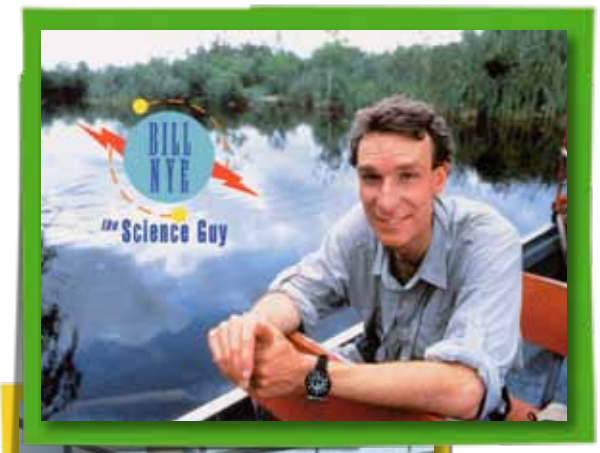
The Alberta Science Teacher

Volume 32, Number 1 June 2012

The 2012 Science Conference

Banff, AB November 15-17.



Register Today, and Submit Your Session Proposal at

www.scienceconference.ca

From the Editor

As you receive this newsletter, the 2011/12 school year will be coming to a close. This past year has been an amazing one for me. Conference 2011 was a huge success, and I was very happy to be a part of the planning team. I have also been elected as president-elect on the Science Council executive, which is exciting and a little bit scary at the same time.

I have volunteered to be the editor for the *Alberta Science Teacher* for this edition. We are still looking for a newsletter editor for our executive. If you are interested in this position, please contact me at rose@ualberta.net.

Nominations are open for the Distinguished Service Citation and the Outstanding Science Teacher Award. If there is a person that you think qualifies for either of these awards, please fill out the nomination form and forward it to me. If you would like more information about the awards, please visit http://sc.teachers.ab.ca/Awards%20and%20Scholarships/Pages/Index.aspx or http://tinyurl.com/7fdgqkl.

Finally, I am getting very excited about Conference 2012. I have seen both Bill Nye and George Kourounis speak before, and they both reminded me of my passion for science. Banff Conference Centre is always a beautiful location to visit, and registrations have been coming in steadily. The deadline for submissions for sessions is June 15, 2012; submissions can be entered at http://scienceconference.ca. Please note: I have been working on my Angry Birds Genetics session for Grade 9 science.

Have an excellent summer vacation!

Rose Lapointe

Contents

Science Council Award Nomination Form

Important: The nominee, nominator and supporter must *all* be members of the ATA Science Council. The deadline for submissions is ***September 15, 2012***.

I am making a nomination for the following award:

- ☐ Outstanding Science Teacher Award
- ☐ Distinguished Service Citation

Nominee:		
Name:		
Street Address:		
City:	Province:	Postal Code:
Home Phone:	Work Phone:	

Nominator:		
Name:		
Street Address:		
City:	Province:	Postal Code:
Home Phone:	Work Phone:	
Email Address:		

Supporter:		
Name:		
Street Address:		
City:	Province:	Postal Code:
Home Phone:	Work Phone:	

Briefly describe the nominee's contributions as an Alberta science educator (or attach a curriculum vitae):

Today's date:

Send this form to Rose Lapointe
ATA Science Council President-Elect
atascpreselect@gmail.com

From the Council

The Olympic Dream

I would like to tell you about an experience I hope every teacher can take advantage of. Those of us who have coached sports teams know the value of getting to know your students in a different setting and sharing successes and experiences outside of the classroom. Elementary school has limited opportunities for coaching, and entering the Edmonton Science Olympics for the past few years has filled the coaching gap that I have been feeling since my move to Division II.

The Science Olympics is a competition that targets students from Grades 1 through 12 and has 25 teams from schools around the region participating in science events that cover many areas of scientific study in the Alberta curriculum. Teams from Divisions I to IV compete in events that use students' science skills and ideas to come up with creative solutions to problems. Some events are prepared beforehand at their schools, and some are "mystery events" of which the students have no prior knowledge. These events are usually very creative and challenging for the students, and entertaining for spectators to watch. This year, my favourite event was the Division III football kick. Students had to build a contraption that could kick a football through wooden goalposts. There was quite a range of designs, some more successful than others, but it felt like an Eskimos game when the first team hit the uprights.

Past events that we have completed at school included building an electric dance signal, growing mystery seeds and building a parachute for an egg. This year, my Division II kids had to build a stomp rocket at school and bring it to the event. It was amazing to see this little group's ideas unfold and come together into a pretty impressive finished product. The organizers realized that they had underestimated the skill and determination of these future engineers as they watched our little rocket sail past the 20-metre measuring tape and smack into the wall of the Shaw Conference Centre. There were a few rockets that stunned the judges that day.

The hardest part of all this for the coaches is that we are not allowed to interfere. No coaching from the sidelines! I have been shooed away from the tables a few times over the past few years. It is pretty funny how this event makes me want to be a kid again and join right in. After all the events are completed, the judges tally everything up and award medals for each event and announce an overall winner. This year, I am the proud teacher of gold-medal Science Olympians. When our team was announced the overall winner, I actually let out a loud shout in front of a rather large crowd. I think I was more excited than my students. Well, maybe not, but it was pretty close. I've had teams that have done well and teams that have really messed up, but the kids always enjoy themselves and walk away with a bag full of goodies and neat contraptions, like pens that light up or battery-powered fans that dance with light.

