

Ex #	Project Title	Name(s)	Age(s)	Gender	Gr.	Division	Category	Project Summary	Lang
7	Magnets Make Sense	Yin, Kevin Zhang, Jason	9 9	Male Male	4	Earth and Environmental Science	Elementary		en
10	Which Water?	Gill, Zoe Soper, Gemma	9 11	Female Female	4 5	Earth and Environmental Science	Elementary		en
16	Our Plastic Oceans; what typ of plastic is best for the envirmnt	Erickson, Lucy	10	Female	5	Earth and Environmental Science	Elementary	I am testing what type of plastic is best for the envirmnt. I am puting ground up plastic in a cup with 300mL of water and one cup of plastic.I will leave it in the cup fore to weeks and then take it out. put it back in the cup and see the difference.	en
17	Renewable Energy	Caso-Rohland, Eva Nashmi, Noor	10 10	Female Female	5	Earth and Environmental Science	Elementary		en
19	Hot Ice	Guenette, Devlin Tam, Jacob	10 10	Male Male	5	Earth and Environmental Science	Elementary	Hot ice is made of the same ingredients as that of a mini-volcano. It uses sodrium acetate, which is the salt that is in acetic acid. The chemical reaction that happens in hot ice is similar to the reaction that happens in a vinegar and baking soda volcano. But instead of the chemical reaction (being one like a baking soda vinegar volcano), it makes a crystal-like ice reaction because of the hot water. When the solution (baking soda and vinegar) is cooled after slow cooking, the solution becomes unstable, releasing the sodium acetate molecules, which triggers the heat	en
41	Burning Bright	Ziegenhagel, Seth	11	Male	5	Earth and Environmental Science	Elementary	This project was about trying different types of tinder and wood to find the combination that would start a fire quickly and keep it going long enough to add wood and make a fire to stay warm in a survival situation. It considered only natural sources of tinder and woods found on Vancouver Island.	en
45	Hot Compost	Boychuk, Evan Fieldhouse, Tristan	10 10	Male Male	5	Earth and Environmental Science	Elementary		en
2	Coding with Scratch	Chen, Anthony	9	Male	4	Engineering and Computer Sciences	Elementary	This project is a computer game designed and created by the student using the software named Scratch.	en
4	Got Dark Matter?	Herle, Zachary	10	Male	5	Engineering and Computer Sciences	Elementary		en
6	A Secret in a Picture	Pan, Anthony	9	Male	4	Engineering and Computer Sciences	Elementary	I have a interest in ciphers, spending lots of time working with them. But as I know, there is no unbreakable cipher. Instead, most people use unsuspecting ways of sending messages. Years ago before MCs (Mainframe Computers), secret agents would write with invisible ink to send secrets to each other, so I decided to create a digital one with pictures.	en
9	Reading gadget	MacNeill, Sadie	9	Female	4	Engineering and Computer Sciences	Elementary	This reading gadget is helpful in a few ways. It's a combination of a bookmark and a booklight. It also includes a slider that can mark the word that you left off on. To make the light shine on the page, it has a bendy neck at the top, and a clip at the bottom to fit on the back of the book. The clip is very thin, so it can fold back to a bookmark. The bookmark itself, has a nice colourful pattern. It would help me as well when I'd use it.	en
12	Roof Cleaning	Konorova, Veronica	9	Female	4	Engineering and Computer Sciences	Elementary		en
38	Bridge Strength	Maycock, Aaron McIlmoyle, Nolan	11 10	Male Male	5	Engineering and Computer Sciences	Elementary		en
74	do electronics damage kids brains	Ibrahim, Alaa	10	Female	5	Engineering and Computer Sciences	Elementary	My science project is about how electronics damage your brain. In my project I have researched about how electronics damage your brain although they can be useful (like listening and playing music makes you much healthier, happier and smarter). I gave some ideas on how to prevent using electronics, what it can cause and what to do instead. My goal is to spread knowledge about how a blue light (from a devise) can cause a lot of harm to your brain and that the effect grows slowly slowly and can get very sever when you grow un	en

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76	How Does Weight Affect the Flight of Paper Airplanes?	Nisbet, Nate Tobin, Joseph	9 10	Male Male	4	Engineering and Computer Sciences	Elementary		en
1	Does Washing Your Hands Really Work?	Davison, Rory Williamson, Henry	10 9	Male Male	4	Health Sciences	Elementary		en
11	Do Essential Oils Help You Sleep?	Kent, Eliza Salina, Mya	10 10	Female Female	4	Health Sciences	Elementary		en
18	Do Electronics Drain Your Brain?	Dupuis, Remi	11	Female	5	Health Sciences	Elementary	My hypothesis: If students are distracted while doing school work then their grades will be affected negatively. I'm doing an experiment on the negative affects of distractions on school work with kids form the ages 9 to 11. I'm testing them on reading comprehension and in each test there will either be no distractions, a few random distractions (random photos and messages appearing on a screen) or a constant distraction (a movie). Testing what brightness of light puts more strain on your eyes when you are looking at a screen. Test subjects played Mario Kart under six different light settings for one minute each. The number of blinks were counted to see how light affected their eyes.	en
42	In the Blink of an Eye	Patstone, Matthew	11	Male	5	Health Sciences	Elementary	Matias tested which fabric, used for clothing, was the most fire resistant. He was looking to see what fabric would be the safest around camp fires, open flames or a house fire. He tested both man-made and natural (plant and animal fibres) fabrics. He cut all the fabric to the same size and then tested how long it took to melt/burn (catch on fire) at 2 cm from the open flame. The ones that did not catch on fire or melt in 10 minutes, he placed into an open flame for 1 minute. From this he determined the safest fabrics.	en
43	Fire Fighter Fabrics	Porter, Matias	11	Male	5	Health Sciences	Elementary	“What Essential Oil Is More Effective?” Is about to see through science experiment is the Essential oils really kill bacteria and discover which one is more effective.	en
70	What Essential Oil Is More Effective?	Reyes, Clarissa	11	Female	5	Health Sciences	Elementary	Olivia's project is about whitening her teeth with natural substances. She wanted to know which substance whitens teeth most effectively with her condition called Enamel Hypoplasia. The substances she used: banana peels and baking soda with lemon. Enamel Hypoplasia is a disorder that disrupts the calcification of the enamel on the teeth so they come up without enamel and discolored. She did the experiment every night for 2 minutes with each substance for a week. She is planning on doing it for another 2 weeks before the UVic science fair to see if 2 weeks gives better results.	en
72	Natural Whitening with Nothing Frightening	Polisi, Olivia	10	Female	5	Health Sciences	Elementary	This project is an experiment to test whether chestnuts deter spiders. There were 4 different tests conducted before reaching a conclusion.	en
8	Kitty Catnip	Macleane, Cadence Wallis, Grace	10 9	Female Female	4	Life Sciences	Elementary	This experiment included 2 male and 2 female guinea pigs and 2 female dogs. The point for this was to find out whether female or male guinea pigs learn faster than each other and how they both compare to dogs.	en
14	Nuts for Arachnids	Rathburn, Olivia	11	Female	5	Life Sciences	Elementary	This project examines the conditions under which water birds will take shelter in Pender Island's Hope Bay estuary in the winter. Measurements of temperature and wind direction as well as the Beaufort Scale were recorded along with number and species of different birds present in different zones of the estuary. The study found that more birds were present when the temperature was below zero compared to when the temperature was above zero.	en
15	Finding The Right Treat	Mackey, Justine Morphet, Elizabeth	10 11	Female Female	5	Life Sciences	Elementary	Wholly Smokes is an experiment to determine which detergents remove smoke damage better from both natural material and synthetic material. I used three natural cleaners and three chemical cleaners. I chose this experiment because my house caught fire in the fall.	en
40	Hope Bay Bird Sanctuary	Croft, Nicholas	10	Male	5	Life Sciences	Elementary		en
44	Wholly Smokes	Friebe, Malachi	11	Male	5	Life Sciences	Elementary		en
48	Recycled + Water = Pumpkin	Abdullah, Zakariya Turner, Reid	10 11	Male Male	5	Life Sciences	Elementary		en

