CWSF 2012 - Charlottetown, Prince Edward Island

Andrea Chan, Matthew Treble

Big or Small; Narrow or Wide: Text Presentation for Early Readers

Challenge: Discovery
Category: Intermediate
Region: Vancouver Island
City: Victoria, BC
School: Lambrick Park Secondary

Abstract: Grade one and three stories were written in increasing level of difficulty. Each story was modified so that font size and column width were altered. Student performance was monitored for insertions, missed lines, omissions, substitutions, and told words. Narrow columns of text show greater reading success. Font size appeared to be less important. Response varied with age.

Biographies
Andrea - My name is Andrea Chan and I am a grade 9 student at Lambrick Park Secondary School. I love to play the piano and row. I have been playing piano for 7 years and have been doing musical theory for 2 years. Also, I play the clarinet and percussion. I started rowing at the beginning of grade 9. I am holding a world record in rowing. It is placing as many rowing boats in the water on the same date, with everyone rowing, and getting coached by a gold medalist rower. I enjoy reading, sleeping in, playing outdoors (being active), and playing music on the piano (I love my piano). Growing up, I was into figure skating and swimming. As an adult, I want... Matthew - My name is Matt Treble, and I am a grade 9 student at Lambrick Park Secondary School. I have recently completed my Bronze Cross and am working towards becoming a Life Guard. I play the piano and guitar. I enjoy running, swimming and am always trying to improve. I volunteer at a local library helping kids read in a program called "Reading Buddies". This is my first time attending the Canada Wide Science Fair.

Awards	Value
Excellence Award - Intermediate - Bronze Medal Sponsor: Nuclear Waste Management Organization	$300
Western University Scholarship Bronze Medallist - $1000 Entrance Scholarship Sponsor: Western University	$1 000
Total	$1 300

CWSF 2012 - Charlottetown, Prince Edward Island

Katherine Evans

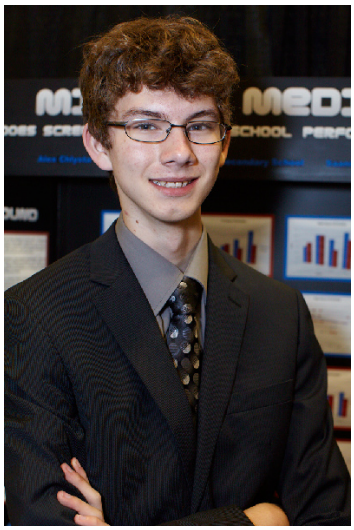
From Tank to Tap: Are Carcinogens Being Introduced into Piers Island Water?

Challenge: Environment
Category: Intermediate
Region: Vancouver Island
City: Victoria, BC
School: St Margaret's
Abstract: This project was an investigation into the quality of drinking water on Piers Island, BC. Samples were taken from around the island to determine whether or not the decaying, wooden equalization tank and extra chlorine treatments were causing increased levels of carcinogens to form. Results showed that in certain areas, islanders were ingesting more than six times the carcinogens found in water entering the island.

Biography
My name is Katherine Evans and I am in Grade Nine at St. Margaret's School in Victoria, BC. This is my first CWSF and I am very happy to be a part of team Vancouver Island! My project addresses an issue very important to me, my friends and family on Piers Island. I was interested in this topic because I wanted to determine the cause of the high rates of cancer on the island. After this project, I plan to work towards finding a solution to the growing problem, and to stay in contact with the volunteer water testers on the island. I would advise other students planning their projects to choose a topic that is important to them and others. Outside of science fair, I am interested in film and television acting, and have performed in many shorts, independent films and other projects. I am excited to be visiting Prince Edward Island, and I am very grateful for this opportunity!

Awards	Value
Excellence Award - Intermediate - Bronze Medal Sponsor: Nuclear Waste Management Organization	$300
Western University Scholarship Bronze Medallist - $1000 Entrance Scholarship Sponsor: Western University	$1 000
Total	$1 300

CWSF 2012 - Charlottetown, Prince Edward Island



Alex Chlysta

Minds & Media: Does Screen Time Affect School Performance?

Challenge: Discovery
Category: Senior
Region: Vancouver Island
City: Victoria, BC
School: Claremont Secondary School
Abstract: Video games are known to improve spatial reasoning skills. Spatial skills are associated with success in math & science. Spatial reasoning was tested on paper and with a newly developed 3D video game. Screen time and spatial skills were analyzed and correlated with math and science grades. Passive hours (TV) showed a statistically significant negative correlation with science grades while active hours (gaming) did not.