APEGA (the Association of Professional Engineers and Geoscientists of Alberta) sponsors and hosts the Science Olympics as an activity to celebrate National Engineering & Geoscience Month. Many volunteers work together to make this an amazing event for students to participate in. Regional Science Olympics events take place in Calgary, Edmonton, Lethbridge, Medicine Hat, Peace Country, Red Deer and Cold Lake, so mark your calendar for next November when registration opens. It is an amazing experience for both you and your students. Go to www.apegga.org/K12/olympics/toc.html for further information.

Chris Sudyk
Director, Science—Elementary

Staying on the Ball in My First Year

I hope everyone has had a wonderful school year. As for me, I don't really have a whole lot to compare this year to, seeing as it is my first year in the profession. Fresh out of university, I had to make a choice: apply for my dream job or surf and scuba dive in Australia for the year. Well, I don't have to tell you which one I went with, and I am wholeheartedly happy that I did. I even scored the Division III representative spot on the Science Council executive! So, after analyzing my year so far, I'm going to say it has been nothing short of fantastic. I would like to describe to you one of the unlikely tools I have introduced into my classroom and walk you through the joyride it has taken me on so far.

To begin, there is one main factor that has really helped to make this seemingly tough year into a wonderful one—I work with great people who support me in whatever I do. I like to do things a little differently in the classroom and that is exactly what the Ponoka Composite High School is set up for. We are still in the middle of our modernization, with the math/science area having been completed at semester break. It has been transformed from a very traditional school to a 21st-century learning centre with large areas of open space and more glass than most people are comfortable with. This has challenged every teacher to use these spaces effectively, thus making us step out of some of our comfort zones.

This different way of thinking is what led me to take something that is standard in most classes and put a different spin on it. When most people walk into a classroom, the chairs are not usually the first thing they notice. In my classroom, they are always the first thing people notice because they are not chairs at all—they are stability balls.

Let's start from where this idea began. All of us in the math/science department were sitting in the principal's office discussing the furniture for our new area. As everyone else picked out the shape of the desks and the colour of the chairs, I piped up and said "What if I didn't get any chairs?" My principal looked at me, rather puzzled. "What if they sat on yoga balls instead?" He hesitated for a moment then looked at me and said, "I love it. Do some research and let me know what you find."

After a few Google searches and some phone calls I came across a company in New Jersey that specializes in putting stability balls into K–12 classrooms. I decided this was the way to go.

Before they were to be delivered I had to submit the height of all 125 students in my class, to ensure that they received a properly sized ball, and take a one-hour training session about how to implement the balls in my classroom. Over exam break, I inflated all the balls (not using the hand pump the company provided, thank goodness!) and had them lined up from biggest to smallest around the edge of my classroom when the students came back from writing their midterms during exam week.

Now for the fun part—introducing my students to their new seats for the rest of the year! The first day of the new semester was chaotic, to say the least. Most kids were very enthusiastic about the new tool in our classroom and the buzz of excitement filled our new math/science area. As we talked in class about the benefits of sitting on our stability balls, most students bounced up and down, happy and engaged. For certain, there were not any students asleep with their heads on their desks! But of course, as there would be in any group, there were a couple of students who resisted the idea. These students were given the option to sit in a chair; however, some quickly changed their minds while watching our two- to three-minute warm-ups at the beginning of class and seeing how much the others enjoyed them. Of course, one of the benefits of sitting on a yoga ball in class is that the blood in the body circulates better and provides the brain with more oxygen, making students more alert. (That and trying to physically stay on the ball!)

One strategy I use that works particularly well is when students are working independently. I like to walk around, ball under arm, and sit down right next to them to see if they require help or simply to observe. Sitting at their level and working with them, while on a ball myself, leaves the impression that I am less of a delegator and more of a partner in learning.

Much research has been done about the effects of stability balls in the classroom. For the most part, they are a positive addition to the class and students love them. I, as the teacher, also love them because nothing brings me more joy and entertainment than watching students working as they lightly, and sometimes unconsciously, bounce up and down on their yoga ball as they improve their learning and their health.

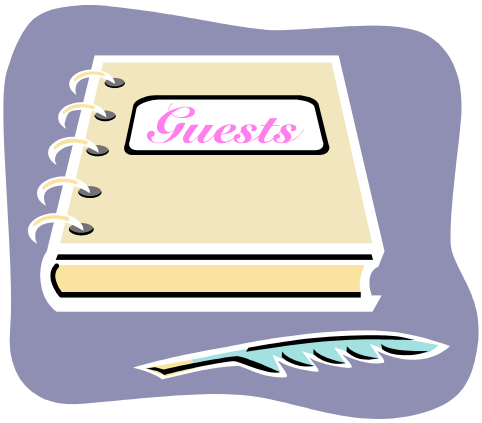
Jenelle Higgins
Director, Science—Division III

Survey of Science Teachers—Electronic or Hard Copy, and Suggestions for Speakers

Please fill in this super-short quick survey to give us your input: www.surveymonkey.com/s/QDV95KM.

Be My Guest

Having a guest speaker or presenter come into your class can yield mixed results. It is difficult to know for sure what you are going to get. Will the person engage your students in a different way, maybe giving you a bit of a break? Will you even learn something new yourself? On the other hand, you have to relinquish control of your class to someone you may not trust to deliver the highest level of classroom experience you know your students are used to, right? And where do you find these speakers? Is there a speakers directory that we don't know about? Not exactly. But there are some options out there—you just need to know where to look.