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51	Arbutus Trees	Bieber, Audrey Shehzad, Ailiyah	10 10	Female Female	5	Life Sciences	Elementary		en
75	Memory Game	Olcen, Joss Waller, Stella	10 10	Female Female	5	Life Sciences	Elementary		en
78	Wi Fi's Effect on Plant Growth	Saibish, Haimavathy	10	Female	5	Life Sciences	Elementary	I was interested to see how plants react to WiFi. My experiment is to test if exposure to WiFi has a negative effect on plant growth. In my experiment I will be testing the effect of WiFi on growth of radishes, green peas and tomatoes. I think we need to know the effects of these environmental changes on their growth and germination because the plants cannot change their location. Since WiFi has many concerns associated after long term exposure and I would also like to determine if WiFi has a negative effect on human health in the future. The purpose of my study is to help explain, visualize and simulate two-dimensional (2D) and three-dimensional (3D) geometries, and to understand patterns that extend into the fourth dimension and beyond. I start by defining the dimensions. Then I explore shapes in different dimensions. Next I discuss the relationships between the platonic solids and regular shapes in increasing dimensions, by describing cross-sections, duals and Petrie polygons. Finally, I explore patterns in higher-dimensional geometries and I look at possible ways that higher dimensional geometries can have practical applications to our real world.	en
3	Dimensions and Geometry	Hellner-Mestelman, Nathan	10	Male	5	Physical and Mathematical Sciences	Elementary		en
13	Hey water droplet, how tensed are you?	Katireddy, Saanvi Reddy	10	Female	4	Physical and Mathematical Sciences	Elementary	I always wanted to know why water droplet is in the shape of circle. This made me research and I learnt about surface tension. Then it occurred to me if we mix water with other things what will happen to the water droplets would it be in the same shape or would it change.	en
39	Rocket Science	Fehr, Timothy	10	Male	5	Physical and Mathematical Sciences	Elementary	Which type of rocket fuel will make a bottle rocket go the furthest? An experiment to learn which acid, when combined with a base, will cause the rocket to travel the furthest distance.	en
46	Occulation and its application in astronomy	Neufeld, Dorian	10	Male	5	Physical and Mathematical Sciences	Elementary	Occultation occurs when a object passes in between the viewer and a object that produces light. In astronomy the change in light is used to make observations about asteroids and exo-planets. By measuring how the light dims when an object passes in front of a star the observer can determine characteristics of the object. My study project will explain occultation, its use in astronomy, and demonstrate how this happens by partially blocking a beam of light from a flashlight.	en
47	The Effect of Air Pressure on Basketball Bounce	van Bakel, Ben	10	Male	5	Physical and Mathematical Sciences	Elementary	A basketball is designed to bounce continuously and consistently throughout a basketball game. This purpose of this project is to see how a change in internal air pressure affects the bounce height of a basketball.	en
49	The Jastrow Illusion	Teschke, Cohen Teschke, Liam	9 11	Male Male	4 5	Physical and Mathematical Sciences	Elementary	This purpose of this project is to answer the question- Is the Curve of the Shape Responsible for this Optical Illusion? The aim of this project is to explore whether the curve of the pieces combine with the differing lengths creates the illusion or if it is just the differing lengths.	en
50	Battery Challenge	Tait, Rachel	10	Female	5	Physical and Mathematical Sciences	Elementary	For my science fair project, I am studying about batteries. I would like to see if batteries last longer based on the different temperatures in which they are being used. I hope the results will demonstrate ways that batteries can be used in the future to conserve power and save money.	en
73	Hot Ice, Ice Baby	Taylor, Frances Wong, Taylor	10 11	Female Female	5 5	Physical and Mathematical Sciences	Elementary		en
77	The Organic Battery	Yan, Jayden	9	Male	4	Physical and Mathematical Sciences	Elementary	A battery is a device that is used to power electronics and other electrical devices. Can a potato produce an electrical current to light up a LED bulb? In my experiment I had to use 6 potatoes to generate enough electrical voltage to light up a LED bulb.	en

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79	Sweet Science	Cooper, Nadia Roberts, Nuala	10 10	Female Female	4	Physical and Mathematical Sciences	Elementary	We tried to find out which sugars would grow sugar crystals and how much sugar you would need. We used white granulated, white organic, powdered sugar, demerara, golden yellow, and coconut. We did 2 batches; and grew one batch for 1 week and used 1 cup sugar, 1/2 cup water per crystal, and did the other batch for 2 weeks and grew it using 1 1/2 cups sugar.	en

