The Alberta Science Teacher

Volume 27, Number 3

April 2007

From the Editor

I am delighted as I await the green grass and glowing sun of spring. Teachers' convention in Edmonton has come and gone, and spring break is upon us. It is a time for regrowth, a burst of energy. As I build my resource collection and look for the next great lesson idea, I cannot help but think of report cards. Fortunately, I look at the picture on my computer desktop (this issue's cover photo), and I realize that sunny outdoor adventures are not that far away.

I took the cover photograph during a trip to southern British Columbia. Floating along the river on an air mattress, I revelled in the beauty of the natural surroundings. In a country as great as ours, beautiful landscapes and diverse habitats are anything but scarce. In this issue of *The Alberta Science Teacher,* you will learn various ways you and your students can connect with nature. Deepen your understanding of the need for balance between the demands of humans and the demands of nature as you tour the Inglewood Wildlands. Learn about weather and climate change from the experts through video conferencing from Environmental Distance Learning.

As editor, I have been learning a great deal of my own. I plan to introduce a new feature to facilitate dialogue about various scientific and pedagogical subjects. I will say a few words about that initiative below. Please watch this space for signs of what is to come in future issues.

In the Next Issue

The next issue of *The Alberta Science Teacher* will feature a new section, Speaking of Science. Submit your questions about teaching or science, and hundreds of Alberta science teachers will help you find the answers! I invite you all to collaborate by helping answer questions about lesson plan ideas, science topics and finding new ways to amaze your students.

The format is simple: I will publish questions sent to me and then leave the door open for other teachers to respond. E-mail your questions to andilynn.bender@gmail.com (you may remain anonymous, if you prefer).

I can't wait to hear from you!

Andi-Lynn Bender

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From the Council

President's Message

Ah, spring! By far, my favourite time of year! I love opening the windows for the first time, letting the cool air come in to clear the mustiness of winter from my home and my classroom. I love starting seedlings inside and watching them grow until it's warm enough for them to be transplanted outside. I love walking out my door in the morning and coming home in the evening when it's light out. (I live in northern Alberta. In the winter, there are many days I don't see sunlight at all!) Most of all, I love sharing my love of the season with my students.

I first attended teachers' convention when I was a student teacher. I got to see the late Lois Hole's presentation on using plants in the classroom. In her wonderful, grandmotherly way, she offered us advice on which plants are good for a variety of situations, and which plants might not be so good. She emphasized that we should not be afraid to have some green in our classrooms; to bring plants into the classroom is to invite nature in. I remember her telling us to let our students see us (or, better yet, help us) take care of the plants, take care of nature. Discuss with students when things go wrong with the plants. Help them understand how plants grow and live; help them understand and take care of a part of nature. It doesn't matter if you teach elementary or secondary, or bio, chem or physics. If your classroom has a window, you have a place for a plant. (Besides, plants give off oxygen, and some days my brain can use all the help it can get!)

I truly believe that Lois Hole would have enjoyed the theme of Conference 2007: "Planet Earth: Ours to Understand and Cherish." It promises to be a conference she would have been proud of. The conference committee has lined up fabulous keynote speakers, and the sessions are coming together quickly. We will offer more elementary sessions than usual, and a mix of practical and theoretical presentations. There promises to be something for everyone! Best of all, the early-early-bird discount of $75 off the registration fee has been extended until April 13, so register soon at www.atasc.ab.ca. I look forward to seeing you all at the conference in November!

Colleen Yoshida

Conference 2006 Evaluation

The Science Council thanks everyone who took the time to complete a Conference 2006 evaluation.

The winner of the free registration to Conference 2007 is Anne Marie MacEachern from Calgary. Congratulations!

Executive Positions Available

The Science Council is seeking nominations for the following executive positions:

- President-elect
- Secretary
- Treasurer
- Assistant conference directors
- Early childhood director
- Division IV director
- Physics director
- Technology director
- Postsecondary representative

To nominate someone, please fill out the online form at www.atasc.ab.ca/nominationsform.htm by **July 1**.

Conference 2007 Update

"Planet Earth: Ours to Understand and Cherish"
November 16–18
Fantasyland Hotel, Edmonton

Planning for Conference 2007: "Planet Earth: Ours to Understand and Cherish" is well under way.