Inside Education is one of my favourite nonprofit educational organizations and is a great source of classroom guest speakers. Not only do they provide free classroom resources and professional development for teachers, but they will send staff to your school to deliver a number of presentations on a variety of science topics and grade levels. They are always entertaining, informative and free. They also provide opportunities to conduct field trips in forestry and wetlands. Their website is www.insideeducation.ca.

The **Association of Professional Engineers and Geoscientists of Alberta** (APEGA) is widely known across the province for its outreach programs. Teachers can contact APEGA for a number of services including science fair judges, career presentations and, of course, science classroom presentations. APEGA and the Alberta Science Literacy Association have merged to provide a new Scientists & Engineers-in-the-Classroom program, which matches enthusiastic scientists, engineers and technologists with requests for curriculum-related presentations from schools in the Calgary and Edmonton areas free of charge. For more information, go to www.apegga.org.

The Alberta Science Literacy Association operates science networks across the province; one of their key supports is to provide classroom presentations and expert professionals for your classroom. The following networks can be contacted:

- **Praxis—Science and Technology Hotline (Medicine Hat)**, www.praxismh.ca
- **Grande Prairie and Area Environmental Sciences Education Society (GPESES)**, www.gpeses.com
- **Central Alberta Science Network (CASN)**, www.casciencenet.ca
- **Calgary Science Network**, www.calgarysciencenetwork.ca
- **Edmonton Science Outreach Network**, www.sciencehotline.ca
- **Southern Alberta Technology Council (Lethbridge)**, www.satclethbridge.ca

Each organization offers a variety of educational resources for teachers, but each one is dedicated to bringing in science experts from the community.

Discover E is a group from the University of Alberta Faculty of Engineering that brings engineering students to the classroom to deliver various elementary and junior high science workshops. These come at a cost but are directly linked to the curriculum, and experiments and activities are delivered by enthusiastic and knowledgeable staff. There is also a bursary application available. For more information, go to www.discovere.ualberta.ca.

The **Let's Talk Science** Partnership Program, of the University of Alberta, also brings a university student volunteer into your classroom to conduct curriculum-aligned, hands-on science activities with your students at no cost. The website is www.letstalkscience.ca.

There are guest speakers all around us, and you can find them through these organizations and many more. Sometimes a source may be closer than you realize. Maybe it is your neighbour who is a pilot, someone's uncle who is a beekeeper, or your student's dad who teaches at NAIT. One thing is certain—students love it when you bring in a guest speaker to class. And most people are more than willing to share their expertise.

Chris Sudyk
Director, Science—Elementary

Editor's note: websites accessed May 15, 2012.

We Need Volunteers for Our Executive!

Nominations are now open for elections at AGM in November. The following positions will be available:

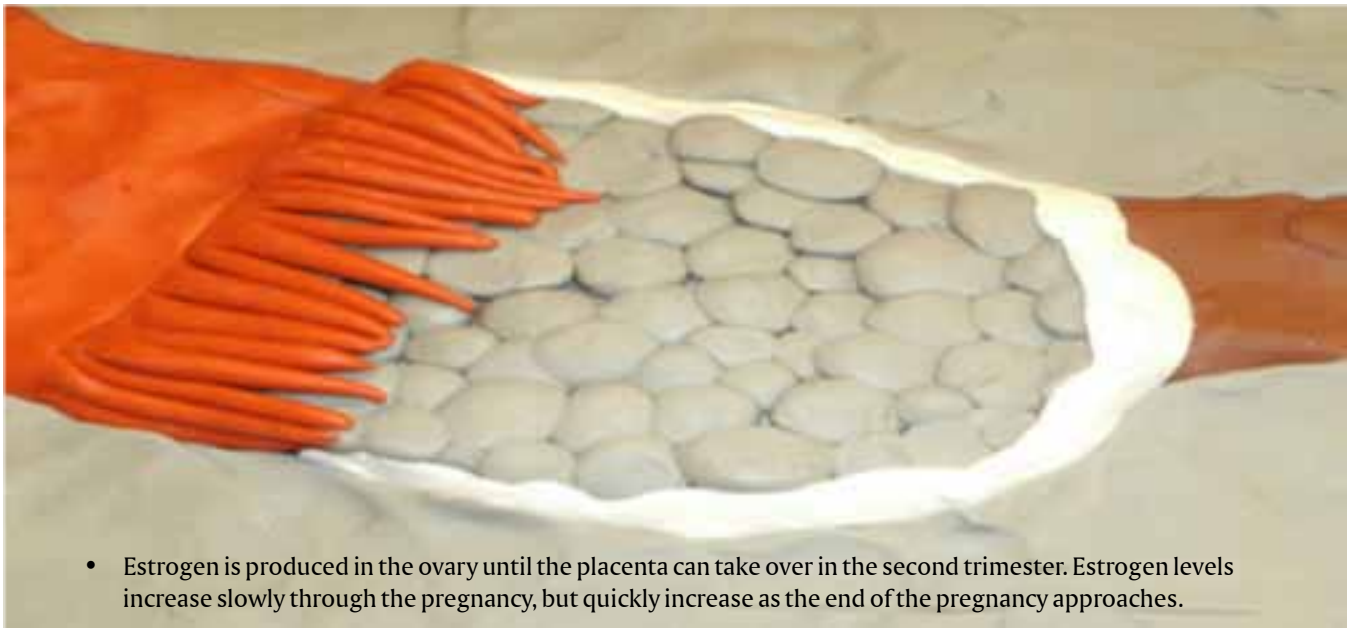
- Secretary
- 2013 Assistant Conference Director
- Physics Director
- Division IV Science Director
- Newsletter Editor

Why should you volunteer? Excellent professional development opportunities, and executive members attend the conference at no cost to themselves! For more information, go to http://sc.teachers.ab.ca/Executive%20Corner/Pages/Executive%20Nomination%20Form.aspx or http://tinyurl.com/885v7rx.