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55	My Mom Tried To Eat My Science Experiment	Rolfe, Finley	11	Male	6	Biotechnology	Intermediate	Summary The goal of this project was to grow carrots in different fertilizers and to measure the stalk and plant growth and also compare the final weight of the carrot. Based on my research into plant growth I selected the fertilizers: potash, blood meal, bone meal, a balanced amount and one without any fertilizer. I will use a grow light and will not be relying on rainwater for the sake of controlling the experiment.	en
20	Archaeopteryx; 150 Million Years Ago	Green, Victoria	12	Female	6	Earth and Environmental Science	Intermediate	For my Human-Centred Design STEM Expo project, I have chosen to research animal adaptations as a result of evolution - the process of how a certain species evolved into another species. I investigated the Archaeopteryx, a now extinct creature from 150 million years ago, that showed the first bird-like traits at the time of the dinosaurs during the late Jurassic Period. To accomplish this, I followed the Human-Centred Design Process, ultimately creating designs to communicate my findings and share them with the world.	en
24	Urban Turbine	Eiley, Sophia Nisbet, Ava	12 12	Female Female	6	Earth and Environmental Science	Intermediate	Our project is about turbines. Usually they are big bulky and can not be placed in urban areas without disturbing the urban environment. We designed three different models that would be examples of what our solution to this is.	en
31	Super Charged	Newnham-Boyd, Keegan Vermette, Brayden	11 12	Male Male	6	Earth and Environmental Science	Intermediate	This project was designed to test what type of windmill blade is best at generating electricity and to determine why. We created four different windmill blade designs and mounted them on a windmill we designed and built. Next, we tested the amount of electricity being generated with a digital multimeter. Our results represent the average amount of electricity produced by each blade. We were surprised by our results as we had predicted a different design would be more effective.	en
33	Hunting for Darkness	Goertz, Isla Stafford, Fionuala	12 11	Female Female	6	Earth and Environmental Science	Intermediate	Our project is on Light pollution. We tried to find out how Pender Island is affected by light pollution. We thought that the people of Pender island would not know most of the problems of light pollution. We found out that they knew nine out of ten of the biggest light pollution problems that we researched. To get that information we tested 12 locations on north Pender Island using our data collection sheets and the Bortle scale, we also gave 12 people surveys who live by each testing location to see how much they are affected by light pollution.	en
35	Clever By Nature	Boyd, Meredith	12	Female	6	Earth and Environmental Science	Intermediate	Clever by nature is a study of biomimicry. Biomimicry is a study of human innovation inspired by natural life. In my study I learned what biomimicry is, how it is useful, how scientists learn more from nature every day and how lots of efficient innovations that are around us today are inspired by nature. I discovered that a lot of people don't know what biomimicry is (I didn't before I started my study) which is to bad because it is a really cool thing. One of the most important things I did was educate people about what biomimicry is.	en
64	Plantes et Liquides	Godin, Fiona	11	Female	6	Earth and Environmental Science	Intermediate	Dans mon projet j'ai fait un expertement pour trouver quel liquide est meilleur pour arroser les haricots. J'ai utilisé l'eau, café et l'alcool à friction (corrected GG). J'ai planté neuf grains trois pour chaque liquide. Seulement une plante à pousser c'était un que j'ai arrosé avec l'eau. Dans ma conclusion j'ai dit que l'eau est meilleure pour arroser les plantes.	fr
69	Le colorant	Côté, Abigail Fudge, Lily	11 11	Female Female	6	Earth and Environmental Science	Intermediate	Nous avons fait une expérience avec du colorant. Nous voulions savoir quel matériau absorberait le plus de colorant. Nous avons utilisé les matériaux suivants: le coton, la laine, le papier, le feutre, le nylon élastique et du papier senteur, et du colorant alimentaire. On pensait que la laine absorberait le plus de colorant, mais nos résultats ont démontré que notre hypothèse était fausse. C'est le coton qui a absorbé le colorant le plus.	fr
81	La connectivite des boissons cafeinees energetiques	Kelsey Ferguson Martin, Audrey	12 12	Female Female	7	Earth and Environmental Science	Intermediate	This experiment looks into the connectivity level of different caffeinated energy drinks using a battery, cooper wires and different energy drinks such as Monster, RedBull, etc.	fr en

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96	Intriguing Indigo	Rempel, Jessie	12	Female	7	Earth and Environmental Science	Intermediate	I tried to find out witch kind of fabric is the most colour fast and vibrant using indigo dye. First I made a starter solution so the indigotin (indigo) would become water soluble (lucoindigotin) and then I added it to the dye vat and dipped my three fabrics in cotton,silk and wool in the end i found out that the cotton did the best then the wool and last the silk.	en
97	Swimming in Acid; Possible Solutions for Ocean Acidification	Erickson, Anna	12	Female	7	Earth and Environmental Science	Intermediate	After reading about an experiment conducted by a man named Danny Harvey proposing to pour 4 billion tons of limestone into the ocean to help with ocean acidification, I wondered if other items could also be tested to add into the ocean to reduce the pH of 400mL of ocean water?	en
110	Vitamin Enriched Vitamins	Fleming, Annika	12	Female	7	Earth and Environmental Science	Intermediate	In my project I tried to see if vitamins would help plants grow. I planted 60 shelling peas and gave 12 plants vitamin A, 12 plants vitamin C, 12 plants vitamin D, I gave 12 plants vitamin E and 12 plants only water. I put them all by a big sunny glass door. I crushed up vitamin tablets and mixed them in with water then I watered each group of peas with different types of vitamin water I discovered that the plants only given water grew taller than the ones with vitamins.	en
111	Forever Straws	Kelly, Madeleine	12	Female	7	Earth and Environmental Science	Intermediate	How to cemically degrade straws using 10 house found chemicals. The straws are cut to 5 cm and weighd before and after.	en
112	I'm Dreaming Of A White Christmas	Tinis, Katie	12	Female	7	Earth and Environmental Science	Intermediate	I'm trying to find a way, using past weather data, to see if I can predict a white Christmas. I have made a model to represent that data all in one place. I only collected data from Victoria BC using the same website for all the data. In my calibrations, the data I collected privately showed that that long term weather station had reliable data so I could use it.	en
114	Nettoie Ton Gâchis : Enlever l'huile de l'eau	Schuckel-Bailey, Oscar	13	Male	7	Earth and Environmental Science	Intermediate	Dans mon expérience j'ai enlevé l'huile de l'eau utilisant les interventions différentes (la mousse de tourbe de sphaigne, le pain, le boom sorbent, pas d'intervention (biodégradation naturel)) pour decouvrir l'intervention qu'aurait absorber la plus d'huile.	fr
30	Wave of the Future: Underwater Wireless Communication Technology	Hinton, Matthew	12	Male	6	Engineering and Computer Sciences	Intermediate	Ma question etait "Quelle est la meilleure solution pour éliminer l'huile de l'eau?" Cette expérience peut fournir indication de relevance comme le problème des marées noires.	en
32	Écofrappé	Fawkes, Tori	12	Female	6	Engineering and Computer Sciences	Intermediate	I built and tested devices for underwater wireless communication. One using radio waves at 72MHz frequency. A transmitter and receiver (hydrophone) for testing acoustic wave transmissions, and an Optical system with a photo diode receiver and LED array light transmitter. These three systems are examples of how underwater wireless communication works using the three different technologies in use today. I tested these three ways of communicating by comparing how they worked in fresh water vs. salt water (ocean). My systems worked successfully, giving predicable results. I investigated why salt water inhibits wave propagation and how acoustic and EM waves differ.	fr
36	Medi Robot	Kuo, Alexis	12	Female	6	Engineering and Computer Sciences	Intermediate	Jé voulais faire un lait frappe avec l'électricité de mon vélo. Pour faire ça je devais utiliser un entraîneur de vélo pour que mon vélo ne bouge pas. J'ai aussi utilisé un générateur d'électricité de 3 watts, pour faire l'électricité. J'ai attaché le générateur d'électricité à la pile car je devais garder l'électricité quelque part. Un onduleur change courant continu a courant alternatif. La pile était attachée à un onduleur car le générateur d'électricité fait courant continu et le mixeur que j'ai utilisé veux courant alternatif. La dernière chose que j'ai utilisé c'est le mixeur pour mixer le lait frappe.	en