Highlights

- Five top-class keynote speakers (with four of those presentations being plenary)
- All workshops and sessions on site
- More workshops and sessions for elementary teachers
- Free tours of the Dinosaur Adventure museum in West Edmonton Mall on Friday (suitable for elementary and junior high teachers)
- Daily draws for valuable prizes donated by sponsors and displayers
- Prizes for completing your exhibitors' "Stampede card"
- All exhibitors in one area
- Free morning coffee and snacks
- Friday-night banquet and entertainment tickets for only $10 per person
- Friday-night entertainment provided by the mad scientists from MacEwan College
- Free Sunday brunch for three-day conference delegates
- Choice passes can be purchased for the World Waterpark or Galaxyland
- 25 per cent discount at Jubilations Dinner Theatre on Saturday night (booking information will soon be available on the conference website)

Keynote Speakers

- Gilles Leclerc, director general of the Space Technologies Branch of the Canadian Space Agency
- David Schindler, Killam Memorial professor of ecology at the University of Alberta
- Brian Keating, of the Calgary Zoo
- Frank Sulloway, a noted Darwin scholar and professor at the University of California, Berkeley
- Bob McDonald, host of CBC Radio's *Quirks & Quarks*

Registration Discounts

Early-Early-Bird Discount

Please note that you can still get a $75 discount on your three-day registration if you register and pay by **April 13**. You will also be eligible for the following draw prizes, kindly donated by the Fantasyland Hotel:

- A free night in a theme room
- Dinner for two at the Fantasyland Grill
- Two passes to the World Waterpark

The winners will be posted on our website. Prizes can be collected at the registration desk.

Early-Bird Discount

Delegates who register and pay by **September 30** will receive a $50 discount.

For more information on Conference 2007, go to www.atasc.ab.ca/conference/. You can also register or submit a session proposal online.

We look forward to seeing you there!

Gillian Vas,
Conference 2007 Director

Education Updates

Online Resources for Test Preparation

June is fast approaching, and with it final exams. Both students and teachers can take advantage of a variety of resources available on the Internet to help them prepare.

Student Resources

Several sites provide students with information on how to study.

How-To-Study.com (www.how-to-study.com) provides students with free information on study skills, strategies and tips for all subjects. The information is concise and easy to understand, and it is presented in a format attractive and interesting to junior high students. Printer-friendly versions are available, and students can easily e-mail them to friends.

Virginia Tech provides information not only on how to study but also on scheduling time, taking notes, and reading and remembering (www.ucc.vt.edu/stdysk/stdyhlp.html). This material is more comprehensive and detailed, and it is written for a high school and post-secondary audience.

One of the most comprehensive sites is Study Guides and Strategies (www.studygs.net). The research-based information is presented as a series of tipsheets. Topics covered include preparing, learning, studying, classroom participation, learning with others, online learning and communicating, reading skills, preparing for tests, taking tests, writing basics, types of writing, math, and science and technology. These tipsheets are useful for both students and teachers, and are available in English, French and several other languages.

Teacher Resources

Not sure if that essay has been plagiarized? Select a suspicious sentence and type it into 2Learn.ca's Plagiarism Sleuth, available at www.2learn.ca/mapset/safetynet/plagiarism/sleuth/stringsearchnew.html. If the work was taken from the Internet, chances are excellent that the Plagiarism Sleuth will find it!

Need to put together a rubric? No problem! Launch 2Learn.ca's tool for building a rubric (available at www.2learn.ca/construct/rubric/tlcrubric.html), fill in the required fields and print a formatted copy of your rubric in minutes.

Building a final exam and need a few more questions? Alberta teachers can set up a free account with Tools4Teachers (www.tools4teachers.ca/t4t/). After your teaching qualifications have been validated, you can access a site containing Distributed Learning Resources Branch lessons, assignment books (with answer keys) and sample final exams (with answer keys).

For teachers of Grades 6, 9 and 12 students, Alberta Education provides a wealth of information to help prepare students for government exams. For Grades 6 and 9 students, the provincial achievement test program's general information bulletin, subject-specific information bulletins, and previous achievement tests and answer keys are available at http://ednet.edc.gov.ab.ca/k_12/testing/achievement/. For Grade 12 students, the diploma exam program's general information bulletin, subject-specific information bulletins, information for students planning to write diploma exams, and previous diploma exams and answer keys are available at http://ednet.edc.gov.ab.ca/k_12/testing/diploma/.