Learning Biology by Engaging Both Sides of the Brain.

In education, activities often focus on engaging only one side of the brain. By incorporating crafts into biology lessons, students actively use both sides of their brain to focus on a topic. Using Play-Doh works really well for this because it can be reused, it is inexpensive and it allows students to use hands-on learning—they can create models when restraints prevent them from working with the real object, such as the reproductive system. Some of the activities or projects that work well with Play-Doh are

- using Play-Doh to make a claymation about "Conception to Birth," in which students take still shots of the entire development of the body, including a screen shot of an explanation of the hormones involved in pregnancy, etc. Many learning outcomes from the Biology 30 reproduction unit can be covered with this project;
- using Play-Doh to model the different parts of the brain and nervous system;
- using Play-Doh to build the different organs and systems found in the human body system (Biology 20); and



- Estrogen is produced in the ovary until the placenta can take over in the second trimester. Estrogen levels increase slowly through the pregnancy, but quickly increase as the end of the pregnancy approaches.

- using Play-Doh to build chloroplasts and the organelles found within to work with photosynthesis and cellular respiration.

Be creative! Play-Doh can be used for many different hands-on activities.

Here is an easy-to-make recipe for Play-Doh.

Ingredients

2 cups flour
1 cup salt
2 tablespoons alum
1 cup water
2 tablespoons oil
liquid food colouring

Preparation

- Pour dry ingredients into a large pan and stir together.
- Stir oil and food colouring into the water in a separate bowl.
- Pour the liquid ingredients into the dry ingredients while mixing.
- When the dough becomes stiff enough, squeeze and knead the dough with your hands.
- Add more flour if dough is sticky. Separate and knead in food colouring if desired.
- Refrigerate for best freshness.

A great website for some other crafty, hands-on activities is http://faculty.washington.edu/chudler/neurok.html. This site includes great activities to engage both the creative right side of the brain and the analytical left side of the brain. Some activities include

- making a "thinking cap" and
- reusing odds and ends such as old CDs and string to make neuron models.

Danika Richards
Director, Biology

Summer Institute for Elementary Teachers

I was very fortunate to take part in a great professional development opportunity in Ottawa last summer. The Summer Institute for Elementary Teachers, which took place at the Canada Science and Technology Museum, was a three-day program meant to encourage elementary teachers to increase students' interest in science, technology, engineering and math by integrating interactive activities and challenges to capture student interest. The institute focused on enhancing our personal interest, understanding and enthusiasm for teaching inquiry-based learning, while looking at strategies for critical thinking and problem solving.

During our three days, we attended sessions ranging from science literacy to new frameworks for teaching inquiry. In addition to the sessions, we experienced several activities like a behind-the-scenes tour of the museum and visiting a local cheese factory where I had the best poutine I'd ever tasted. We also went on several field trips in the Ottawa area. The highlight for me, however, was walking through the 9 m by 9 m wind tunnel facility at the National Research Council campus. It was definitely one of the coolest things I've ever experienced. Participants of the Summer Institute were granted access to tour the facility and walk right through this amazing place where aerodynamic testing is carried out.

After the success of the inaugural program last summer, the Canada Science and Technology Museums Corporation (www.technomuses.ca) is pleased to host its second Summer Institute for Elementary Teachers in Ottawa, from July 17 to 19, 2012. All ATA Science Council members are invited to apply. The registration fee of $120 includes workshop materials and on-site meals during the program; affordable accommodations are available.

For someone who had never been to our nation's capital before, it was more than just a conference. Ottawa is a great city to visit, and the institute is a wonderful professional development experience.

Program details and application form are available online at www.sciencetech.technomuses.ca/english/schoolzone/2012-teacher-institute.cfm or http://tinyurl.com/dykqpcl. Download the form, complete it and e-mail it to education@technomuses.ca. The application deadline is June 18, 2012. You can also phone 613-949-7864 for further information.

Chris Sudyk
Director, Science—Elementary

Summer Institute for Elementary Teachers

Inspiring Canada's Future Innovators

Physics 20 Resources

Here are two low-cost, easy-to-do labs for Physics 20. In the first, the students will investigate the effect of mass and surface effects on the coefficient of friction; in addition, they will reinforce their understanding of inclined planes. In the second, students will investigate the factors that affect the length of a pendulum. This lab is best done as an introduction to simple harmonic motion.

Both of these resources are available as electronic copies on the TNET resource database for Science Council members at www.sc.teachers.ab.ca.