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52	Blocking Wifi	Dubé, Jack Jay Li (absent)	11	Male	6	Engineering and Computer Sciences	Intermediate	We scrolled down a Idea list and we looked at a experiment that made us talk about WiFi and we knew nothing about WiFi and we both disagreed on it. After we got some background info over the Christmas brake we both started to come up with our question which was What Materials Block WiFi. That fit our hypothesis If we put various materials on a router, then the WiFi signal strength will be the reduced depending on the material	en
53	Graphite Showdown	Ellis-Gray, Sebastian	11	Male	6	Engineering and Computer Sciences	Intermediate	Over the brake we also worked on some background research which helped us when we were doing our experiments Our experiment objective was to explore which eraser would erase the pencil drawn graph most effectively and why. We have taken multiple different types of erasers and have tested the different erasability. We have also taken different materials to see if they can erase any better than the actual erasers.	en
58	Peltier Tiles - A Source of Energy	Fuller, Kaden Hann, Alexander	11 11	Male Male	6	Engineering and Computer Sciences	Intermediate	We are testing how much energy the Peltier tile will generate and if the Peltier which place the Peltier tile would work better on the human body. The reason why we are only showing the results from the back of the neck and the forehead is that we have narrowed it down to use those two. The other parts of the body would not work as well because other parts that may get hotter on the tile would heat up on both sides and there needs to be a cold side for the Peltier tile to work	en
59	Capturing the wind (Windtorch)	Attwell, Jonathan	11	Male	6	Engineering and Computer Sciences	Intermediate	A windssock transformed into an electrical generator to power a light.	en
61	DSP ROV	Hissen, Patrick	11	Male	6	Engineering and Computer Sciences	Intermediate	I have invented a robotic deep sea mining duo looking fore valuable rocks.	en
62	Doggie Wheels	McLeish-Shaw, Abby	11	Female	6	Engineering and Computer Sciences	Intermediate	I built a wheelchair for my dog out of PVC pipe because she has spinal stenosis. Her spinal column is fused so the messages from her brain don't get to her back legs which makes them basically paralyzed. I tested to see how far she would move with the wheelchair and without the wheelchair. My hypothesis was proven correct because I said that she would move farther with the wheelchair than without the wheelchair. With the wheelchair she can now play outside.	en
85	Effets des temperatures froides sur le voltage des batteries.	BOUALLOUCHE, ADAM	12	Male	7	Engineering and Computer Sciences	Intermediate	Fondamentalement, ce projet parle des effets de températures froides sur le voltage des batteries. J'avais 3 températures que j'ai utilisé pour mon projet. La température ambiante, température glacée (0°C) et température très basse (-78°C). Ce projet va déterminer si la glace peut augmenter ou diminuer le voltage de batterie.	fr
92	Innovative and Integrated Design for Efficient Solar Panels	Mukherjee, Prithviraj	12	Male	7	Engineering and Computer Sciences	Intermediate	This project introduces the innovative design concept of a sunlight reflector that increases the efficiency of solar panel. This concept can be integrated in the town or city planning to optimize the performance of solar panels. Benefits This design concept can help to produce more electricity from solar panels and to build more net-zero buildings. Design and Construction A model house is built and then solar panels are attached on the roof. A mirror/reflector is designed to reflect the sunlight on solar panels. This increases the efficiency of solar panels.	en
25	How do you like your cupcakes	Dupuis, Brianne	12	Female	6	Health Sciences	Intermediate	I tested what liquid would affect the height, colour and fluffiness the most in the cupcakes. My results were that milk cupcakes were the tallest and their was not one for colour out of milk almond milk and water.	en

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27	Filtering Soapy Water	Liao-Briere, Soie Tsepenyuk, Sophia	11 11	Female Female	6	Health Sciences	Intermediate	Our project is about cleaning water. We decided that the best way to do this would be to use a filter. We decided to go with the modern technology and use Carbon Nanotube Ink filters. First we tried making Carbon Nanotube Ink in home environments but it was very hard. We then bought manufactured Carbon Nanotube Ink and used that instead for our experiments. We soaked and dried coffee filters and pieces of cotton in series of experiments. We thought, well how do we know the water is clean? So we found a homemade method to use.	en
34	Does Medicine Grow on Trees?	Dunn-Krahn, Sebastian	12	Male	6	Health Sciences	Intermediate	Plants and lichens have been used for medicinal purposes all around the world for thousands of years. For example, Pacific Northwest First Peoples use many plants and lichens that live on Vancouver Island. In this study, the aim was to see if there is a correlation between the usage of these plants and lichens and their antibiotic nature. Using an Iliad Project Kit, over 20 plant and lichen samples harvested around the Cadboro Bay area were tested against Escherichia coli BI 21(DE3).	en
37	The 5 Second Rule	Edgington, Jude Hurschler, Luka	11 11	Male Male	6	Health Sciences	Intermediate	We are testing the 5 second rule by dropping gummies on the ground to prove that the 5 second rule doesn't exist.	en
65	Screens & Sleep	Delichte, Anika	11	Female	6	Health Sciences	Intermediate	I wanted to see how screens affect your sleep. For one week I didn't go on my phone and tracked my sleep using the SleepTime app, for the second week I did the same things but the difference was that I had used my phone. I also tracked my mood as well as energy level.	en
66	Rotten Teeth Dents Pourri	Abigail Avison Briar Gotro	12 11	Female Female	6	Health Sciences	Intermediate	Notre question est comment soda affect vos dents. Notre hypothèse été que Coke ou Mt. Dew va avoir le plus mauvaise affect. Pour notre l'expérience ont a pris les oeufs et mis dans les different type de soda, un diet soda et d'eau. Ont laisser pour 24 heures et on a pris des liquids et rincer avec du l'eau sans frotter. Puis nous avons brosser avec du dentifrice et une brosse a dents pour 1 minute puis rincer encore. On a trouver que coke et plus mauvaise pour tes dents.	fr
84	Neural Networks For Cancer Diagnosis	Van Raamsdonk, Raegan	13	Male	7	Health Sciences	Intermediate	This project is an innovative way to train a neural network for Cancer Diagnosis. The accuracy achieved is comparable to the best neural networks that do this.	en
88	To see or to hear	Lobmeier, Louisa	12	Female	7	Health Sciences	Intermediate	In this project, the information being gathered was if it was harder to be deaf or to be blind. I did this by giving participants a blind fold or ear muffs. I found that it was harder to be blind.	en
89	Hope For Soap	Saenko, Sabrina	12	Female	7	Health Sciences	Intermediate	This experiment is comparing factory soap, against eco-friendly factory soap, and eco-friendly factory soap against each other using several different criteria. The criteria that the soaps would have needed to meet were using eco-friendly ingredients, removes most bacteria, leaves little to no grease, moisturizes hands, is cost efficient, easy to access, and washes off efficiently. Once all testing had been complete, the eco-friendly factory soap had met most of the criteria (6/7), then homemade soap (5/7) and finally factory soap (4/7).	en
91	Oil of Oregano: Nature's Germ Fighter	Smith, Kate	12	Female	7	Health Sciences	Intermediate	This science fair project is testing to see which tincture fights bacteria most effectively: bee propolis, echinacea, "Deep Immune" or oil of oregano. There is a control with no tincture. Bacteria is grown on 5 petri dishes with nutritional agar. Then, each petri dish is given one drop of the tincture in the centre of the petri dish. Each is compared to the control to see which petri dish has the lowest bacteria count. Health benefits of each tincture are further discussed as an application.	en
22	There's a new Serif in own!	Corwin, Naomi	11	Female	6	Life Sciences	Intermediate	My project was an experiment, investigating whether humans stumble and stop less with a serif font or with a sans serif font. I found out that my participants made less mistakes with a serif font, meaning that a serif font is easier to read, because of the lines on the letters.	en

