. The purpose of this project was to make a musical scale using household items. I took 8 glasses and added 25 mL of water to each glass. Then I added 25 mL more to each glass to create different notes on the musical scale. I used my piano to make sure the notes were the correct tone and pitch. The more water added to the glass, the lower the tone became, giving a correct musical scale. I was able to create a musical scale out of household items.

Project Number: JPS058

Grade: 6

Title: Color Breakdown!

Abstract: my experiment involved what colored dyes are found in powdered drink mix. Paper chromatography, which separates a mixture into its component pigments will be used to analyze the various colored dyes presented in five flavors of drink mix. I mixed the powdered drink mix with water and put a drop of water on the 6x6in. squares of filter paper. Then I put the filter paper into rubbing alcohol for twenty minutes with lids on top of the jars. Now I just created chromatography. I hypothesized that drink mixes contained more than one color. In conclusion, I found that after each trial all of the drink mixes had different amounts of colored dye in them. It depended on the flavor of the drink mix. Red was the more common color in the mixes.

Project Number: JPS059

Grade: 6

Title: Does Salt Water Affect All Metals?

Abstract: Please visit exhibit for student's abstract.

Project Number: JPS060

Grade: 6

Title: To corrode or not to corrode, that is the question

Abstract: My project was to see which liquid would rust a nail the fastest. My purpose of the project was to know which liquid would rust the nail fastest because I heard that Coca-Cola took rust off of a nail and I wanted to know if it rusted one too.

Project Number: JPS061

Grade: 6

Title: How Optical Fibers Carry Light?

Abstract: Have you ever given a thought as to how the Optical Fibers might be carrying light through them? To find out how, this experiment was conducted in which a hole was cut through the bottle and then it was filled with water. Next, the rechargeable flashlight was flashed from the other side of the bottle (opposite side of the hole). This process was repeated with different bottles and by changing the intensity of light. One could see light emerging out of the bottle along with the water and hence proving this principle of Optical Fibers.

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Project Number: JPS062

Grade: 6

Title: Water Absorbers

Abstract: The purpose of this project was to determine which wood could hold the most water. Oak, Cherry, Pine, Walnut, and Plywood were tested for a total of seventeen consecutive days in tap water. They were randomly weighed to check the results over the seventeen day span.

Project Number: JPS063

Grade: 6

Title: Electric Heat

Abstract: I set out to prove that a higher wattage light bulb would give off more heat than a lower wattage light bulb. I constructed a heat-box mounted on a lamp. I installed a Celsius thermometer in the box to measure the change in temperature. I used a 25, 40, 60,75, and 100 watt light bulb and did three trials with each wattage. My data showed that the average heat rates proved by hypothesis correct.

Project Number: JPS064

Grade: 6

Title: Magnetic Linear Accelerator

Abstract: The purpose of my experiment was to find out if adding more magnets and putting them closer together will increase the distance the ball will launch on a Magnetic Linear Accelerator. The procedure I used for this are as follows: get a piece of wood with a groove; tape each magnet 3 inches from each other; put 2 nickel-plated steel balls on one side of each magnet; roll a ball toward the first magnet; do this with 4 and then 6 magnets, measure the distance the ball launches; decrease the magnets spacing to 2 ½ inches, repeat the procedure; and record the results. In conclusion, my hypothesis was wrong. Adding more magnets will increase the distance, but putting them closer together decreased distance

Project Number: JPS065

Grade: 6

Title: Bouncy Balls

Abstract: Basketball is a very popular sport around the world. This project was done to decide whether air pressure in a basketball effects how high it will bounce. I inflated three basketballs to different air pressures (regulation, over-inflated, and under-inflated) I then bounced these basketballs from the same height and velocity onto the same area of pavement. I measured and recorded the height of each bounce. I concluded that air pressure within a basketball will effect how high it will bounce.

Project Number: JPS066

Grade: 6

Title: Variations in propeller design

Abstract: The experiment's purpose is to study air turbines. The angle of the blade is changed from the control of 0 degrees to the air source to 30, 45, 60 and 90 degree in the experimental group. As air passes through the turbine the amount of electricity produced is measured. The results are measured and compared to the control. Each time the angle is increased the amount of energy produced by the electric motor also increases. The data supported the hypothesis that increasing the angle of the turbine to the air source would increase the amount of energy produced.

JUNIOR DIVISION – PHYSICAL SCIENCE

Project Number: JPS067

Grade: 6

Title: R-Values of Coca-cola Containers

Abstract: What container keeps Coke-Cola cold the longest? My intent was to determine the thermal values of an aluminum can, a glass bottle and a plastic bottle. After chilling these three different containers of Coca-Cola in our refrigerator, I took temperature readings of the liquid every fifteen minutes for three hours. This process was repeated over a three day period in the same conditions and data was collected. It was determined from the data that the aluminum can kept the liquid cold the longest. The reflective properties of aluminum must keep the liquid cold inside and heat bouncing off the outside.

Project Number: JPS068

Grade: 6

Title: Bridge Structures

Abstract: Please visit exhibit for student's abstract.

Project Number: JPS069

Grade: 6

Title: Which Color Absorbs The Most Heat?

Abstract: The purpose of this experiment was to determine which colors absorb the most heat from white light. The procedures for this experiment I performed included shining a white light from a specific distance on to an insulated wooden box fitted with a colored cardboard square as the top. The temperature of the air inside the insulated wooden box was then measured. These procedures were repeated for five additional colors and six additional light distances. The measured temperatures increased as the colors became darker. This indicated that more heat was being absorbed as the color became darker.

Project Number: JPS070

Grade: 6

Title: "What's the Right Light?"

Abstract: I tested how color and light effect plant life. I chose marigolds. I took four glass vases and covered three of them with red, yellow, and blue cellophane. I then put potting soil in the vases. I met with a chemical engineer who taught me color value reading. I watered each one quarter cup each few days. My conclusion was that the blue filter was best.

Project Number: JPS071

Grade: 6

Title: When Pigs Fly

Abstract: Please visit exhibit for student's abstract.

Project Number: JPS072

Grade: 6

Title: Color your thinking!

Abstract: The purpose of this experiment was to determine whether mixing colored lights using a flashlight with cellophane would render the same results as mixing colors of paint. There were five different colors of cellophane that were used in the experiment: Purple, Yellow, Red, Blue, and Green. There were five trials done to establish the validity of the experiment.

JUNIOR DIVISION – PHYSICAL SCIENCE

Project Number: JPS073

Grade: 6

Title: Antifreeze Effect

Abstract: Water obviously freezes at 32°F or 0°C. This project is intended to see if Salt, Sugar, or Baking Soda will alter the frozen temperature the most, and to see how much. There were 4 cups of water, and each had a different dissolvent out of the three, and one was the Control (Which Was Just Water). After stirring each for 45 seconds to 1 minute, and put in to a -30°F freezer. After a night, they were taken out. The results were that the salt acted best as Antifreeze, loosening the bonds of the ice, so the ice melted faster.

Project Number: JPS074

Grade: 6

Title: Battle of the BB's

Abstract: My purpose for this project was to find out which BB's are the best because I use an airsoft and I wanted to know which BB's were the best. The procedures are: 1. Put a BB into the speed loader 2. Put BB into the gun 3. Shoot at the jello block 4. Record how far the BB went in 5. Repeat steps 1-4 six more times. My conclusion was that the high density BB worked better than the regular ones.

Project Number: JPS075

Grade: 6

Title: Breaking Bridges

Abstract: Please visit exhibit for student's abstract.

JUNIOR DIVISION – LIFE SCIENCE

Project Number: JLS001

Grade: 6

Title: Terrariums

Abstract: Please visit exhibit for student's abstract.