Leon Lau
Director, Science—Division IV

Determining the Coefficient of Friction Activity

Purpose

To determine the coefficient of friction of a coin and different surfaces

Materials

Textbook
Protractor
Double-sided tape
Protractor
Three coins (quarters, loonies, or toonies)
Sandpaper
Scale or balance

Procedure

1. Using the scale or balance, determine the mass of the coin to be used.
2. Place a textbook flat on the desk and put a coin at one end.
3. Slowly raise the textbook at an angle until the coin begins to move.
   a. When it moves, determine the angle the book makes with the desk.
   b. Repeat two more times to get an average value.
4. Repeat steps 2 and 3 with another coin placed on top of the first. (Use a small piece of double-sided tape to tape the faces of the coins together.) Repeat again with two coins on top of the first.
5. Tape a piece of sandpaper onto the textbook and repeat steps 2 to 4.

Observations

Mass of one coin: _____
Surface: bare textbook

	Angle at which coin first moved			
	Trial 1	Trial 2	Trial 3	Average
One coin				
Two coins				
Three coins				

Surface: sandpaper

	Angle at which coin first moved			
	Trial 1	Trial 2	Trial 3	Average
One coin				
Two coins				
Three coins				

Analysis

1. In terms of $F_{g||}$ and F_f, what happened at the moment the coin started moving?
   a. What type of friction was overcome?

2. The following questions will guide you through the calculations required to determine the coefficient of static friction on each surface.
   a. Draw a free body diagram of the situation.

   b. Identify the forces acting in the parallel direction and state F_f in terms of F_g and Θ. Determine the value of F_f.

   Bare textbook With sandpaper

   c. Identify the forces acting in the perpendicular direction and state F_N in terms of F_g and Θ. Determine the value of F_N.

   Bare textbook With sandpaper

   d. Determine the coefficient of static friction.

   Bare textbook With sandpaper

3. On a separate sheet, repeat the calculations in 2b–d using the data obtained from using 2 and 3 coins.
   a. Does the coefficient of static friction change significantly (not due to errors) with a different number of coins?
   b. Does it change when using a different surface?

Period of a Pendulum Lab

Objective

To determine which of the following factors affect the period of a pendulum:

- The length of the pendulum
- The mass of the pendulum bob
- The size of the swing, or amplitude

Hypothesis, Material and Procedures

Supply your own. Record it in the final lab report.

Observations

Change in mass

Mass	Length	Deflection	Time for 10 full swings (s)			Period (s)
			1st trial	2nd trial	Average	
20 g	50 cm	15°				
50 g	50 cm	15°				
100 g	50 cm	15°				
150g	50 cm	15°				
200g	50 cm	15°				

Change in deflection

Mass	Length	Deflection	Time for 10 full swings (s)			Period (s)
			1st trial	2nd trial	Average	
20 g	50 cm	5°				
20 g	50 cm	10°				
20 g	50 cm	15°				
20 g	50 cm	20°				

Change in length

Mass	Length	Deflection	Time for 10 full swings (s)			Period (s)
			1st trial	2nd trial	Average	
20 g	50 cm	15°				
20 g	60 cm	15°				
20 g	70 cm	15°				
20 g	80 cm	15°				
20 g	90 cm	15°				

Analysis

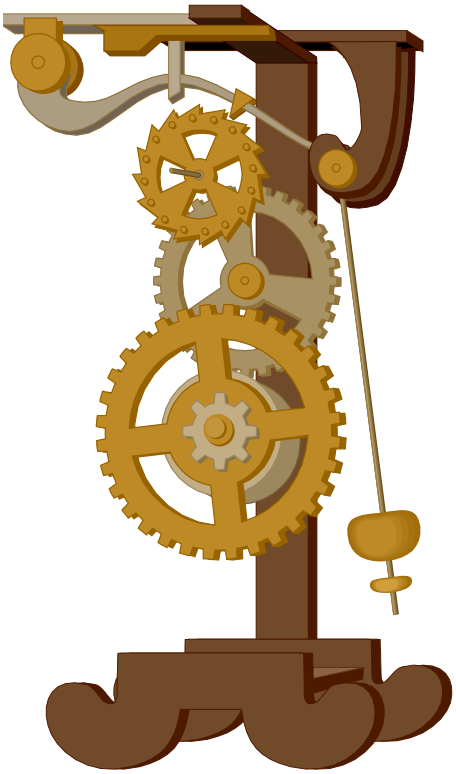
Use half a sheet of graph paper each to draw three graphs, one for each table. Connect the data points with a line of best fit. Remember to put the manipulated variable on the *x*-axis and the responding variable on the *y*-axis. Give each graph a proper title and axis labels.

Look at the line of best fit. State the relationship (directly proportional, squared, root and so forth) between period and each of the variables in each of the graph.

Predict a formula for the period of a pendulum based on the results of this lab. Use the relationship between each variable to help.

Conclusions

Which factor(s) determine the period of a pendulum?



Solar Eclipse and Transit of Venus

There are times in our lives when we are able to share memorable moments with our students, and we are fortunate to have two such events in a two-week span. On May 20, there will be a partial solar eclipse visible from Alberta. Many of us and our students have never observed this amazing natural phenomenon before, and we who teach Grades 6 and 9 have a unique opportunity to share this event with our students.

If you are in the Calgary region, the eclipse begins around 6:00 PM, peaks around 7:10 PM, when you will see a little more than half of the sun obscured by the moon, and ends at about 8:20 PM, depending what part of the province you are viewing from.