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26	What's the secret ingredient?	Zebrowski, Bianca	11	Female	6	Life Sciences	Intermediate	My project is about tarnish on silver and how to clean it. I found an online recipe that used a mixture of baking soda, vinegar, salt and boiling water in a bowl lined with aluminum foil. The solution worked really fast and did not require any scrubbing. I wondered, which ingredient was the secret ingredient that actually cleaned the silver. That is how this project got started. I tested different solutions by removing one ingredient. It turned out that salt and aluminum were the necessary ingredients that cleaned the tarnish from the silver. Baking soda or vinegar were unnecessary.	en
57	How Do Variations In Yeast Affect Bread Baking?	Gower, Jonathan	11	Male	6	Life Sciences	Intermediate	My Project is about the different ways yeast affects bread. I made multiple loaves of bread with different quantities of yeast. Throughout the experiment, there become a large volume difference among the breads, mainly between number 1 and all the others. Over the period of approximately one school week, we tested and analyzed the results of 20 subjects to investigate the affect of music on emotions. We played 3 different types of music: pop, rock and classical. We measured heart rate using an iPod app. We also measured feelings by asking guiding questions. We started with a control of each measurement (heart rate and feelings), then took other measurements after each song.	fr
67	How does music affect your emotions?	Dorsainvil-Lyons, Solange McCartney, Ella	11 11	Female Female	6	Life Sciences	Intermediate	We found that overall your heart rate increases when you listen to music in general. In addition, most people noted a positive emotional impact. Have you ever thought that bacteria could have a favorite genre of music? well, they can. I played music on bacteria to observe which genre will let it grow the most.	en
68	Bacteria's Favorite Music	Mtiraoui, Maryam	11	Female	6	Life Sciences	Intermediate	My hypothesis was that if I play classical music on bacteria, then it will grow more than if I play rock music because it has a higher frequency. In conclusion my hypothesis is incorrect because the rock petri dishes grew the most. The classical petri dishes grew the least. If I could do this project again next year, then I would have more genres of music to test with.	en
71	Don't Sour The Sourdough!	Courty-Stephens, Isha Walton, Freya	11 11	Female Female	6	Life Sciences	Intermediate	We decided to scientifically test whether the type and alkalinity of water would make a better or worse sourdough starter and bread. We tested tap water and six different bottled waters purchased at a grocery store. We want to figure out if the acidity of the water is correlated to the result of the sourdough starter and the subsequent sourdough bread. A three phase experiment was in order. First, we tested the pH of the waters. Then we made sourdough starters with the waters. Then we made bread with the sourdough starters.	en
83	Est-que les chats intérieurs et extérieurs réagissent-ils différemment aux sons d'oiseaux?	Ingram, Zach Zidulka-Bejcek, Saul	12 12	Male Male	7	Life Sciences	Intermediate	Project played 8 different bird sounds (4 from local birds and 4 from non-local birds) to 6 different cats. Two of the cats were interior, two were exterior, and two were interior cats that sometimes went outside. Cats reactions were videotaped. Qualitative observations were made about: whisker movement, tail movement, ear movement, and timing of reaction. Intensity of each cat's reaction to each bird was rated out of ten. It was found that outdoor cats react more intensely to bird sounds than indoor cats, and that cats react more intensely to the sounds of local birds.	en
21	Energizer Bunny, Check This Out!	Clarke, Meredith	12	Female	6	Physical and Mathematical Sciences	Intermediate	I made a saltwater battery. I was testing to see what liquids would conduct enough electricity to turn on an L.E.D. light. In my experiment, I found out that more than 1 liquid can conduct electricity. Warm salt water, cold salt water, vinegar and Ocean water all conduct electricity.	en

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23	LA LUMIÈRE ET LA PEINTURE	Heslin, Shayla	11	Female	6	Physical and Mathematical Sciences	Intermediate	Investigation into the effects different light sources and strengths have on paint.	fr
28	Balloons VS Chemical Reactions	Li, Sophia Robinson, Jenna	11 11	Female Female	6	Physical and Mathematical Sciences	Intermediate	We came up with the idea of combining different ingredients to make a chemical reaction that releases a gas. We tested how much gas was released by measuring how well it inflated a balloon. We thought of this idea when we did an activity where we folded a piece of paper into eight sections. we put down what ever idea was on our minds. Sophia thought of balloons and Jenna thought of electricity. But that's too dangerous, so we changed to chemical reactions.	en
29	Funky Paper Planes	Zhang, Daniel	11	Male	6	Physical and Mathematical Sciences	Intermediate		en
54	Launching Newton	Bains, Damon	11	Male	6	Physical and Mathematical Sciences	Intermediate	The experiment is studying the relationship between the mass of an object and the distance the object travels when it is launched by the DSB Missile Launcher. I wanted to know that if the mass of the object and the distance the object travels will have an inverse porportional relationship similar to the relationship of the mass of an object and the acceleration of an object when acted upon by an equal force (as stated by Newton's Second Law).	en
56	Le Science de les Avions de Papier or Paper Airplane Science	Hocking, Tobin	11	Male	6	Physical and Mathematical Sciences	Intermediate	Question: how do the wings of a paper airplane affect its travel? I first tested five paper airplanes, and folded the wings in different ways. The first, I left the wings straight. The second, I folded the wings up. The third, I folded the wings down. The fourth, I folded the wings down, then up. The fifth, I folded the wings up, then down. I then threw them each three times, then drew how they flew on a piece of paper with each airplane a different colour. Each airplane flew differently.	fr
60	Current	Bayley, Gavin MacDougall, Brayden	11 11	Male Male	6	Physical and Mathematical Sciences	Intermediate	Nous avons évalué 9 liquides avec des différents niveau de sel. Nous avons pensé que le liquid qui passera le plus de current va être l'un avec le plus de sel. Dans notre experience le broth a le plus de courant qui passe et l'eau a le plus bas. Ses résultats à arriver parce que l'eau a le moins de sel et le broth a le plus de sel. Plus de preuves avec ces résultats c'est que le V8 et a la deuxième place pour le sel et a la deuxième place pour conduction.	fr
63	Densité	Hope Tucker, Lilah Ngo, Erica	11 11	Female Female	6	Physical and Mathematical Sciences	Intermediate	We will be presenting liquid density and will be bringing various substances to demonstrate high densities and low densities visually. It will be shown in forms such as a density tower (made with; honey, dish soap, water and olive oil) and an egg experiment (2 raw eggs, water and salt). We will also have a poster board that describes these exhibits with more detail.	fr
80	Les Pendules	Beatty, Shentae	12	Female	7	Physical and Mathematical Sciences	Intermediate	An experimental study of how the length of a pendulum affects the pendulum's period of oscillation with a demonstration of a beautiful wave pattern created by multiple pendulums with precisely tuned lengths.	fr
82	Comprimaison de Neige! (Snow Compression!)	Costi, Gemma	13	Female	7	Physical and Mathematical Sciences	Intermediate	Une étude expérimentale de la façon dont la longueur d'un pendule affecte la période d'oscillation du pendule avec une démonstration d'un beau motif de vagues créé par plusieurs pendules avec des longueurs précisément accordées. Ma question est: "Quand la neige est comprimée, est-ce que la température change?". J'ai fait ce projet, car j'adore skier et tout ce qui concerne la neige. Pour l'expérience, j'ai utilisé un contenant avec un couvercle transformé en piston. J'ai inséré un thermomètre en bas et j'ai mesuré la température avant et après la compression. J'ai fait de mon mieux pour maintenir les variables constants. Par exemple, j'ai essayé de mettre la même quantité de neige dans le contenant chaque fois. J'ai découvert que la neige se réchauffe, car en la comprimant la pression augmente. C'était un projet super amusant!	fr