Project Number: JLS002

Grade: 6

Title: Natural Soil vs Potting Soil

Abstract: The purpose of my study was to see which produce the first sprout growth, natural soil or potting soil. I used 10 cups each of natural soil and potting soil, approximately the same number of seeds and same amount of water in each cup. I took daily readings of sprout growth for 14 days. The natural soil produced the first sprouts. From day 8 through day 12, sprout growth was almost equal in both soils. By day 16 most of the potting soil sprouts had died. I concluded that the natural soil was better for first sprout growth.

Project Number: JLS003

Grade: 6

Title: Organic vs Synthetic Fertilizer

Abstract: Please visit exhibit for student's abstract.

Project Number: JLS004

Grade: 6

Title: Have a Coke and a smile

Abstract: chose coke, diet coke, and sprite to see which will cause the most damage to our teeth. I took x-rays and photographs of teeth prior to soaking the teeth in 3 different sodas for 1 week. Then I took x-rays and photos after. I also took a photo every day and noticed the effect the sodas had on the teeth. The diet coke seemed to be worse on the 7th day.

Project Number: JLS005

Grade: 6

Title: Family Finger Prints – Similarities

Abstract: My hypothesis is that I think children will more likely have fingerprints of the same type as their parents. And children will probably get the double form of the fingerprint that both of the parents have. So far, I have concluded from my research and comparisons that children do normally have the print that either of the parents have. So, in my experiments I have seen only one double type and it was from me. I think that my biological father had a double whorl. A special fact about me is that I am adopted, so I don't know my biological father's real print.

Project Number: JLS006

Grade: 6

Title: I Know You Are Staring At Me

Abstract: This experiment attempted to determine if people can detect when someone is staring at them from behind. Each subject had to face away from the researcher in a chair, while the researcher sat behind the subject facing the subject's back. The subject was given a subject staring sheet and asked to check at the end of each one minute time interval "yes" or "no" regarding if they believed the researcher had been staring at them during the ten intervals. In the experiment it was proven that people cannot detect if someone is staring at them.

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Project Number: JLS007

Grade: 6

Title: Pumpkin Seeds

Abstract: My project was for the people who grow pumpkins for a living. And to help them learn, which size pumpkin would produce the most seeds. I cut open each pumpkin and counted the seeds, and placed them in a specific bowl, labeled with size and amount. The medium-sized pumpkins contained the most seeds, not the small-sized pumpkins. But, the large-sized pumpkins contained the least amount. My hypothesis was partially correct, because the medium sized pumpkins contained the most seeds, not the small sized pumpkins. But, the large-sized pumpkins contained the least amount of seeds.

Project Number: JLS008

Grade: 6

Title: Judging Sound Direction

Abstract: This experiment was to find out if being deaf in one ear changes your judgment of sound direction. Subjects, half unable to hear out of both ears, were picking out sound from eight points around a circle. Only 35% of the guesses of the subjects with one good ear were correct. 71% of the guesses of the subjects with two good ears were correct. This shows that people who have one good ear cannot judge sound direction well.

Project Number: JLS009

Grade: 6

Title: The Unpredictable

Abstract: Can I accurately predict the weather myself? I have been infatuated with the weather for the passed two years. Watching the Weather Channel daily and trying to understand how hard it actually is for the meteorologist to predict the weather. To me, if you can look into the sky and have visibility for miles, you can bet it's not going to rain in the next hour. But to be able to look at a surface map of conditions hundreds of miles beyond the horizon and see that a front is now approaching, you could see rain is likely within the next few hours. Weather is simply the conditions of the air at any given place and time on earth and with a few simple weather tools; I think anyone can predict the weather within a couple days.

Project Number: JLS010

Grade: 6

Title: CO₂ Tester

Abstract: The purpose of this experiment was to determine which soft drinks contain carbon dioxide. The trials were conducted using a two-liter bottle and a balloon for each different kind of soft drink. The soft drinks that were used were soda, water, lemonade, apple juice, and Kool-aid.

Project Number: JLS011

Grade: 6

Title: Ice Ice Baby

Abstract: Salt has been used for years melting ice on roads. The work intended to see if any other salts could melt ice better with other types of salt. Five different types of salt were used to determine which one has the greatest effect. To my conclusion, sea salt had the greatest effect on the ice. It melted the ice the fastest.

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Project Number: JLS012

Grade: 6

Title: A sugary growth

Abstract: The objective of my science experiment is to determine whether flower seeds can grow when adding different soda pop to four planters over a 20 day period. The materials I used for my experiment are Mountain Dew, Pepsi, Coca-Cola, Diet Pepsi, 4 planters, potting soil, water, sunlight, four packages of Merrigold flower seeds, a measuring cup, and a measuring stick. First I labeled each planter with a label to identify the contents of soda pop. Then I filled 4 of the planters with potting soil. Then I added 1 package of Merrigold flower seeds to each planter. I added 2 tablespoons of pop and a half a cup of water. I placed each planter in sunlight and observed and measured plant growth. The results of my science experiment did not support my hypothesis. The planters with Mountain Dew and Pepsi sprouted flowers. The planter with Coca-Cola and Diet Pepsi did not sprout flowers.

Project Number: JLS013

Grade: 6

Title: Egg-cellent Eggs

Abstract: Please visit exhibit for student's abstract.

Project Number: JLS014

Grade: 6

Title: Hassling Hexapods

Abstract: My project investigates whether the removal of insect pheromone deposits can be useful in both controlling insect pests and decreasing the need for the broad use of dangerous insecticides. After allowing pavement ants to "lock onto" preferred food sources and establish pheromone-marked foraging trails, I disrupted those trails and forced them to forage more broadly. As I had hypothesized, the ants accepted new food sources, specifically low-toxicity insecticidal baits. Removing insecticide pheromone deposits proves to be a useful tool in controlling insects safely with much less toxic material.

Project Number: JLS015

Grade: 6

Title: Squeaky Clean

Abstract: The purpose of my experiment was to determine if instant hand sanitizer was more effective at killing germs than regular and antibacterial soap. To conduct this experiment I rubbed my hands on money, washed and dried them, then put them on the petri dish. I repeated these steps at three time intervals. After two days, I observed the petri dishes for bacteria. My data showed regular soap produced the most bacteria, antibacterial next, and instant hand sanitizer showed the least. The results of my experiment showed that my hypothesis was incorrect. Instant hand sanitizer clearly showed the least bacteria.

Project Number: JLS016

Grade: 6

Title: Reaction Action

Abstract: Will the distraction of noise affect a person's reaction time? Have the subject hold their hand in front of them with their thumb and finger 2cm apart. Hold a ruler between their thumb and finger and tell the subject to catch the ruler once dropped. Record the distance the ruler fell. Test three times without music then three times listening to loud music. The distraction of loud music does not always slow reaction time. The results show that 61% of the subjects had a faster reaction time while listening to loud music, while 39% had a faster reaction time without music. On average, the music quickened the test subjects' reaction time by 3%.

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Project Number: JLS017

Grade: 6

Title: What is the lowest level of acid that will allow seed germination

Abstract: Please visit exhibit for student's abstract.

Project Number: JLS018

Grade: 6

Title: "C" Is For Cookie

Abstract: The purpose was to determine if people could tell differences when cookie ingredients changed. Cookies were baked in four variations: regular, no vanilla, double vanilla, and sugar decreased halfway. Twenty subjects were tested. Subjects tasted four types of cookies. After tasting, they were asked what changed from the first cookie. The first cookie eaten was the regular sugar cookie. Next, no vanilla. Then, double the vanilla. Lastly, sugar decreased halfway. Responses were recorded and analyzed later. Data showed only four of 20 people found a change. The conclusion was 80% of people couldn't tell when ingredients changed in cookies.