Biography
Alex Chlysta is a Grade 11 student in Saanich, B.C. He plays piano, electric guitar and tenor saxophone. Alex is an avid swimmer, and is currently working toward becoming a lifeguard. Hobbies include golfing, skiing, rock climbing, photo editing, web design, and coding. In his spare time, Alex acts as a webmaster, a server operator and has found a new interest in drama. He took a large role in his school production, playing Oliver in Shakespeare's "As You Like It". Alex plans on pursuing a career in medicine or software engineering. This is Alex's second year at CWSF.

Awards	Value
Excellence Award - Senior - Bronze Medal Sponsor: Nuclear Waste Management Organization	$300
University of Ottawa Entrance Scholarship Senior Bronze Medallist - $1000 Entrance Scholarship Sponsor: University of Ottawa	$1 000
Western University Scholarship Bronze Medallist - $1000 Entrance Scholarship Sponsor: Western University	$1 000
Total	$2 300

CWSF 2012 - Charlottetown, Prince Edward Island

Vicki Kleu

SA-SHA: Reducing Arterial Turbulence Through External Stents

Challenge: Health
Category: Intermediate
Region: Vancouver Island
City: Victoria, BC
School: Lambrick Park Secondary

Abstract: Pig arteries were injected with a resin to simulate plaque in human arteries. Arteries were measured for decreased flow rate. Stents were either inserted or applied externally. Flow rate was re-measured. More resin was injected. Stent effectiveness was reassessed. Loss in flow rate was significantly smaller in external stents than those with internal stents. External stenting might delay additional bypass surgery or angioplasty.

Biography

My name is Vicki Kleu. I am a grade 10 student from Victoria, BC. I am also a returning Canada Wide Science Fair participant working on an extension of last year's project. I've lived in Canada for five years. My South African accent, though still present, is now mingled with a Canadian drawl. This is my fourth year participating in science fair. I now spend more waking hours in a lab during science fair season than in my own house. When not in the lab, I am in the dance studio. Over the past two years I have investigated the possibility of replacing angioplasty with external stents. Realistically, my project cannot be taken further unless I work with mammals and surgically implant external stents. This project intrigues me so much so that I am now considering a career in medical research or medicine. I also have a cheeky side -- so I am told. Last year at the CWSF my crew and I made a delegate's bed disappear. Don't worry. We returned it -- eventually.

CWSF 2012 - Charlottetown, Prince Edward Island

Ann Makosinski

The Piezoelectric Flashlight

Challenge: Innovation
Category: Intermediate
Region: Vancouver Island
City: Victoria, BC
School: St Michaels University School - Senior
Abstract: Creating a flashlight that does not use batteries, chemicals, magnets and minimum of moving parts is quite a challenge. Using a rotating gear, several piezoelectric discs, and an electronic circuit, I was able to generate a continuous 3.3 mW at 2 turns per second, producing a bright, 2.8 ft-candles of light from 9 LED's. The flashlight requires little effort and has only 1 moving part.

Biography
Hi, my name is Ann Makosinski. I go to St Michaels in Victoria, and am in grade 9. I got the inspiration for my project after I realized that a lot of so called "Eco Friendly" flashlights weren't that friendly in reality. For further investigations, I plan to make my flashlight bigger, quieter, and brighter. I enjoy doing projects that are ecologically related. My advice to future Science Fair participants would be to try to think of something original, because you usually get the most out of it, as you have to learn everything from scratch. Other than experimenting with electronics, I enjoy reading, acting, telling puns, eating cheese, stalking my current obsession(s) on the internet, and editing and directing movies/plays. I have gotten second place in my category in grade 6 for the Vancouver Island Regional Science Fair, first place in grade 7, and this year I got 3rd place overall. I also have won numerous awards (and cash!). My notable experiences in my short life so far has been fainting in basketball tryouts, meeting Joshua Bell, getting a book dedicated to me, eating mealworms, and of course, discovering the world of innovation.

Awards	Value
Excellence Award - Intermediate - Bronze Medal Sponsor: Nuclear Waste Management Organization	$300
Western University Scholarship Bronze Medallist - $1000 Entrance Scholarship Sponsor: Western University	$1 000
Total	$1 300

science is serious fun

Youth Science Month
Mois des jeunes scientifiques

MARCH 2013

Celebrate Canada's Young Scientists!