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90	L'expérience d'Oersted	Bouma Ngoock, Phoebe	12	Female	7	Physical and Mathematical Sciences	Intermediate	<p>L'expérience d'Oersted permet de montrer un lien entre l'électricité et le magnétisme (électromagnétisme).</p> <p>En utilisant une boussole et un circuit électrique fermé alimenté par des batteries de différents types (D, C, AA), l'expérience montre que le courant électrique produit un champ magnétique qui modifie le comportement de la boussole.</p> <p>Nos résultats montrent que le type de batterie définit la force du champ magnétique, et la polarité du circuit influence la direction du champ magnétique.</p>	fr
90	Experience Oersted	Seroussi, Juliette	12	Female	7	Physical and Mathematical Sciences	Intermediate	<p>In this experience, we will show you how a compass's needle moves when it is attracted by the magnetic field of a battery.</p> <p><u>We will measure the degree of the movement of the needle and her speed.</u></p>	fr
113	The Sound of Science	Hooper, Amy	12	Female	7	Physical and Mathematical Sciences	Intermediate	<p>In my science fair project this year I focused on renewable energy I wanted to find a easy alternative to wind turbines and solar panels. I chose to use sound energy because it is everywhere. I then reversed a old (working) speaker to take in sound energy and turned it into potential energy. After lots of different trials I concluded that it is possible to use sound energy as a renewable energy source but it is not practical because with the sound source I used (a tuba) I only collected approximately 2 volts.</p>	en
115	Solaris	Marois, Antoine Moreau, Ella	13 12	Male Female	7	Physical and Mathematical Sciences	Intermediate	<p>L'humanité recherche de plus en plus à produire une énergie dite verte. Dans cette optique, nous avons voulu créer un panneau solaire capable de générer de l'électricité. Nous voulions utiliser le plus possible des objets usuels et peu coûteux. L'expérience consiste à vérifier qu'une solution liquide nous permettrait de générer de l'électricité, en quelle quantité, ainsi que la concentration de sel requise. Nous avons émis l'hypothèse qu'en doublant les quantités d'eau et de sel utilisées, nous doublerions également la production d'électricité. Nous avons pu constater que notre panneau solaire peut produire de l'électricité, mais notre hypothèse n'a pu être confirmée.</p>	fr

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102	Should You Be Drinking That?	Broom, Abigail (Abbie)	13	Female	8	Biotechnology	Junior	A Science Fair experiment investigating the Chlorine residual (mg/L) and bacteria growth (using AGAR in petri dishes) of tap water in water bottles over a course of six days.	en
127	Is Hydroponics a Viable Growing Method: A Study on the Effects of pH on Spinach Seedlings	Mavrow, Dana	15	Female	9	Biotechnology	Junior	Hydroponics is a system of growing where, instead of the plants being grown in soil, they are grown in liquid, nutrient-rich, solutions. These systems have been known to have many issues, as the roots have direct exposure to the nutrients, including volatile pH levels. In my experiment I created a deep water culture hydroponic system and tested the growth of spinach seedlings with three different pH's: 4.0, 6.0 (the neutral solution for spinach), and 8.0.	en
87	E-Waste	Croft, Alexander	13	Male	8	Earth and Environmental Science	Junior	This project is an exploration of what E-Waste is, and how it is managed. It follows a trail from the Pender Island Recycling Depot to its ultimate reuse or disposal either in Canada or overseas. The project exposes current environmental problems in Ghana, Nigeria and China as these countries grapple with the huge influx of foreign electronic waste. It concludes that there is a need for better design to make recycling easier.	en
94	Semi-sustainable Aquaponics	Chen, Kevin	13	Male	8	Earth and Environmental Science	Junior	My science project is my vision for a sustainable aquaponic system that would be efficient and an ideal food source, an educational program for grades 5-12, offer recreational sport fishing in a city center where green spaces are not readily available.	en
95	A solution for pollution	Ibrahim, Eya	13	Female	8	Earth and Environmental Science	Junior	Every 5 minutes someone gets a disease caused by the air in their environment. Whether it's the car pollution or simply the toxins released by garbage or people. I set out to find a solution which was both efficient, cheap, sustainable and one that wouldn't require to create even more pollution in it's direct purchase and production. 12 million people in the world cycle on a regular basis and so that's how my invention essentially came to life, by linking these two causes to something valuable to me. My invention's bike with an atmosphere purifying box between the handlebars.	en
100	Microplastics: In Our Local Shellfish	Ohnona, Lauren	13	Female	8	Earth and Environmental Science	Junior	My project investigated three beaches on Pender Island to see if the clams were contaminated with microplastics. It was my goal to determine to what degree are microplastics showing up in our local shellfish. Microplastics, in the form of microfibrils, were in fact identified. As a result, I was able to compare the data from the 3 locations. This project addressed the ever growing problem related to ocean pollution and the bioaccumulation of toxins in the local food chain.	en
117	Generating Electricity from Bacterial Nanowires	Mtiraoui, Tesnim	14	Female	9	Earth and Environmental Science	Junior	In my project, I generated a fair amount of electricity using bacteria nanowires. I used a microbial fuel cell to generate the electricity. I used 3 different mud types (which all mud types have electricity producing bacteria). I recorded my results and hopefully this method can be used to foreign countries without electricity using a large scale ground microbial fuel cell.	en
123	The Future of Water Purification	MacPherson, Gabrielle	14	Female	9	Earth and Environmental Science	Junior	My project is focusing on different water purification methods. During this, I have created a cheap UV water purifier based off of MEC's SteriPen.	en
125	Trapping Killer...Microbeads - Microbead Filtration	Van Cuylenborg, Sophie	14	Female	9	Earth and Environmental Science	Junior	For my project, I looked at how I could stop microbeads, tiny pieces of plastic between the sizes of 1 millimeter to 1 micron, from getting into our water sources. Microbeads enter into our water sources through cosmetic products, and are made from polyethylene, polymethyl methacrylate, nylon polyethylene terephthalate and polypropylene. These tiny plastics are a pressing environmental issue because they severely damage our ocean's ecosystems, and the marine life that live within them. I decided I wanted to stop the problem where it started by creating a filter for microbeads that would be used in sink drains.	en
128	The Solar Bottle Bulb	Golonka, Tara	14	Female	9	Earth and Environmental Science	Junior		en