Project Number: JLS019

Grade: 6

Title: Water Temperature and Plant Growth

Abstract: This investigation was conducted to determine which water temperature helped plants grow taller. For thirteen days, nine plants were watered. Three labeled H1, H2, and H3 were watered with hot water. Three labeled R1, R2, and R3 were watered with room temperature water. The last three were labeled C1, C2, and C3 were watered with cold water. The plants watered with hot water were in the middle with an average of 15.8 cm. The room temperature water grew the least with an average of 15.4. The cold water grew the most with an average of 18.3. People should use cold water to water plants.

Project Number: JLS020

Grade: 6

Title: Plant Growth In Soil

Abstract: The purpose of this investigation was to determine if plants can grow in other things besides soil and dirt. I got 30 styrofoam cups and labeled them S1-S10 for sand, G1-G10 for gravel, and D1-D10 for dirt. I put gravel, dirt, and sand each in 10 cups. Then I counted out 30 pieces of grass seed and placed it into each cup, and watered each cup every two days for 4 weeks. The average for gravel was 18.7 cm, the average for dirt was 20.8 cm, and the average for sand was 13.2 cm. My conclusion was that it is not necessary to grow grass in any other soils than dirt.

Project Number: JLS021

Grade: 6

Title: Fertilizer and Plant Growth

Abstract: The purpose of this investigation is to determine if one fertilizer will help the plant grow taller than the others. The hypothesis that fertilizer will make plants grow taller was not supported.

Project Number: JLS022

Grade: 6

Title: Doggie See Doggie Smell

Abstract: In my project, I wanted to see which of the senses of a dog were stronger, the sense of smell or the sense of sight. I used two subjects; Subject 1 and Subject 2. I had each subject

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walk around the house three times each. I started by having Subject 1 walk around the house three times as I observed my dog, to see what she did. The first time Subject 1 walked around the house, my dog smelled the ground and found the scent. On the second trial my dog didn't find the scent and looked for the Subject 1. On the last trial with Subject 1, my dog found the scent and also found the subject. Then I used the second subject; on the first and second trial, my dog found scent. On the last trial with Subject 2 she didn't find the scent. In the end, my dog found the scent four times but only looked for the subjects twice.

Project Number: JLS023

Grade: 6

Title: What Cheese Can Get the Moldiest ?

Abstract: This scientific experiment's purpose was to determine whether Bleu, Camembert, or Brie cheese will get the moldiest. The procedures were as follows: I put each slice of cheese in an then I put them in area in the box. Then I wait 1 to 3 weeks for growth. The results were that was Brie was first with an average of 6.3 followed by Camembert with an average of 5, and Bleu following with an average of 4.3. The hypothesis of the project was that Bleu cheese would produce the most mold but the data supported Brie.

Project Number: JLS024

Grade: 6

Title: The effects of worms on plant growth

Abstract: Please visit exhibit for student's abstract.

Project Number: JLS025

Grade: 6

Title: What's The Flavor?

Abstract: For this experiment, ten human subjects were tested. A drop of orange juice was placed on the tongue, one drop for each of the tongue's flavor receptors- salty, sour, bitter, and sweet. In between each drop, the subject was given a piece of plain white bread to cleanse the taste buds. The subjects were asked what they thought the flavor was. Most of the subjects thought the flavor was orange but some of them of the subjects thought that the flavor was lemon, sour apple, salt water. This was found very interesting. This project was conducted because it is such an interesting topic and all humans have tongues so the science behind it should definitely be known

Project Number: JLS026

Grade: 6

Title: Effect of Solutes on Seed Germination

Abstract: The purpose of this experiment was to study the effects of various solutes on seed germination. A legume called chickpea was used. Solutions of 0.05 M, 0.1 M and 0.2 M sugar, salt, sucralose and aspartame were compared with distilled water. One hundred seeds were soaked for 24 hours in each solution and observed for germination in darkness on moist paper towels. Results: As the molarity of various solutes increased the germination efficiency decreased. Conclusion: At 0.05 M solutes aided seed germination, while the 0.1 M and 0.2 M solutions hindered the germination. None of the solutes performed significantly better than water.

Project Number: JLS027

Grade: 6

Title: Which Preservative Works Best?

Abstract: Most flowers sit in a vase on your counter for a few days and then wilt. But the study I did proved that they can be preserved longer. I tested five different preservatives as additives to

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water; sugar, Sprite™, Diet Sprite™, plain water and a dissolved Vitamin D tablet. Sprite™ was the best preservative for roses. A retest confirmed my first results; Sprite™, used as an additive to water, is the best way to preserve roses in a vase. Will it wilt or won't it? With Sprite™ added to the water, it won't wilt as fast as usual.

Project Number: JLS027

Grade: 6

Title: Which Preservative Works Best?

Abstract: Most flowers sit in a vase on your counter for a few days and then wilt. But the study I did proved that they can be preserved longer. I tested five different preservatives as additives to water; sugar, Sprite™, Diet Sprite™, plain water and a dissolved Vitamin D tablet. Sprite™ was the best preservative for roses. A retest confirmed my first results; Sprite™, used as an additive to water, is the best way to preserve roses in a vase. Will it wilt or won't it? With Sprite™ added to the water, it won't wilt as fast as usual.

Project Number: JLS028

Grade: 6

Title: Deadly Algae

Abstract: The purpose of this project is to understand the impact of using products that contain phosphates. People may be damaging the environment without even knowing it. My procedure was to introduce various amounts of phosphates to three jars containing water and plants. Next, I measured the effect phosphates had on the plants. My results show that the more phosphates I added to the jars, the more algae grew. Algae growth affected the plants ability to live and grow.

Project Number: JLS029

Grade: 6

Title: Sleep and Eat for Success

Abstract: Please visit exhibit for student's abstract.

Project Number: JLS030

Grade: 6

Title: The effect of music

Abstract: Please visit exhibit for student's abstract.

Project Number: JLS031

Grade: 6

Title: The Grass Isn't Always Greener

Abstract: My question was under what condition does grass grow better, natural or artificial light. My hypothesis was that the natural light would be able to make the grass grow better. To do this I purchased pottin soil, Kentucky blue grass, and cups. Then I measured 150ml of potting soil and pored it into the cups and put 10ml of the grass seed into it. Then I watered the soil with 80ml of water. In this experiment I found out that the artificial lights made the grass grow better. The grass under the artificial lights started growing at a faster rate, but both sets of grass ended at about the same measurements. Under the artificial lights my first cup measured 16.5cm, cup two 14.5cm, and finally cup three 15.5cm. Both the natural light made the grass grow under the same height with cup one 15cm, cup tw 13cm, and cup three 11cm.

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Project Number: JLS032

Grade: 6

Title: Primrose Experiment

Abstract: The purpose of my experiment was to find out if you could feed plants different fluids other than tap water and see if they would grow. The first thing I did was to find 3 plants that were the same size and had the same color flowers. Next I fed them each ¼ cup of pop, distilled water, and tap water. Over the last two weeks I fed the plants and watched how they would grow. Plant 1 that was given pop did not grow and produce new flowers. The plant wilted and died. Plant 2 was given distilled water and produced some new flowers but the leaves were some what wilted. Plant 3 was given tap water and it produced new flowers and had green leaves. Now I can tell you that tap water does the best job on your plants.

Project Number: JLS033

Grade: 6

Title: Does age affect taste?

Abstract: Please visit exhibit for student's abstract.

Project Number: JLS034

Grade: 6

Title: Music

Abstract: Please visit exhibit for student's abstract.