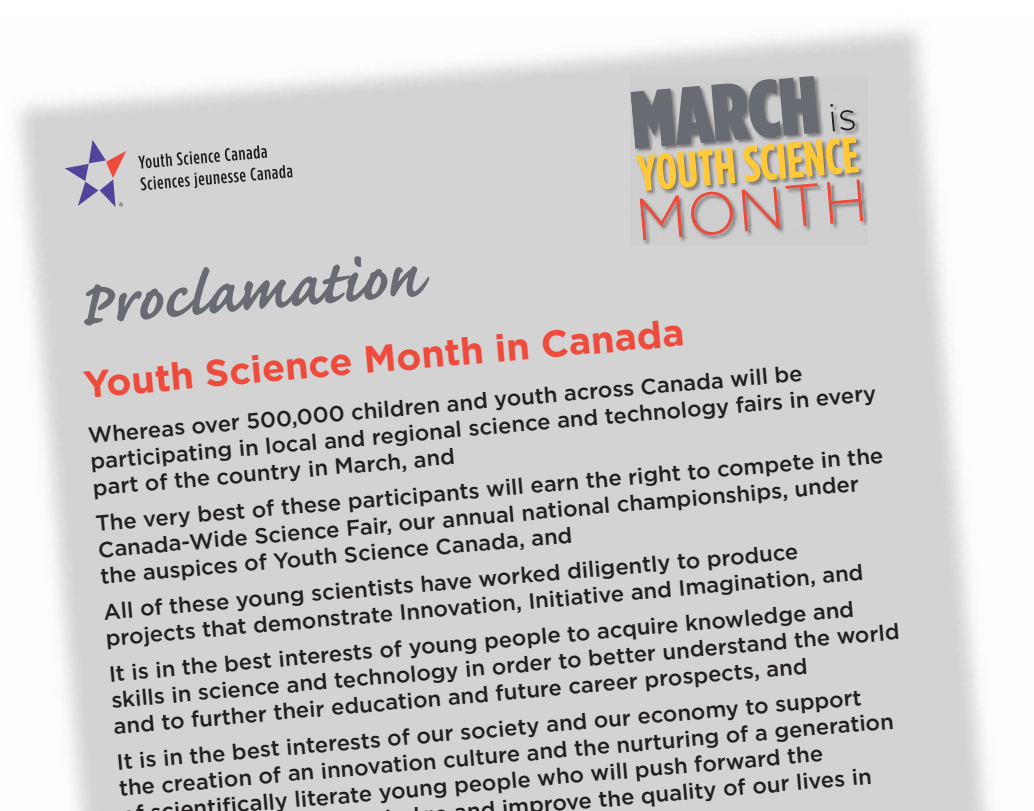
Every fall, Youth Science Canada calls on students across the country to take up the challenge of doing a science project. More than half a million will do a project this school year and about 25,000 of these will compete in one of 100 regional science fairs held across Canada this winter and spring.

The Canada-Wide Youth Science Challenges target seven issues that matter to Canadian youth, the future of our country and the world – Discovery, Energy, Environment, Health, Information, Innovation, and Resources. Young Canadians are making the world a better place by doing a project.

Along the way, they tell us, they learn a lot, make friends, challenge themselves, and have fun as they "do real science." And with nearly $1M in awards, prizes, trips, and scholarships available, it's serious fun!

Youth Science Canada has proclaimed March as Youth Science Month. At press time, Youth Science Month has also been proclaimed or endorsed by British Columbia, Manitoba, Northwest Territories, Prince Edward Island, and Saskatchewan.

We invite schools, teachers, students, and families to join us in celebrating the imagination, initiative and innovation of Canada's young scientists by visiting their local science fair. To find the fair closest to where you live, see the back of the enclosed poster, or visit **youthscience.ca** and click on **Find Your Fair**.


Youth Science Canada
Sciences jeunesse Canada

MARCH is YOUTH SCIENCE MONTH

Proclamation

Youth Science Month in Canada

Whereas over 500,000 children and youth across Canada will be participating in local and regional science and technology fairs in every part of the country in March, and

The very best of these participants will earn the right to compete in the Canada-Wide Science Fair, our annual national championships, under the auspices of Youth Science Canada, and

All of these young scientists have worked diligently to produce projects that demonstrate Innovation, Initiative and Imagination, and

It is in the best interests of young people to acquire knowledge and skills in science and technology in order to better understand the world and to further their education and future career prospects, and

It is in the best interests of our society and our economy to support the creation of an innovation culture and the nurturing of a generation of scientifically literate young people who will push forward the boundaries of our knowledge and improve the quality of our lives in the future, and

All Canadians should be supporting and celebrating our young scientists.