Solar eclipses are rare events, but a truly once-in-a-lifetime opportunity is coming up soon for all astronomy enthusiasts. On June 5, in the early evening, we will be able to witness a transit of Venus, which is when our sister planet passes directly between Earth and the sun. We will be able to observe the distant planet as a small dot moving slowly across the sun. This rare alignment has been used to measure the size of our solar system. In fact, it was one of the reasons for James Cook's voyage to the south Pacific in 1769.

http://science.nasa.gov/venus-transit

The transit happens in pairs—the last one happened in 2004. It was cloudy in our neck of the woods eight years ago, so cross your fingers and hope for clear skies on June 5. This will be the last transit of Venus in our lifetimes, because the next one won't happen until 2117.

Information such as times, safe viewing, and even a phone app are available at www.transitofvenus.org, and there are many other websites with information on the event.

Please remember: **never look directly at the sun through a telescope or binoculars**. Proper solar viewing methods and equipment are a must for safe viewing of this event.

Chris Sudyk
Director, Science—Elementary

Editor's note: Due to printing schedules, the Alberta Science Teacher *could not be mailed before these celestial events had happened. Because of their significance, however, we have included this article.*

Science Teacher News

NASA News

It's always a good idea to maintain a healthy respect for the Sun, especially if you are in charge of operating any satellites, which can be badly damaged by high-energy charged particles from solar storms. Thankfully, many satellites can now be put into a temporary safe mode when necessary. However, operators must know when to flip the safety switch. The GOES satellites are in geostationary orbit high above most other satellites. Along with keeping an eye on Earth's weather, the GOES satellites also keep an eye on the Sun's antics and give warning when bad space weather threatens other satellites. "Shields Up!" is a new game on the SciJinks website, in which the player's job is to keep three separate satellites safe from random blasts of damaging rays and particles from the Sun, while still keeping the satellites operating as much of the time as possible. Read the story of a super solar storm in 1859, and play "Shields Up!" at http://scijinks.gov/shields-up.

Have you ever wondered how astronomers can predict when there's going to be an abundance of shooting stars in the night sky? Showers of meteors, the scientific name for shooting stars, occur predictably several times a year, usually peaking within the same two- or three-day period. So what causes them? Why do they seem to come from the same part of the sky? What's the best way to see them? Visit http://spaceplace.nasa.gov/meteor-shower and get ready to enjoy the next show.

Check out our great sites for kids:

- http://climate.nasa.gov/kids
- http://scijinks.gov
- http://spaceplace.nasa.gov

Laura K Lincoln
Outreach Coordinator
Jet Propulsion Laboratory M/S 606-100
California Institute of Technology

All Things Marine Summer Institute

Our Classroom Is the Amazing Bay of Fundy!

Do you want to include more ocean and marine examples into your classroom? Look no further than the All Things Marine summer institute for teachers offered by the Huntsman Marine Science Centre.

The Huntsman is located in the busy resort community of St Andrews by-the-Sea, New Brunswick, on the shore of the St Croix estuary. Nearby, you'll discover a diversity of marine mammals, seabirds and invertebrates living in and around the bountiful waters of the beautiful Bay of Fundy—home of the world's highest tides. Huntsman is a teaching and research facility that offers students of all ages hands-on experience in field biology through excursions, lab facilities, the new Fundy Discovery Aquarium and trips on its research vessel, the *Fundy Spray*.

The 2012 Summer Institute runs July 16–20 and is a cross-curricular maritime institute with connections between biology, art, history, culture and even cooking! Join us as we explore the unique environment of the Bay of Fundy and the diversity of life it supports. This institute is open to teachers and friends. To see a sample schedule, as well as more information about this institute, go to www.huntsmanmarine.ca, click on Education, select Public Programs—Summer Field Courses from the list on the right and scroll down to All Things Marine.

Sampling the bounty of the bay while on board the Huntsman research vessel, the Fundy Spray.

The all-inclusive fee for each course is $670. The fee includes four nights' dormitory accommodations, all meals shown on the schedule, instruction by the Huntsman teaching staff, boat and lab fees, and taxes. All you need to do is find your way to the Huntsman in St Andrews.

To assist teachers, we have added a new feature to our website: a listing of professional development funding. Tapping into these funds may help teachers cover some of the costs to attend the institute.

For more information on this institute or to apply, visit the above website, call 506-529-1220 or e-mail tdean@huntsmanmarine.ca.

Editor's note: material supplied by Huntsman Marine Sciences Centre; minor amendments have been made in accordance with ATA style.

Observing the plankton collection.

MEd Cohort in Elementary Science Education

A Science Leader in Every Elementary School!

The University of Alberta Department of Elementary Education plans to offer an MEd cohort in elementary science commencing July 2013. The timing of this cohort is important: beginning in 2015, Alberta is expected to have a new elementary science program. Cohort graduates will be prepared to help their schools implement this important program.

For more information about the cohort, please contact Dr Brenda Gustafson (brenda.gustafson@ualberta.ca) or Dr Jerine Pegg (jerine.pegg@ualberta.ca).

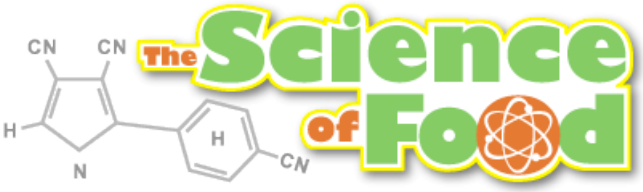
The Science of Food

We are pleased to announce the launch of a new curriculum module on the Long Live Kids microsite, The Science of Food.