Project Number: JLS035

Grade: 6

Title: Spatial Relations

Abstract: Packing is part of most people's everyday routine (packing a lunch, suitcase, book bag, grocery bags, etc). This experiment was intended to learn if one gender can pack an open space better than the other. Eight different people, half men and half women, were asked to pack various items into an empty box and each one of their times were recorded. It was determined that the female gender could pack the box not only faster but more efficient than the male gender.

Project Number: JLS036

Grade: 6

Title: Nature's Materials

Abstract: People typically grow their plants in topsoil. I investigated if plants can grow faster in anything other than soil. I planted five seeds in each material: sand, clay, and soil. The plants were watered daily. All of the plants in the clay sprouted during the four week period. Only one of the plants in the soil grew. This plant grew taller than the average plant in the clay. The plants in the clay only sprouted, but didn't grow. None of the plants in the sand grew. The plants in the soil grew the tallest.

Project Number: JLS037

Grade: 6

Title: Plant Growth

Abstract: The title of my project is plant growth. The purpose for doing this project was because I love to work in the garden and to see if I should start my plants under artificial light or natural sunlight. My hypothesis is that grass will grow better under natural sunlight. I filled the containers with top soil and then planted approximately 30 grass seeds. Watered the plants daily until growth started. I recorded growth each day in the evening. My hypothesis was proven correct in two out of three trials because the plant under natural sunlight grew larger in ten days.

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Project Number: JLS038

Grade: 6

Title: Tooth decay

Abstract: The purpose of my experiment was to explore the risks of drinking too much soda. The Results to the experiment Tooth Decay is that Coke decayed and stained teeth the most and water stained and decayed teeth the least. The conclusion to this experiment is it's wiser to drink water at lunch.

Project Number: JLS040

Grade: 6

Title: The Mold Effect

Abstract: There are many different types of bread purchased by consumers. This experiment would show which type of bread would mold the fastest. Four pieces of four types of bread were used in this test. Each piece of bread was equally sprayed with water and then packaged separately in a ziploc bag. Each piece of bread was monitored for possible mold growth. The potato bread grew the first spore of mold after eleven days. At the conclusion of this experiment, one type of bread never grew mold.

Project Number: JLS041

Grade: 6

Title: Does Practice Increase Jumping Height?

Abstract: Does jumping practice increase one's jumping height? I did this to learn if practicing jumping increased how high you jumped. Five people were tested. I first measured how high they jumped. That was their starting point. Then I had each person jump a certain amount of times Monday through Friday or not at all for four weeks. I had a 50-time jumper, a 25-time jumper, a 10-time jumper, and two non-jumpers. After four weeks I found that the more you practiced jumping, the higher you got over time. The non-jumpers didn't get any higher from their starting pints. The 50-time jumper got 6.5 inches higher. In the future, I would like to find out if they way you jumped also affected how high you get in your jumps

Project Number: JLS042

Grade: 6

Title: What Grows Grass the Tallest

Abstract: People have been saying to me that Gatorade grows grass better than regular water. I was wondering if that was really true. So I decided to test which type of water grew grass the tallest. My types of water were: Propel fitness water, Glaceau vitamin water, and well water. I planted 6 twelve packs with soil and rye grass. I watered 1/3 of the grass with Propel, Glaceau, or well water every day. The tests showed that vitamin water grew the slowest. I wanted to know why the vitamin water came in last, so I performed a second set of tests using just ingredients that were in the vitamin water. It appears that citric acid retards growth the most.

Project Number: JLS043

Grade: 6

Title: The Effects of Sugar with Plants

Abstract: This investigation's purpose is to see if sugar water will effect plants. Five plants were watered with water only. Then sugar water was feed to five different plants. The results were that the plants watered with water only grew to an average of 7.4 cm. The plants watered with sugar water never germinated.

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Project Number: JLS044

Grade: 6

Title: Anticipation and Concentration

Abstract: This experiment was conducted to see if anticipation affected peoples' memory and concentration. The purpose was to help schools understand that telling kids about safety drills in advance can interfere with their concentration in class. Anticipation does affect memory and concentration.

Project Number: JLS045

Grade: 6

Title: A "maze"ing Bean Plants

Abstract: Please visit exhibit for student's abstract.

Project Number: JLS046

Grade: 6

Title: Which Grass Grows Better in Which Dirt?

Abstract: I wanted to know what would make grass grow better. Five different containers were used, each one with equal amounts of soil and four of the five had one different ingredient added. All were given equal amounts of water or Miracle-Gro, at the same time. I predicted the Miracle-Gro container would be the best at growing grass and I was correct. I would be interested in seeing if the Miracle-Gro would help my grass and plants at home this Spring.

Project Number: JLS047

Grade: 6

Title: My Head Hurts! Can You Get Me Something?

Abstract: The purpose of this experiment was to see if Advil and Tylenol worked faster than their generic equivalents and therefore were worth their additional cost. Two generic brands were tested along with the name brand medicines. Each medicine was dissolved in vinegar and each was stirred to simulate movement in stomach acid. Times were recorded and compared. Results showed that there was a few minutes difference among the medicines. In conclusion, there was not a significant difference in the amount of time it took the medication to dissolve. Therefore buying the more expensive product did not assure a better product.

Project Number: JLS048

Grade: 6

Title: Music and Mathematics

Abstract: Please visit exhibit for student's abstract.

Project Number: JLS049

Grade: 6

Title: Proteins: Are You Getting Your Wholesome?

Abstract: It is known that proteins are the building blocks of life because they are the main components in muscle, organs and glands and also perform various functions. As kids we are told to eat protein-rich foods, but we are hardly aware of how much protein is actually present in the foods that we eat. Hence this work was aimed to measure the actual amount of protein in the commonly eaten foods using protein measuring reagent and a spectrophotometer. Cheese and egg had the most protein followed by milk, yoghurt, chicken, beans and shrimp. Apple had the least amount of proteins.

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Project Number: JLS050

Grade: 6

Title: How Smell & Sight Affect Taste

Abstract: Taste is a very important sense for a human being. The intent of my project was to determine how the senses of sight and smell affect the sense of taste. I tested five volunteers to determine if they could identify different foods without using their senses of sight and smell. Though the test results indicated that the removal of these senses had little impact on correctly identifying the tastes, most of the errors occurred on the sour foods. Based on my research, I feel my test results are not what I expected and that further experimentations may produce different results.

Project Number: JLS051

Grade: 6

Title: How to Best Pop Popcorn

Abstract: The purpose of this experiment was to determine the best method of popping popcorn. Each trial was based on only using 150 kernels of popcorn with various heating devices or temperatures. The results were recorded and compared based on the number of kernels that popped and were unpopped. The various ways the popcorn was heated was using: Stove Top (high heat), Stove Top (low heat), Microwave (1min 30sec), Microwave (1min 45sec), and an Air Popper.

Project Number: JLS052

Grade: 6

Title: Which Is Better? Heat vs Cold for Acute Pain

Abstract: I got interested in this topic by seeing football players get injured on TV. I wondered whether the team doctors used heat or cold therapy to heal their pain. There is confusion in the literature about this topic and patients often wonder what to use for their pain. I discussed this with an orthopedic surgeon and established a questionnaire for his patients. 18 patients were enrolled in the study over a two week period. Ages ranged from 12 -70. Injury types included: Fall(n=8), accident(n=2), sports(n=4), other(n=4). 16 patients used initial cold therapy out of which 9 got relief. 7 patients did not get relief and had other treatments. Treatment for acute pain and data analysis from the study will be presented.

Project Number: JLS053

Grade: 6

Title: Which grass will grow the best?

Abstract: Which grass seed would grow best after eight weeks when comparing Play Shady mix, Contractor's mix, and Penn State mix. The process was to plant each type of seed, place under a grow-light, and water every other day. Observe the plants every day, and note any changes. Survey individuals about which grass looks the healthiest and fullest. Play mix was the best, even though Penn State mix was the most expensive.