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129	Slope Angle and Earthquakes: To what extent does vegetation limit soil erosion?	Brice, Lily	14	Female	9	Earth and Environmental Science	Junior	Living on the West Coast of Canada in the Pacific Ring of Fire, earthquakes are very common. Because of the prevalence of earthquakes and the high precipitation, it is important to know if slope angle and vegetation have an effect on soil erosion. This project tested the effect of slope angle on soil erosion with and without a simulated earthquake. My results demonstrated soil erosion increases with the lack of vegetation, increased slope angle and earthquake simulation.	en
135	Capturing Carbon; A Study of the Relationship of Carbon Dioxide and Calcium Oxide	Smith, Marisa	15	Female	9	Earth and Environmental Science	Junior	Examining the relationship between calcium oxide and carbon dioxide in an attempt to solidify carbon dioxide and potentially stop it from entering the atmosphere through vehicle exhaust pipes.	en
103	Frequency vs Sound Absorption	Boyarin, Gabriel	13	Male	8	Engineering and Computer Sciences	Junior	Is the frequency of sound affected by acoustic sound absorption? My hypothesis was no, because I did research, and, judging by the way it affects other qualities of sound, I did not think it would. To test this, I played 6 frequencies with a tone generator and, with a decibel meter, measured decibels and frequencies without material and then with four absorption materials. Decibels did change, but frequencies did not change drastically, the biggest difference being about three Hz. With more frequencies, materials, and equipment, I could have had more diverse results, but with my materials, my hypothesis was correct.	fr
106	Operation Pollination	Hudak-Kesteven, Paige	14	Female	8	Engineering and Computer Sciences	Junior	I have designed a robotic pollinator to pollinate crops on Earth and create a self-sufficient food supply on Mars. I was inspired by learning about the decline of the bee population in Gr. 6 and learning about an organization called MarsOne in Gr.3. My design has been made for the future and I made it so that no one has ever seen anything like it. Because it is so futuristic, a prototype was not possible at this stage. The pollinator's main use is Mars, but it could also be used for vertical farming on Earth in the future.	en
118	Finding Landmines; A Mine Detecting Robot	Khouider, Ines	15	Female	9	Engineering and Computer Sciences	Junior	Landmines drastically slow the development of contaminated regions. Clearing landmine fields is a dangerous job. What if one made a robot to detect landmines? I split my project into two parts; the metal detector and the programs. I created a metal detector with a 555 timer chip. I also made 3 programs. One was called the field program and would make the robot do the surface area of a field based on user input. The second was a sound sensor program to listen to the metal detector. The third would place GPS coordinates based on where a landmine was found.	en
119	//+ Simplifying Programming	ter Heide, Cohen	15	Male	9	Engineering and Computer Sciences	Junior	Major programming languages in use today often have the same issues. They use very cryptic syntax and make building/importing extensions more complicated than necessary. Large file sizes, excessive ram usage, and long compile times can make coding slow, reducing productivity and lacking efficiency. These issues create stumbling blocks for amateur programmers and use excessive resources.	en
120	Effect of CPU and RAM on FPS	Woodruff, Anders	14	Male	9	Engineering and Computer Sciences	Junior	The goal with the //+ project is to design a new programming language from scratch that is easy to use and learn, accessible to all users (in particular new programmers) without compromising speed or power. This experiment examined the effect of a computer's Random Access Memory (RAM) and the power of its Central Processing Unit (CPU) on the number of Frames per Second (FPS) displayed. A 3D animation of a given number of frames was run within a virtualbox. The RAM and CPU of the virtualbox were manipulated to simulate varying supplies of these resources to the computer. For each simulation, the average FPS was determined by measuring total time to run. No correlation was found between RAM and FPS but significant positive correlation was found between CPU and FPS.	en

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86	ORGANic Gardening	Duffey, John Piché, Kate	13 13	Male Female	8	Health Sciences	Junior	Our goal was to research the possibility of using stem cells to create replacement organs, specifically the pancreas. We researched the functions of the pancreas and the types of stem cells and how the function.	en
93	Wash or Wipe: Toilet Hygiene a Missing Variable in Colorectal Cancer (CLC) Epidemiologic Studies	Kosgodia, Wishva	13	Female	8	Health Sciences	Junior	Colorectal cancer, is an Environmental disease believed to be driven by a wide range of cultural, social, and lifestyle practices. It is mainly considered as a disease of Western Cultures due to significant geographic difference in global distribution. Considering the marked differences in toilet hygiene practices of the Western and the Eastern world, this project attempts to relate colorectal cancer development and distribution to toilet hygiene practices in he world. The project is a study that includes (a) A school based anonymous survey, (b) A controlled experiment conducted at UVic biochemistry lab and (c) a literature review and data analysis	en
99	Brainwaves	Stafford, Ripley	13	Female	8	Health Sciences	Junior		en
101	THE EVERYDAY MASK	Abdoulaye, Farida	13	Female	8	Health Sciences	Junior	For my project, I tested the question in what grade do girls feel the need to feel belongingness? I asked girls from each grade (kindergarten-grade 12) how many marbles were in a jar then gave her time to discuss her guess with my assistants who would convince the participant there are 15 marbles in the jar then I asked again and recorded if she modified her guess or not. I predicted that grade 7 and 8 participants would modify their answers. My prediction was wrong because every participant changed their answer to 15 or a number close to 15.	en
105	Are You Paying Attention?	McMeekin, Kiera	13	Female	8	Health Sciences	Junior	My experiment was testing which form of communication distracts people the most between texting, face to face conversations, and phone calls.	en
107	How do Drinks and Fluoride Impact Your Teeth?	Goodman, Emily	14	Female	8	Health Sciences	Junior	I did my project on how different beverages affect your teeth and how fluoride protects them over time.	en
109	Memorable Strategies	Cooper, Katie	14	Female	9	Health Sciences	Junior	My Question was "What are memory Palaces and how could they help to enhance memory?" I tested 16 people. I gave each test subject up to ten minutes to memorize a grocery list. For test one I let them use freestyle memorization. and the second test they had to use the memory palace method. Then I did a retention test later on. I learned that the memory palace works best for long-term memory and 69% of my test subjects thought it was way easier and less stressful	en
116	A Cure For What "Ails" You; a Study of the Antibacterial Effects of Garlic	Gandhi, Riya	14	Female	9	Health Sciences	Junior	Garlic, ginger, and ginseng were each separately tested for their individual and combined effects on oral bacteria. When garlic was shown to be the most successful, further investigation was taken to research the compounds that carried out this effect. Through thorough investigation, allicin, an organosulfur compound, was predicted to be the compound that produced the antibacterial result. Allicin was then extracted from freeze-dried garlic, and was tested against the oral bacteria individually	en
121	Colourimetric lactose detection using silver precipitates	Wallace, Corin	14	Male	9	Health Sciences	Junior	Lactose intolerance is evident in those who have a inability to fully digest lactose. Symptoms of lactose intolerance can include bloating, pain cramps in the lower belly, vomiting and digestive issues. This project involved developing a way to detect lactose using a colour change using Benedict's reagent and silver nitrate. This could help those who are lactose intolerant live their life normally and without fear of an unknown cause for a reaction	en
124	OH MY GERD! Testing naturopathic remedies for gastroesophageal reflux disease	Gandhi, Shreya	14	Female	9	Health Sciences	Junior	I tested the effects of naturopathic remedies on heartburn, the primary symptom gastroesophageal reflux disease. To do this, I made simulated gastric juice and added the various materials to the gastric juice while monitoring the pH. I found a variety of different possible remedies, with little scientific research on why lowering the pH might work to relieve heartburn pain, and prepared each remedy, adding increasing increments to simulated gastric acid. The results show little benefit in using these naturopathic remedies	en