In partnership with the Canadian Sugar Institute (CSI) and Egg Farmers of Canada (EFC), The Science of Food consists of important education resources on biology and health. Both CSI and EFC provided us with integrated curriculum resources for The Science of Food, incorporating current scientific information and activities that will help educate children about the importance of a balanced and nutritious diet. Resources include lesson plans, interesting but little-known facts and additional classroom activities for educators to share with their students. The concept and content for this module were vetted by a national teacher advisory panel coordinated by Paton Publishing on behalf of Concerned Children's Advertisers (CCA).

CCA thanks CSI and EFC for their generous support and time on this important project. We are confident that educators will find these resources valuable, innovative and engaging. The Science of Food is another great example of how CCA is reaching and teaching Canadian children.

Editor's note: minor amendments have been made in accordance with ATA style. For more information on CCA, visit www.longlivekids.ca.



Safe Drinking Water Foundation Programs

The Safe Drinking Water Foundation Has Seven Environmental Education Programs Available for You!

Attention, teachers! Are you looking for exciting, hands-on, cooperative learning activities for your students to end the school year on a high note? Are you looking for educational kits to take with you on field trips? Then please read through the following descriptions of the Safe Drinking Water Foundation's (SDWF) environmental education programs to learn more.

The following programs involve kits that are often sponsored:

- **Operation Water Drop (OWD)** is SDWF's longest-standing education program, distributed to hundreds of schools every year and rated very highly by educators everywhere. Elementary teachers demonstrate to students how to test their community's drinking water for 8 different parameters and compare their results to the Guidelines for Canadian Drinking Water Quality. High school students conduct hands-on tests for 13 different parameters and compare their results to other urban and rural treated drinking water as well as to a raw source water sample. Every OWD kit includes the DVD *Downstream*. Question and answer sheets as well as lesson plans that accompany this DVD are available on the SDWF's website, www.safewater.org.
- **Operation Water Pollution (OWP)** is taught in science and social studies, and educates students about the various forms of water pollution, how water pollution affects the world, how it is cleaned up and what students can do to help. Each kit contains one digital total dissolved solids (TDS) meter and one digital pH meter, and students learn why TDS and pH are important factors to be monitored and why they should be kept at appropriate levels. Both meters are reusable for at least two years. Every OWP kit includes the DVD *Crapshoot*. Question and answer sheets as well as lesson plans that accompany this DVD are available on the SDWF's website.
- **Operation Water Biology (OWB)** is taught in high school science, chemistry and biology, and covers several different aspects of drinking water treatment. The major topics are chlorine, chloramine, ammonia and iron. Students participate in hands-on activities and also learn about biological water treatment, a water treatment method that is more effective and more environmentally friendly than conventional (chemical) water treatment.

The following programs are available free of charge on the SDWF's website:

- **Operation Water Flow (OWF)** is for students in Grades 6–12 and gives students a greater understanding of economic, social and environmental concerns surrounding water issues in Canada. OWF can be taught in math, biology, chemistry, science and social studies.
- **Operation Water Spirit (OWS)** supports and encourages a greater understanding of Aboriginal culture and beliefs related to water issues. There are many stories included in all of the different grade levels and they are now available in Cree, in both written and audio versions.
- **Operation Water Health (OWH)** is intended for students in Grades 5–10 and gives them an

opportunity to investigate health issues such as waterborne illnesses and contaminated water. OWH also encourages students to do their part to keep water safe.

- **Operation Community Water Footprint (OCWF)** enables students and others in communities to calculate their community's water footprint—that is, how much source water their community requires to produce one litre of treated drinking water. They can then use the SDWF's "Put Your Community on the Map" Web 2.0 application to inform others of their community's water footprint, the drinking water issues that exist in their communities and what they are doing in order to improve their community's drinking water issues.

Many teachers have used the SDWF's environmental education kits on field trips such as canoe trips and visits to wetlands.

Most of the educational programs are available in French, and OWS and OWH are also available in Cree. The SDWF often receives funding from sponsors to send kits to schools free of charge for them, so contact SDWF today and sign up on the waiting list for sponsored kits. The sooner you sign up, the greater the chance that you will receive sponsored kits.

For information about any of the SDWF's programs, go to www.safewater.org, e-mail info@safewater.org, phone 306-934-0389 or fax 306-934-5289.

Award Nominations Are Open

Do you know an outstanding science teacher? Or would you like someone to be recognized for his or her service to science education? We are accepting nominations now, and the winners will be announced at the annual general meeting, at Conference 2012. For more information and the nomination form, go to http://sc.teachers.ab.ca/Awards%20and%20Scholarships/Pages/Index.aspx or http://tinyurl.com/7fdgqkl.

Alberta Innovates – Health Solutions Summer Science Teacher Workshops

This Year's Topic

Diseases: Biology and Current Research

This **FREE** 3-day workshop will cover the causes of various diseases and what current research has revealed about potential therapies. The diseases will span the different organ systems covered in the Biology 20 and Biology 30 Alberta curriculums, i.e. the cardiovascular, nervous, endocrine, and immune systems. Genetic components of diseases will also be addressed.

Presentations by University researchers and hands-on activities will help you better understand curriculum topics and offer insights into Alberta cutting-edge research and therapies. After participating in this workshop, you will be able to draw upon personal experiences and provide your students with the most recent information that is years away from being in textbooks.