Project Number: JLS054

Grade: 6

Title: Which Soil Grows Plants the Best?

Abstract: To do this science project, I had to make sure that I knew everything that I would need to know about growing pumpkins before I could get started. I had to plant the seeds in the four types of soil and then water them. I fed the plants two ounces of water every other day. I fed the plants Miracle Grow one time a week. I had to leave the window open for the plants so that they could get sunlight.

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Project Number: JLS055

Grade: 6

Title: What grows spuds the best?

Abstract: Potatoes have a nutritious value to our daily diet. Potatoes have essential nutrients, especially potassium. Potassium helps muscles to become strong. The purposes of my research, to demonstrate the using wood ashes in the soil, grow larger potatoes. Wood ashes contain five to eight percent of potassium. Row A of my research contained wood ashes and Row B did not, soil was the main ingredient. At harvest, the potatoes in Row A that contain wood ashes produce a larger potatoes, than without wood ashes. Using wood ashes help recycle a natural resource.

Project Number: JLS056

Grade: 6

Title: Mold: Light or Darkness

Abstract: The purpose of this investigation was to determine whether bread mold grows better in light or darkness. I placed 20 pieces of bread in separate plastic bags: 10 under 2 lamps and 10 in a completely sealed box. The average number of squares on the graph paper out of 190 squares of the bread in light is 30.45, and in darkness, 89.5. The data supported my hypothesis.

Project Number: JLS057

Grade: 6

Title: How much salt makes an egg float?

Abstract: How much salt makes an egg float? Fill cups with warm and cold water. Put eggs in cups. Remove eggs and add 1 tsp. salt, alternating until an egg floats. Record results. After 10 tsp. added, eggs in warm water sunk slower. After 12 tsp., hard boiled egg in warm water floats. After 15 tsp., raw egg in warm water floats. My hypothesis was that the hard boiled egg would float because it would have air bubbles in it from when it was being cooked. My results supported my hypothesis.

Project Number: JLS058

Grade: 6

Title: How Do Pesticides Effect Micro-organisms?

Abstract: What happens to micro-organisms when they are exposed to pesticides? This experiment started out as a concern with a problem I have with growing tomatoes and carrots. The bugs absolutely love the tomato plants, so we found the foods that bugs resist and try to avoid such as the strong smelling vinegars, garlic, and onion. This is when I thought about the micro-organisms. What happened to them? So I decided to find out what does happen to micro-organisms when they are exposed to pesticides? With that I found out that between the bought pesticides, and the homemade pesticide, there are many (some completely opposite) results. Both ways, the micro-organisms decreasing and increasing have occurred in the experiment. Now I know that pesticides can effect micro-organisms in unpredictable ways.

Project Number: JLS059

Grade: 6

Title: Water vs. Sugar

Abstract: The water vs. sugar experiment is a very unique one. For this experiment, I simply tried to figure out which liquid (regular water or carbonated sugared water) can add more weight to a rock. My hypothesis was that the carbonated sugared water will add more weight to the rock. I am still in the process of doing this experiment. These are the things I will include in my paper. First I will type the hypothesis. In addition, I will type the observations I made before I began the water vs. sugar experiment. Then I will add the observations I made during the experiment. After that, I

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will draw a line graph, showing the weight of the rocks over time. With this, I will add the observations after the water vs. sugar experiment is completed. Finally, I will add the conclusion.

Project Number: JLS061

Grade: 6

Title: Hello? Hang Up or Drive!

Abstract: The purpose of my experiment was to find out if driving while talking on a cell phone disturbs your concentration to a point of reckless driving. To do this I had 3 drivers of different age levels and driving experience use a simulated driving video game while talking on a cell phone. I would like to prove in this experiment that driving while talk on a cell phone does disturb your concentration to a point of reckless driving and that the age and driving experience do play a factor.

Project Number: JLS062

Grade: 6

Title: Music to Your Veins

Abstract: My purpose was to determine that different types of music affect pulse in different ways. I recorded each subjects' pulse, at different intervals, as they listened to slow and fast tempo music. Looking at my data, I found that there were variables I did not consider. For example, pulse can be affected by other things, during the experiment, other than the music. All of my subjects' pulse rates were affected, but not in the way, I expected. Therefore, I was unable to prove my hypothesis, but I can say that different types of music affect people in different ways.

Project Number: JLS063

Grade: 6

Title: Does Color Affect Taste?

Abstract: The purpose of this experiment was to determine if color would affect taste. I tested ten different individuals twelve times to verify my results. They were tested using various food coloring shades of water with different extracts.

Project Number: JLS064

Grade: 6

Title: Preventing Apple Browning

Abstract: I do not like eating apples that have browned after being sliced and I always wondered how you could prevent the browning process. Through my research I found several liquids suggested for maintaining the apples color. I used lemon, lime, and apple juices along with apple cider vinegar and lemon lime soda. I mixed 1/4 juice to 3/4 water except the lemon lime soda. I soaked the apples for sixty seconds and removed them and then measured the browning process for three hours at fifteen minute increments. The lime juice was the best protector with lemon coming in second.

Project Number: JLS065

Grade: 6

Title: Bird Food Preferences

Abstract: Many people enjoy backyard bird feeding. The purpose of this experiment was to determine which type of bird food birds prefer. Three types of bird food were set outside in separate containers. After two weeks, the ounces eaten were recorded. The results came back to show that birds like black sunflower seed the best. They ate the least of the suet, and a few ounces of the mixed wild bird food. Future experiments may determine if birds' preferences are influenced by weather or location.

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Project Number: JLS066

Grade: 6

Title: Bubbles, Bubbles Everywhere

Abstract: The purpose of this project was to determine which liquid soap would make the largest bubble. The soaps that were used in the experiment were: Dish Soap, Laundry Soap, Body Wash, Shampoo, and Hand Soap. There were five trials of each that were measured and compared.

Project Number: JLS067

Grade: 6

Title: A Hamster's House

Abstract: The purpose of my experiment was to see if leaves were absorbent enough to be used as an animal's litter. I collected different leaf specimens to use for my animal's litter. Then I dried them by leaving them on a tin foil covered box lid. Next, I crushed them so that they were very small. Then, I scattered them on the bottom of the cage. There was one animal and I found out that the leaves were not absorbent enough for that animal, because moisture was not absorbed. Also, the leaves did not help the cage smell any better.

Project Number: JLS068

Grade: 6

Title: Breathe With Caution

Abstract: The purpose of this project is to find out if where you live affects how clean the air is. I mailed five Petri dishes to different cities around the country. The dishes were placed outside for one week and mailed back to me for analysis. After I received the samples back, I examined them under a microscope. The dirtiest subject was from Lawrenceville, Georgia, which not only contained debris, but bacteria as well. The most important thing I learned is that more people, factories, and cars make more pollution, and we need to work harder to keep our air clean.

Project Number: JLS069

Grade: 6

Title: What will help plants grow?

Abstract: What will effect plant growth the most, Miracle Grow, tea leaves, or coffee grinds? The purpose of my experiment is to see what will help plants grow. The procedure is to grow four plants in three separate pots, and then to add the Miracle Grow, tea leaves, and coffee grinds in each pot. I recorded the data everyday to see what has changed in the plant growth. The conclusion I made was that Miracle Grow worked the best.

Project Number: JLS070

Grade: 6

Title: How well do disinfectants work?

Abstract: Have you ever wondered how much bacteria you're actually killing when using disinfectants? This experiment is used to prove which disinfectant works the best and kills the most bacteria. In my experiment, I used six different disinfectants to try and kill bacteria produced from lunch meat. As a result, Clorox Bleach and Rubbing Alcohol had the least bacteria colonies.