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126	Does listening to google maps while driving make you a safer driver?	Macdonald, Morgan	15	Female	9	Health Sciences	Junior	The goal of my experiment was to determine if reaction times are affected while listening to GoogleMap instructions while driving. I tested 28 participants, 14-18 years old. I tested them on a simulator provided by VicVR, where each participant drove 4 laps of a track. During the first 2 laps, I asked them a list of 8 math questions, timing how long it took them to answer correctly. I repeated this step for the last two laps but read driving instructions. I discovered that reaction times are improved when driving with google map instructions (2.87s compared to 3.11s).	en
98	Curious Colours	Elliott, Ada	13	Female	8	Life Sciences	Junior	My project was based on the thought that colour can influence the way we perceive taste in food and drinks. I chose to use drinks, because the colour could be easily manipulated and the quantities of ingredients controlled. I believed that people would be tricked into thinking they were individually flavoured. After doing the experiment, which consisted of volunteers tasting each drink and describing the flavour, I put all of the information into circle graphs, showing the individual and overall results. When comparing the results to the hypothesis, it proved that I was indeed correct.	en
108	How different levels of copper affect hair color	Poole, Grace	14	Female	9	Life Sciences	Junior	It is well known by swimmers that frequent swimming can cause changes in hair colour. This is most likely due to reactions with the chlorine and copper reacting together, where oxidized copper gathers on the strands of hair. I wanted to test how different colours of hair respond to solutions of copper ions and bleach.	en
104	Les Paraboles	Watts, Arlo	13	Male	8	Physical and Mathematical Sciences	Junior	Mon but était de déterminer quelle forme de parabole peut produire la plus d'énergie avec la même quantité de lumière. J'ai construit trois paraboles avec du carton et du papier réfléchissant, en utilisant trois différentes courbes simples des paraboles que j'ai calculés. Pour trouver lequel peut produire la plus d'énergie, j'ai pris mes trois paraboles et mis des éprouvettes aux points focaux, car j'ai su que la température serait reliée au montant d'énergie qui frapperait les éprouvettes. J'ai mesuré la température à chaque minute pour recevoir mes résultats. J'avais aussi une "contrôle"; une éprouvette sans surface réfléchissant par-dessus.	fr
122	Lift of an airplane wing when the bank angle is increased	Poole, Kelley	14	Male	9	Physical and Mathematical Sciences	Junior	In this project I built a model airplane wing and a wind tunnel to test the amount of lift produced when the bank angle is increased. I found that when the bank angle increases, the amount of lift decreases. This has applications to better designing efficient and safe planes.	en
131	Designing a Photosynthetic Microbial Fuel Cell for Energy Production in Agricultural Applications	Svec, Zofka	14	Female	10	Earth and Environmental Science	Senior	An original double-chambered microbial fuel cell (MFC) prototype was designed. A cubic container was divided by a Nafion proton exchange membrane, with both chambers housed with an electrode connected to a 1000ohm resistor and multimeter. Harvested local algae samples were tested over 9 months for chlorophyll content and used as "fuel" for the MFC. Multiple variables and environmental factors were controlled and power density and voltage was recorded. Data was analyzed using polarization curves to determine most effective manipulation of variables and environmental factors. Findings demonstrated the most relevant application could be plant-growth centres using energy efficient full-spectrum LED lighting.	en
134	Purifying Water: Using citric acid-crosslinked beta-cyclodextrin polymer to remove bisphenol A	Cheng, Melody	16	Female	10	Earth and Environmental Science	Senior	In this project, I developed a protocol to filter bisphenol A (BPA) out of water using a citric acid-crosslinked beta-cyclodextrin polymer. Currently, plastics used in everyday life contain BPA and because this chemical has negative health effects, it is important to have a way to remove it from water. This is essential since studies indicate that early development is the period of highest sensitivity to BPA resulting in developmental impairment, cancer, obesity, and interference with brain activity related to memory, learning and mood control.	en

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130	Defining characteristics of bismuth telluride TEGs	Telmer, Nattan	15	Male	10	Engineering and Computer Sciences	Senior	Thermal Electric Generators (TEGs) are solid state heat engines that convert a heat differential into energy through the Seebeck effect. Previous research has shown inconsistency of commercial bismuth telluride TEGs according to a range of temperature differentials. The goal of my project is to measure these inconsistencies and hypothesize ways of minimizing them. This was done by putting three TEGs through a battery of tests while measuring Volts, Amperes, Ohms and the temperature on either side of the TEG. Further a test of how to increase the temperature difference by insulating the cold and hot sides will be done.	en
132	Improving Spinal Fusions: Redesigning the Pedicle Probe to Prevent Vertebral Breaches	Fedrico, Nicolas	16	Male	11	Engineering and Computer Sciences	Senior	Pedicle probes are medical devices used by surgeons to guide pedicle screws for spinal fusions. During this type of procedure, vertebral breaches are a common occurrence, resulting in complications ranging from infection to paralysis. I identified and pursued the need for an electro-mechanical pedicle probe to prevent breaches using density gradient analysis of cortical and cancellous bone. The cortical bone is avoided using a tensile load cell and Arduino to monitor the applied force. Once the threshold of 60 Newtons is reached, the novel pedicle probe warns the user providing real-time tactile and visual feedback to prevent the possible breach.	en
133	Control for Groups of Robots - Collaborative Rescue	Yang, Hanqing (Albert)	17	Male	11	Engineering and Computer Sciences	Senior	In this project, I designed a group of robots to do rescue jobs collaboratively. They can communicate and make decisions independently, dividing a rescue mission into submissions to everyone. Once the target is found, the robot will send a message to inform others that the mission has been completed. This project was based on Arduino and Raspberry Pi. Zigbee was used to establish communications inside the robot group, SLAM to simulate the environment, data from IMU sensor to calculate each robot's position, and DSR to send messages from an individual to the rest of the group.	en

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Summary									
	Category	Division	#						
	Elementary	Biotechnology	0						
	Elementary	Earth and Environmental Science	7						
	Elementary	Engineering and Computer Sciences	8						
	Elementary	Health Sciences	7						
	Elementary	Life Sciences	9						
	Elementary	Physical and Mathematical Sciences	10					41	
	Intermediate	Biotechnology	1						
	Intermediate	Earth and Environmental Science	14						
	Intermediate	Engineering and Computer Sciences	11						
	Intermediate	Health Sciences	10						
	Intermediate	Life Sciences	7						
	Intermediate	Physical and Mathematical Sciences	14					57	
	Junior	Biotechnology	2						
	Junior	Earth and Environmental Science	10						
	Junior	Engineering and Computer Sciences	5						
	Junior	Health Sciences	11						
	Junior	Life Sciences	2						
	Junior	Physical and Mathematical Sciences	2					32	
	Senior	Earth and Environmental Science	2						
	Senior	Engineering and Computer Sciences	3						
	Senior	Life Sciences	0					5	

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