Therefore, Youth Science Canada proclaims that March 2013 is

Youth Science Month in Canada

So proclaimed March 1st, 2013 by
Youth Science Canada
Len Reimer, BEd, MEd
Chair

Are your students learning Smarter Science?

Your students could be DOING science, not just talking about it!

Smarter Science is a framework for K–12 science teaching and learning, and for developing the skills of inquiry, creativity, and innovation in any curriculum unit. Students in Smarter Science classrooms learn to DO science – not just talk about it – by questioning, and investigating. Smarter Science is used by thousands of teachers – in every grade – who are engaging their students in real science.

Smarter Science workshops prepare teachers to successfully implement scientific inquiry in their classroom. Our team has trained teachers from coast to coast – in English and French. We currently offer three full-day workshops:

1. Introduction to Smarter Science
2. Assessment and Evaluation of Inquiry
3. Innovation and Creativity through Inquiry

continued overleaf

In this mailing

Please post or share this newsletter and the contents of this mailing with your science colleagues and students:

Eureka! Canada poster: Canadian Institutes of Health Research's Eureka! Canada Facebook page highlights Canadian health researchers.

Youth Science Month poster: Youth Science Canada's invitation to submit a project, sign up as a volunteer or judge, or visit your local science fair, lists over 100 regional fairs from coast to coast to coast

Canada-Wide Youth Science Challenges

Youth Science Canada wants to engage youth in inquiry and critical thinking through science by answering a question or solving a problem that focuses on issues that are important to them, Canada's future and the world.

Discovery
Create new fundamental knowledge based on your curiosity by asking a question and using the techniques of scientific inquiry to develop an answer.

Energy
Improve our use of current energy sources, enable the transition to alternative energy sources, or reduce our energy footprint.

Environment
Reduce our impact on, improve our understanding, and ensure the quality of water, air, soil, and the diversity of living things.

Health
Increase our understanding of the human body, or apply science and technology to improve health, control disease, or support an aging population.

Information
Enhance communication and our use of information using digital and networking technologies, or applications of new media.

Innovation
Combine scientific principles with your creativity to develop a new material, structure, device, or system to solve a problem or improve an existing solution.

Resources
Develop better ways to use our natural resources that provide sustainable sources of food, products, or prosperity.

Canada-Wide Science Fair 2012 Platinum Award Winners

A week-long national event each May, the Canada-Wide Science Fair (CWSF) brings together 500 top young scientists from grades 7-12 (Sécondaire I-V and Cégep in Québec) from across the country to compete for $1 million in cash, scholarships and exclusive science opportunities. These finalists are selected at the 100 regional science fairs across the country, mostly in March and April, leading up to the national competition.

Below are profiles of the three Platinum Award winners at CWSF 2012 held in Charlottetown, Prince Edward Island.

For information on CWSF 2013 in Lethbridge, Alberta, May 11-18, visit cwsf.youthscience.ca.

La quête de l'ombre jovienne

Everyone knows that the sun casts a shadow during the day. At night, you might have noticed that the moon and Venus are bright enough to cast shadows, but Laurent Joli-Cœur (15) of Montreal wondered whether Jupiter, the next brightest object in the night sky, could also be shown to do this. The challenge brought together his two passions – astronomy and photography – in a quest to be the first ever to demonstrate this phenomenon.

Over the course of eight months he designed, built, and tested a device – like a sundial combined with a digital camera – that he could accurately aim at Jupiter. When it was finally ready, he took a series of time exposures over the course of a long, sleepless, and frosty November night in the Mont-Megantic International Dark Sky Reserve east of Sherbrooke.

It worked, but to be sure, he rotated the apparatus slightly, and the shadow moved, demonstrating that the light was coming from a single point. He also pointed it away from Jupiter and found no shadow, eliminating the possibility that the shadow was caused by the overall glow of the night sky.

Laurent won a total of five awards at CWSF 2012, including the Discovery Challenge Award (Intermediate), Platinum Award for Best Intermediate Project, and the Best Project Award, presented by BlackBerry.

Laurent Joli-Cœur
Secondary 3 (Grade 9)
Collège Jean-de-Brébeuf
Westmount, QC

Computational Methods for the Screening of Novel Neuraminidase Inhibitors

Eric LeGresley
Grade 11
St. John Brebeuf School
Chilliwack, BC

Eric LeGresley (15) of Chilliwack, BC first became interested in antivirals following the 2009 H1N1 flu outbreak. Influenza viruses cause illness ranging from "the flu" to deadly pandemics, but as these viruses become more resistant to current antivirals, new ones need to be developed.