Project Number: JLS071

Grade: 6

Title: Does Music Affect Our Heart Rate?

Abstract: Please visit exhibit for student's abstract.

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Project Number: JLS072

Grade: 6

Title: Walking Around Or Just Passing By?

Abstract: Please visit exhibit for student's abstract.

Project Number: JLS073

Grade: 6

Title: Play That Funky Music

Abstract: The question was to see if hip-hop and/or classical music affects physical and/or mental tests. The purpose was scores to learn if listening to certain types of music impacts test. 20 subjects 10-11 years of age took a 10 question mental test while listening to classical music. Also, they did push ups for one minute while listening to classical music. The same was conducted with hip-hop music. The results of this experiment were that when taking a mental test and listening to classical music the score was 7.3/10. When listening to hip hop music the score was 7.6/10. The average number of push ups while listening to classical music was 29.3. The average number of pushups while listening to hip-hop music was 34. In conclusion, it is better to listen to hip-hop music while taking a mental or physical test.

Project Number: JLS074

Grade: 6

Title: The effect of light on Plant Growth

Abstract: Please visit exhibit for student's abstract.

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Project Number: JCS001

Grade: 6

Title: A Little Rusty

Abstract: I chose to test which brand of car wax prevents oxidation the best. I chose this because I thought it would be fun and interesting to find out. My hypothesis was that Black Magic brand of car wax would prevent oxidation the best. To test my hypothesis I had to buy the materials that I needed, dunk the car wax coated sheets of iron into salt solution, lay them on a picnic table, and repeat for nine days. In the end I proved my hypothesis correct.

Project Number: JCS002

Grade: 6

Title: Which Drink has the Most Sugar?

Abstract: Childhood obesity is common in America. One of the reasons is drinking fluids with high sugar content. It is a common misconception that juices are better than soda. The sugar content of both were estimated using a Brix hydrometer. Standard sugar solution of different percentages was prepared. This was used as a standard to estimate sugar content of various drinks. It was found that sugar content of juices were higher than sodas. Drinking juices is no better than sodas, water is the best alternative.

Project Number: JCS003

Grade: 6

Title: What's Best? Liquid Soap or Bar Soap?

Abstract: Please visit exhibit for student's abstract.

Project Number: JCS004

Grade: 6

Title: The process from grapes to wine

Abstract: Please visit exhibit for student's abstract.

Project Number: JCS005

Grade: 6

Title: Store Brand vs Melapower

Abstract: I wanted to see if Melapower laundry detergent worked just as well (or better) as store brand detergents, but for a fraction of the price. I used five pieces of white material. I put the same five stains on each piece of material. Each piece of material was washed with a selected laundry detergent and then laid out to air dry. I charted which laundry detergents removed each stain the best. I rated each detergent on a scale of one to five. Melapower does work just as well or better as other laundry detergents.

Project Number: JCS006

Grade: 6

Title: Does Childproof Mean Childproof?

Abstract: The purpose of this project was to determine if children can open childproof caps. I gathered ten bottles of which eight had various types of childproof caps and two had regular caps. Four children of each age (2-6) attempted to open all the bottles. My results showed that two of the childproof bottles were able to be open by more than 20% these children, which fails the requirement of the Consumer Product Safety Commission. Age also made a difference in opening these bottles. Six year olds opened nearly all of the bottles, but the two year olds hardly opened any.

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Project Number: JCS007

Grade: 6

Title: R.F.'s effect on materials

Abstract: I studied radio frequencies (RF) and how seven different materials deflected it. RF abounds in our modern society. For the experiments, I used a RF source, a faraday cage, a frequency counter, and I recorded the RF. With my findings, I can conclude that some of the materials deflected RF. Wool felt had the most tendency to deflect RF. In the future, other materials will have to be tested because this experiment only tested seven materials. I am pleased to find out that a natural fiber (wool) can deflect man-made RF.

Project Number: JCS008

Grade: 6

Title: The Great Paper Debate

Abstract: Please visit exhibit for student's abstract.

Project Number: JCS009

Grade: 6

Title: Wheel-O-Rama

Abstract: The purpose of this experiment was to determine the best wheels to buy based on the distance they traveled. The wheels were put on a skateboard and then sent down a ramp to see which brand of wheels would travel the farthest. The brands of wheels that were used were: Blind, 2X8, Spitfire, Kryptonics, and Element.

Project Number: JCS010

Grade: 6

Title: Safe Toothbrush Storage

Abstract: Please visit exhibit for student's abstract.

Project Number: JCS011

Grade: 6

Title: Stain Remover Efficiency

Abstract: The purpose of this investigation is to determine if one brand of stain remover is more effective than the other. When I did my investigation, I took grape juice and applied 3 different stain removers. Next, I washed them and compared the results. I found out that Oxi-Clean was the most effective in removing the stain. Baking soda came in second and Spray N Wash came in last.

Project Number: JCS012

Grade: 6

Title: Energizer Bunny-Fact or Fiction

Abstract: The purpose of the project was to see which brand of D-cell battery lasts the longest. I used four Eveready "Task Force" flashlights and four brands of batteries: Energizer, Duracell, Eveready, and Super-Energy. The batteries were rotated through the flashlights in a series of timed trials. A multi-tester was used to measure the voltage after each trial. Results were recorded on trial data sheets. The Energizer batteries lasted the longest, followed by Duracell, Eveready, and Super Energy.

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Project Number: JCS013

Grade: 6

Title: Which Stain Remover Works Best?

Abstract: I have trouble knowing what stain remover will work best on stains. In my experiment, I learned which stain remover was most affective on ketchup and mustard stains. I put ketchup and mustard on four pieces of cloth, sprayed the stain remover on the stains, and then washed the cloths in water. What I found out was that Fuller Brush Stain Spray worked the best on mustard and Oxi Clean worked the best on ketchup. If I did this experiment again, I would use laundry detergent in the washing machine and possibly try a different substance as my stain.

Project Number: JCS014

Grade: 6

Title: Flame Retardant Clothes

Abstract: Flame retardant clothes have properties that resist burning. Flame retardant clothes have saved many lives. This project was done to determine which type took the longest time to catch fire. Eight types of clothing with different flame retardants, both natural and manmade chemicals were tested. A flame was applied to the material and the time was recorded when the material ignited. The one hundred percent polyester with no flame retardants added did not catch fire. The one that took the least time was one hundred percent polyester with flame retardants added in it.

Project Number: JCS015

Grade: 6

Title: Inexpensive Detergents

Abstract: Laundry is a daily chore. It requires time, money, and decision-making skills of anyone who engages in it. This work was intended to identify the efficiency of inexpensive liquid laundry detergents. Three detergents ranging in price from approximately two to four dollars were selected from a local grocery store. Ingredients from each label were compared. Pre-soak and washing of stains were done with each detergent. Stains were compared; the mid-priced detergent was most effective. Future work is planned to determine if load quantity affects quality of stain removal.

Project Number: JCS016

Grade: 6

Title: Which Ice Cream Melts the Fastest?

Abstract: To determine which ice cream melts fastest, three different brands of ice cream, Breyer's, Ben and Jerry's, and Edy's, were scooped into bowls and put out to melt. The experiment was over when one bowl of ice cream completely melted, which means there were no more frozen lumps. Pictures were taken and notes were recorded during the experiment. This was done three times. Edy's ice cream was the first bowl of ice cream to melt. This makes sense because of the ingredients that were in the Edy's ice cream.

Project Number: JCS017

Grade: 6

Title: Baking Cookies without Key Ingredients

Abstract: The reason I did this project was because I love to bake. My results were that the cookies made by following the exact recipe turned out to be moist, fluffy and tasted good. The cookies following the recipe exactly, but without the eggs, looked the same but tasted different. Last, the cookies following the recipe exactly, but without the baking soda, they expanded a little, and they tasted different. The last two experiments, those missing ingredients, tasted more like sugar cookies.