The workshops will run:

- **University of Alberta** – July 10th-12th, 2012
- **University of Calgary** – July 17th-19th, 2012

For more information about the workshops, please contact:

- **Northern Alberta** – Dr Virginie Martin, virginie.martin@albertainnovates.ca
- **Southern Alberta** – Dr Zenobia Ali, zenobia.ali@albertainnovates.ca

Alberta Innovates—Health Solutions
Summer Science Teacher Workshop
2012 Registration Form

Workshop you would like to register for (please check those that apply):
University of Alberta Workshop _____ (July 10 – July 12, 2012)
University of Calgary Workshop _____ (July 17 – July 19, 2012)

Full Name: _____

Home Address: _____

City / Postal Code: _____ **Home Telephone: ( )** _____

Email Address: (hm) _____ **(wk)** _____

School: _____

School Address: _____

School Telephone: ( ) _____ **Extension:** _____

High School Science Courses Taught: _____

_____

Postsecondary Education (please include year degree obtained): _____

_____

Have you previously taken any laboratory-based professional development courses?

Yes ☐ No ☐ **If yes, please list courses and completion dates**

_____

_____

Are you travelling from out of town and do you require accommodation at the University of Alberta or University of Calgary residence for the duration of the Heritage Science Teacher Workshop? If you are attending both workshops, please indicate if you will require residence accommodation for both.

Yes ☐ No ☐ _____

Residence accommodation is provided free of charge; however, we need your credit card number to guarantee this. In the event that you do not show up, the credit card will be charged $25.

Type of credit card _____ **Credit card number** _____ **Expiry date**_____

Name on credit card_____

Are you able to commit to attending all 3 days of the workshop? Yes ☐ No ☐

**Send to: Alberta Innovates – Health Solutions
G166 Health Sciences Centre
3330 Hospital Drive N.W.
Calgary, AB T2N 4N1
Or fax (403) 210-8150
by Friday, June 29, 2012

Science Council Executive 2011/12

President
Kevin Klemmer
Bus 403-243-8880
kklemmer@shaw.ca *or*
kwklemmer@cbe.ab.ca

Past President
Erick Noriega
Bus 403-777-7350
eenoriega@cbe.ab.ca *or*
enoriega@atasc.ab.ca

President-Elect
Rose Lapointe
Bus 780-594-3386
rose@ualberta.net

Secretary
Brenna Toblan
Bus 403-243-8880
brtoblan@cbe.ab.ca *or*
toblanbr@telus.net

Treasurer
Joan Sicotte
Bus 403-500-2080
joansicotte@gmail.com *or*
joan.sicotte@cssd.ab.ca

Conference Codirectors 2012
Daniel Espejo
Bus 780-989-3000
daniel.espejo@ualberta.net

Don McLaughlin
Bus 403-500-2098
don.mclaughlin@cssd.ab.ca *or*
ddmclaugh@shaw.ca

Conference Codirectors 2013
Trinity Ayres
Bus 403-500-2107
trinity.ayres@cssd.ab.ca *or*
ayres@shaw.ca

David Gowans
Bus 403-500-2850
david.gowans@cssd.ab.ca

DIRECTORS

Division III
Jenelle Higgins
Bus 403-783-4411
jhggins@wolfcreek.ab.ca

Chemistry
Rekha Dhawan
Bus 403-230-4743
rddhawan@yahoo.com

Biology
Danika Richard
Bus 780-798-3840
danika.richard@nlsd.ab.ca

Physics–Division IV
Cliff Sosnowski
Bus 780-435-3964
sosnowskic@ecsd.net

Science–Elementary
Chris Sudyk
Bus 780-464-3330
chris.sudyk@eips.ca *or*
csudyk@shaw.ca

Science–Division IV
Leon Lau
Bus 403-614-6178
lhlau@cbe.ab.ca *or*
leon.lau@gmail.com

Journal Editor
Wytze Brouwer
Bus 780-492-1074
wytze.brouwer@ualberta.ca

Newsletter Editor
vacant

Technology Director
Deepali Medhekar
mrs.medhekar@gmail.com

Website Manager
Rose Lapointe
Bus 780-594-3386
rose@ualberta.net

Postsecondary Liaison
Brad Pavelich
pavelich@mhc.ab.ca

Alberta Education Liaison
Amaya Ortigosa
Bus 780-644-3886
amaya.ortigosa@gov.ab.ca

PEC Liaison
Mark Ramsankar
Bus 780-469-0426
mark.ramsankar@teachers.ab.ca *or*
wenmar27@telus.net

ATA Staff Advisor
Peter Kalis
Bus 780-447-9499 *or*
1-800-232-7208
peter.kalis@ata.ab.ca

REGIONAL COUNCILS

Calgary Junior High
Joy Bader
Bus 403-243-8880
jobader@cbe.ab.ca

Edmonton Biology
Morrie Smith
Bus 780-452-4343
morrie.smith@epsb.ca

Edmonton Chemistry
Dan Leskiw
Bus 780-408-9000
dan.leskiw@epsb.ca

Edmonton Physics
Vlad Pasek
Bus 780-465-6457
pasekv@ecsd.net

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Please address all correspondence to the president-elect, Rose Lapointe, at rose@ualberta.net. All manuscripts should be submitted electronically in Microsoft Word format. Pictures or illustrations should be clearly labelled and placed where you want them to appear in the article. A caption and photo credit should accompany each photograph.

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