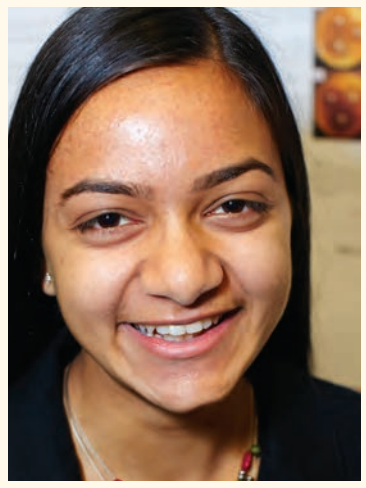
The traditional lab-based approach to identifying and testing antivirals is slow, tedious, and expensive, so increasingly researchers are turning to computers to design and test candidate drugs. As part of a concurrent studies program between his high school and Simon Fraser University, LeGresley developed a computational chemistry algorithm to assess how well a potential antiviral will prevent an influenza virus from proliferating. His algorithm reduces the screening time from six months to a half-day.

In addition to the Platinum Award for Best Senior Project, presented by BlackBerry, the 15 year-old grade 11 student won the Innovation Challenge Award (Senior), a Manning Young Canadian Innovation Award, and entrance scholarships to five Canadian universities. He notes, "This kind of research is exciting because you can see its significance for the real world. My two pieces of advice for other students pursuing research are: work hard and have fun."

Uncovering the Cardiac and Gastrointestinal Safety of Two Amyloid-ß Inhibitors

When 13 year-old Maya Burhanpurkar's grandfather passed away after years of suffering from Alzheimer's disease, the grade 8 student decided to learn more about the disease and potential cures. She read that Alpha Lipoic Acid and Melatonin, both non-prescription supplements, had recently been shown to slow the formation of fibrils in the brain that are characteristic of Alzheimer's disease, but wondered whether these substances might aggravate heart or digestive problems that also affect elderly populations.

As there were no published studies on the cardiac or gastrointestinal effects of the two substances, she set out to design two experiments that could be done at home. She tested cardiac safety using water fleas (*Daphnia*) and gastrointestinal safety using *Lactobacillus acidophilus*, bacteria found in the human gut – and commonly used to make yogurt.



Maya Burhanpurkar
Grade 8
Codrington Public School
Shanty Bay, ON

She found that both substances appear to be safe for the heart, Melatonin appears safe for the digestive system, but Alpha Lipoic Acid would likely cause gastrointestinal issues.

Maya won the Platinum Award for Best Junior Project, presented by BlackBerry, as well as the Discovery Challenge Award (Junior), The Actuarial Foundation of Canada Award, and a Western University entrance scholarship.

Are your students... continued

Get started with Smarter Science:

- Book a professional development workshop for your school or school board at competitive rates;
- Order classroom-ready framework posters, Steps to Inquiry poster sets, and the 54-page teacher resource booklet, *Introducing the Framework* at **smarterscience.ca**;
- Download free PDF versions of the framework poster, *Steps to Inquiry* poster sets and *Introducing the Framework* at **smarterscience.ca**;
- Join the Smarter Science online community of educators who share inquiry-based teaching/learning experiences and resources;
- Invite us to your provincial science teacher conference;
- Participate in our annual summer institute.

All resources and workshops are available in English and French.

For more information, visit **smarterscience.ca**

To book a workshop, call our toll-free number: 866-341-0040.

Youth Science Canada gratefully acknowledges its national awareness partners

BlackBerry
NSERC CRSNG
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Youth Science Month – Serious Fun!
is published each March by Youth Science Canada for Canadian educators.

Youth Science Canada exists so Canadian youth are engaged through science in inquiry and critical thinking. To learn more about our programs, visit youthscience.ca.

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BlackBerry PRESENTS/PRÉSENTE
CWSF ESPC
Canada-Wide Science Fair Expo-sciences pancanadienne

May 11-18, 2013
Lethbridge, Alberta

Youth Science Canada's
52nd annual
Canada-Wide Science Fair

University of Lethbridge
1st Choice Savings Centre
Lethbridge Alberta

School groups* and public welcome:

Sunday May 12 - 2:00pm-4:30pm
Monday May 13 - 9:00am-12:00pm
Thursday May 16 - 9:00am-12:00pm
Friday May 17 - 9:00am-12:00pm

*(Mon. & Thu. - advance booking required)

cwsf.youthscience.ca

Photo credits: John Hasyn, André Van Vugt/Giant Vision