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Project Number: JCS018

Grade: 6

Title: Do Substances Purify

Abstract: Please visit exhibit for student's abstract.

Project Number: JCS019

Grade: 6

Title: No Stick!

Abstract: This project compared three brands of cooking spray to determine which was the most effective. Three experiments were used to compare products. Cake mixes were prepared and baked. Eggs were fried using each cooking spray. Fried potatoes were also prepared. Results were compared to determine overall quality of products. The hypothesis, that PAM Original Cooking Spray will work the best, was not supported by the results. The Giant Eagle Brand Cooking Spray was the most effective. Then Crisco original cooking Spray was next. The least effective was PAM Original Cooking Spray. The hypothesis was proven wrong.

Project Number: JCS020

Grade: 6

Title: Clean As A Pin

Abstract: My purpose was to find if the price of commercial cleaners is equal to the products' effectiveness. My procedure is to make homemade cleaners and put ketchup on carpet, spray wax on glass, and a marker on dry wall. Spray cleaners on dry wall, carpet, and glass, then rub twelve times. Repeat with syrup, juice on carpet, ashes and dirt on glass, and pencil and crayon on dry wall. My results are that commercial cleaners worked best on carpet and dry wall. Homemade cleaners worked the best on glass. For my conclusion I got that my hypothesis was wrong.

Project Number: JCS021

Grade: 6

Title: Stuck On You

Abstract: This summer my daily allergy shots were covered with adhesive bandages that fell off in the shower. So, I investigated which adhesive bandage stayed on the longest when wet. For this project, I chose four brands, placed them on a carrot, then soaked it in bath water. I observed and removed each bandage as soon as it began falling off. The number of days each stayed on was recorded. My results showed bandages staying on from only a half day to twenty days over ten trials. I found it interesting that the least expensive brand, Coralite, stayed on the longest.

Project Number: JCS022

Grade: 6

Title: My Environmental Killer.

Abstract: For my experiment I am testing house-hold products on grass. The purpose of this experiment is to show what you should be careful with. All you do is get seven equal sessions of grass. For a while, just water them daily. Then, one day instead of watering each plant, add one item to each. These items should be coffee, milk, Pepsi, vinegar, baking soda (you add a little bit of water to it), dish soap, or Clorox Clean-up. These were just a few items I choose. One of these items will kill the grass. I think it will be the one which has three items in it. This is why I choose this experiment.

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Project Number: JCS023

Grade: 6

Title: Paper-towel Absorption

Abstract: The purpose of this experiment was to determine which brand of paper towel would absorb the most tap water. The brands of paper towels that were tested were: Brawny, Bounty, Premium, Scott, and So-Dri. The results were based on the weight capacity of the paper towels.

Project Number: JCS024

Grade: 6

Title: Stubborn Stains-Carpet Cleaners

Abstract: Stains in carpets can be very hard to get out. This experiment was to see which carpet cleaner cleans certain kinds of stains most effectively. There were three different kinds of stains in the carpet-wine, coffee, and ketchup. Then there were three different kinds of carpet cleaners-Resolve, Blue Magic, and Woolite Oxy Deep. There was an untreated stain for each kind of stain to help compare what kind of effect each carpet cleaner had on each stain. Woolite Oxy Deep ended up taking the wine out completely. For the ketchup and coffee stain all the carpet cleaners worked the same.

Project Number: JCS025

Grade: 6

Title: Survey Says

Abstract: I am conducting an experiment to determine which grade likes, dislikes, or sometimes like their teacher more. The grades consist of 5th, 6th, 7th, and 8th. The reason for this project is that I am curious how students interact with their students. So it would be interesting to see the responses from various students. First I will create a survey. 1. What grade are you in? 5th, 6th, 7th, or 8th. 2. Are you a boy or girl? 3. Do you like your teacher? 4. How old are you? 5. If you like you teacher, why? 6. If you sometimes like your teacher, why? 7. If you do not like your teacher, why? Next, I will pass 40-60 surveys out per grade. After I calculate whether the students like, dislike, or sometimes like their teacher, I will then determine why they chose their answer. To keep myself organized I will retain a lab journal, containing all information I will gain. What I would like to find out is not only how students interact with their teachers, but why they feel the way they do about their teachers.

Project Number: JCS026

Grade: 6

Title: Does Time Affect concentration of Vitamin C?

Abstract: My experiment was to determine which juice maintained the most Vitamin C over a thirteen day period. By adding drops of juice into an indicator solution until it turned clear, I was able to measure the amount of Vitamin C in six juices. The more drops added, the less Vitamin C the juice contained. My hypothesis stated that orange juice would maintain the most. It is a citrus fruit, and the most recognized Vitamin C source. My results showed that tomato juice ranked first, rising only 1 drop in total. Apple juice (concentrated) performed the worst. Orange juice ranked third.

Project Number: JCS027

Grade: 6

Title: Which toothpaste cleans stained teeth the best?

Abstract: I did this experiment because my dad and brother have yellow teeth and they want to use a good whitening toothpaste. The procedures that I have used was that first I would soak the stuff in tea, grape juice, and coffee. Then I would take them out and brush them for about 5 minutes. The better toothpaste was the Crest Extra Whitening.

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Project Number: JCS028

Grade: 6

Title: Kernel Mania

Abstract: The problem was to find out which brand of microwave popcorn pops the most kernels. Four different brands of microwave popcorn were popped and the unpopped kernels for each brand were counted and recorded. The results were that the brand Orville Redenbacher's microwave popcorn has the least amount of unpopped kernels.

Project Number: JCS029

Grade: 6

Title: Soggy O's

Abstract: The purpose of this experiment was to determine which type of milk would make the Cheerios soggy the quickest. There were five types of milk: Whole, Half and Half, 1% Milk, 2% Milk, and Skim. The Cheerios were timed for a total of seven minutes in each of the different types of milk and the results were recorded and compared.

Project Number: JCS030

Grade: 6

Title: Stains be gone

Abstract: The purpose of the experiment is to find out which carpet cleaner removes grape juice the best. The procedures I used: (1) Label each carpet square and bottle 1-4. (2) Pour 1/4 cup grape juice onto each carpet square. (3) Spray 2 sprays of each carpet cleaner onto each corresponding carpet square. (4) Rub each carpet square for 40 seconds. (5) Continue procedure for 2 days. My data on a scale of 1-10, Resolve=9, Spot Shot=7, Folex=5 and Out gets a 2. my conclusion was that Resolved worked the best and Out was the worst.

Project Number: JCS031

Grade: 6

Title: Which relaxer makes hair straighter?

Abstract: Please visit exhibit for student's abstract.

Project Number: JCS032

Grade: 6

Title: Think Before You Drink

Abstract: Please visit exhibit for student's abstract.

Project Number: JCS033

Grade: 6

Title: Melt Down

Abstract: The purpose of this experiment is to see what candy bar won't melt in the car while you are in school. Placing seven different candy bars in the car starting at 8:00 am and leaving them there until 3:00 pm. On the hour, remove one of each candy, observe, feel and check for melting. Record finding. Note temperature outside of the car and inside the car each hour. It took until the fourth hour for the candies to begin melting. Once the temperature outside the car reached 26.11 C all of the candies were inedible except the Milky Way and M&Ms.

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Project Number: JCS034

Grade: 6

Title: Wood it Hold?

Abstract: The purpose of this experiment was to determine which brand of wood glue would sustain the most pressure. The brands of wood glue that were used are: Devecons Epoxy, Gorilla Glue, Titebond Glue, Elmers Wood Glue, and Elmers Ultimate. After the dial rods were glued to a piece of wood, they sat for a period of 24 hours before testing began. Each piece of wood had to sustain an amount of pressure. They were recorded based on when the wood dial rods separated from the wood they were glued to.

Project Number: JCS036A

Grade: 6

Title: Which Brand of Popcorn Pops The Best?

Abstract: Have you ever wanted to find out which brand of popcorn pops the best? I used three different brands of popcorn. I popped three bags of each brand of popcorn for two minutes and thirty seconds. After all the popcorn was gone, I counted the unpopped kernels leftover. The average unpopped kernels leftover are: Pop Secret - 47.6 kernels, Act II- 46.6 kernels, and Orville Redenbacher - 58.6 kernels. I compared all of the averages and Act II had the least amount of unpopped kernels which meant that Act II is the best brand of popcorn to pop. My experiment was to show the best brand of popcorn that popped the best. I only picked out three brands of popcorn because it is a fair amount to test. I picked Pop Secret because I eat that brand most of the time. The other two brands are produced by the same company so I figured that the kernels would be around the same number. My prediction was wrong because Act II had the least amount of kernels when Orville Redenbacher had the most leftover kernels.

Project Number: JCS036B

Grade: 6

Title: C For Yourself

Abstract: My project is to find out what fruits have the most Vitamin C. The four fruits that will be tested for Vitamin C will be oranges, strawberries, grapefruit and lemons. As you could see that the juices came in with oranges being first with the most vitamin C, grapefruit Second, strawberries third and lemons last with the least amount

Project Number: JCS037

Grade: 6

Title: On Your Mark, Get Set, Burn!

Abstract: Which of my favorite colored candles will burn the slowest? What candle will give me more for my money? I drew a line 2 cm from the top of each candle. I lit a candle and timed it from when it started to burn till the line disappeared. Then I recorded the time. My procedure was the same for all of the candles. The results of my experiment were that the blue candle burned the slowest both times. With an average burning time of 4 minutes and 21 seconds. My conclusion was the blue candle burned the slowest both times.

Project Number: JCS038

Grade: 6

Title: Who has the endurance?

Abstract: Please visit exhibit for student's abstract.

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Project Number: JCS039

Grade: 6

Title: Here's A Clue About Shampoo

Abstract: I compared the effectiveness of twelve body building shampoos by conducting numerous tests. I identified the pH using pH paper and determined the viscosity by timing a marble falling through 100 milliliters of shampoo. I created foam by shaking 25 milliliters of shampoo solution and recorded the amount of foam remaining for 30 minutes. To test the shampoo's ability to remove dirt, I added one drop of ink, created foam again, and observed how much foam contained ink. My goal was to determine if the less expensive shampoos were as effective as the more expensive, professional shampoos.

Project Number: JCS040

Grade: 6

Title: Which Popcorn Pops Best?

Abstract: The purpose of this experiment was to find out which popcorn brand would result in having the most popcorn popped and least amount of kernels unpopped. The brands that were tested were: Act II, ValuTime, Orville Redenbacher, Pop Secret, and Pop Weaver. This was to determine which brand offered the best product.

Project Number: JCS041

Grade: 6

Title: Flaming Fragrances

Abstract: The project that I did was which brand of candle burns the fastest. I did this because we always have candles at my house and some were burning faster than others. The family dollar candle is the candle that would burn the fastest because it was the cheapest. Some of the candles wouldn't burn all the way to the wide wasted wax would be left behind. I blew out the candles every 2 hours according to manufactures instructions. I also found that for the most part the candles that were lower price burned the fastest.

Project Number: JCS042

Grade: 6

Title: Do Your Teeth Need Whitened?

Abstract: I chose to do this project because advertisements rave about the best ways and products to whiten teeth. I wondered which one would work the fastest. To do my experiment, my four test subjects used a different brand of teeth whitening product for two weeks. I took before, middle, and after photos. The Crest Extra Whitening Toothpaste worked the fastest.

Project Number: JCS043

Grade: 6

Title: Calorie "Encounter"

Abstract: Please visit exhibit for student's abstract.

Project Number: JCS044

Grade: 6

Title: Will The Stain Be Removed

Abstract: Please visit exhibit for student's abstract.

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Project Number: JCS045

Grade: 6

Title: Dissolvable Determination

Abstract: I did this project because my family and I take a lot of pills because some of us have asthma, diabetes or we just have health problems.

Project Number: JCS046

Grade: 6

Title: Brand or Generic?

Abstract: Everyone uses some type of household cleaner. The intention of this experiment was to learn what non abrasive cleaners worked the best. I used a brand, a brand with bleach and generic cleaners. Three types of stains were put onto four different types of tile. The percentage of stains that were taken off was recorded. It was determined that the brand name without bleach cleaned most of the stains on the different tiles. Future work is planned to determine if brand without bleach works more effectively on a certain type of tile.

Project Number: JCS047

Grade: 6

Title: Which Popcorn Pops the Most?

Abstract: The purpose was to determine if one bag of popcorn pops more than the other brands. One bag of popcorn was placed into the microwave and popped for 3 minutes and 35 seconds. Each popped and unpopped kernel was counted and recorded. The percentage of kernels popped was calculated. Of Orville Redenbacher, Popsecret, Act II, and Nature's Best, the highest percentages were Nature's Best and Act II.

Project Number: JCS048

Grade: 6

Title: Does Caffeine Affect Plant Growth?

Abstract: Please visit exhibit for student's abstract.

Project Number: JCS049

Grade: 6

Title: Don't Bug Me

Abstract: The purpose of my project is to see what kills bugs faster, for when people go shopping. I hypothesize that Raid will work. My procedure was I used the three bug sprays on 3 groups of 15 ants. My results are, in trial 1 Raid killed the bugs in 140 seconds, Sevin was 147 seconds and Prevent was 170 seconds. In trial 2 Raid was 139 seconds, Prevent was 150 seconds, and Sevin was 165 seconds. I have come to conclusion that Raid is the best. Also Raid bug spray would help society because people would save money on products.

Project Number: JCS050

Grade: 6

Title: Hard As Nails

Abstract: I wanted to learn what brand of nail polish resisted chipping the most. I chose this project because I like to paint my nails and I know I could learn something from my results. Artificial nails were painted with four different brands of nail polish. The nails were put into dish water and timed. A series of trials indicated that L'Oreal Paris resisted chipping the most.

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Project Number: JCS051

Grade: 6

Title: Penny Solutions

Abstract: The purpose of the experiment was to find the best solution to make pennies shine by removing the copper oxide. Pennies from 1963-1982 were chosen to make sure that they all are made of the same materials. I used 14 pennies to allow 2 pennies to be placed in each of the seven solutions. A) 14 180 ml glass containers were arranged in pairs of two. B) 60 ml of lemon juice, 30 ml of baking soda combined with 30 ml of water, 60 ml of ketchup, 15 ml of salt combined with 45 ml water, 15 ml of salt combined with 45 ml of vinegar, 60 ml of vinegar, 60 ml of water c) Each penny was placed in the solutions and allowed to set 24 hours. The pennies were removed and rinsed in 500 ml of water and placed back in the original container d. Observations were recorded.

Project Number: JCS052

Grade: 6

Title: Faster the Relief the Better

Abstract: The purpose of this project is to find out which product I can get faster relief from. The procedure I used was: Fill container with 180 ml lemon juice. Drop antacid tablet into container. Start stopwatch. Stop stopwatch when tablet is dissolved. Record time. Repeat 5 times. Do same with hot and cold water. Data was times from different trials and the comparisons of them. In conclusion, my hypothesis was denied. The tablet dissolved fastest in hot water, not lemon juice as I thought.