The Buzz on Climate Change

In the last year, climate change has been at the forefront in the media. Not only has this issue been on the minds of average Canadians, but it is also being used in the platforms of many politicians. In fact, Stephen Harper recently announced a $1.5 billion green fund to help provinces fight pollution and greenhouse gases. Is it just a coincidence that *An Inconvenient Truth* was recently released on DVD?

This 100-minute film features a fascinating presentation by former US vice-president Al Gore. It is a stark reality check of the climate change we are facing today, and it makes shocking predictions about the future.

Many educators have already shown *An Inconvenient Truth* in the classroom. To aid teachers in optimal use of the film, an incredible resource has been created. AIT in the Classroom is available at www.participate.net/educators/node/. After creating an account for free, you can access all the resources.

The lesson Think Globally, Act Locally sets the stage for a week-long program that involves a series of DVD chapters detailing the science of global warming and culminating with a focus on the Kyoto Protocol.

A 59-page document provides detailed one-day and one-week lesson plans. For both options, the site provides or references many reproducibles, Internet sites, ideas for group discussion, assessment rubrics and enrichment options. Although the site is US-based, it is a natural fit for the Alberta curriculum, especially the climate unit in Science 10.

For a detailed 20-page summary on climate change from the Intergovernmental Panel on Climate Change, visit www.ipcc.ch/pub/spm22-01.pdf.

Inglewood Wildlands

The Inglewood Wildlands is a 34-hectare site in Calgary, not far from the Bow River. The land has changed dramatically in the 100 years since permanent human settlement. Originally a Native hunting ground, it has been a homestead and the home of an oil refinery that created an industrial wasteland and is now a natural environment park.

Grades 3–11 teachers in Calgary and surrounding areas have the opportunity to use this unique wildland site for a one- to four-day experience following the philosophy of Campus Calgary's Open Minds program. The education program is sponsored by Petro-Canada, and the only cost to schools is busing.

Why visit the Inglewood Wildlands? This site is a special place, created by a community in partnership with other organizations in response to a technological problem. It is an environment where students can contemplate human impact on the landscape; appreciate the results of community vision; understand oil-recovery techniques, landscape transformation and reclamation processes; explore nature and natural processes; and embrace a sense of stewardship for the environment. Many curriculum connections exist.

For more information or to apply for fall or spring 2007/08, visit www.inglewoodwildlands.ca.

The Teacher List

Greetings, fellow science teachers!

In the last issue, I outlined what LearnAlberta.ca has to offer. I am new to junior high after many years of teaching the high school sciences, so electronic resources have been invaluable to me.

I'd like to introduce you to a resource that has given me a ton of ideas to use and share with my colleagues and my own kid's teachers. I'm talking about The Teacher List, which is run by Pete MacKay, a great teacher at Jasper Place High School in Edmonton.

You can access Pete's list of incredibly useful websites in two ways. One way is to go to the website (www.theteacherlist.ca) and use the local search engine. You can search by division, subject and keyword. The other way is to subscribe to the listserv, which has thousands of subscribers from all over the world. Every school day Pete sends out a link to a site for general teaching or for specific subjects (such as high school chemistry). Whichever method you choose, the service is free.

I'll describe some of the websites I've discovered through The Teacher List, but you really should check it out for yourself. You will be amazed by what you find!

One link was to a math website where you can download or print all types of graph paper. I like to have my junior high science kids doing graphing to prep them for lab data analysis in high school.

The NASA SCI Files website (http://scifiles.larc.nasa.gov/) provides videos that you can download or stream. Some of the videos are segmented so that you can select the sections you want. There are teacher guides, as well. Most of the files are

big, so a broadband connection is vital. I wish I had looked here before I studied pulleys with my Grade 8 classes!

Many kids need more visuals in the classroom. Science Animations (http://science.nhmccd.edu/biol/animatio.htm) provides a number of animations for all areas of science. This is great for those of you who teach across divisions.

I could go on for a long time, but I won't. Go to The Teacher List and begin your search or sign up for the daily link. I forward the links to my colleagues in math, English language arts and social all the time, and I then look like a genius (even though it's really Pete's genius).

If you know of a particularly useful site, send the URL to Pete, and he just might use your suggestion. He has featured some of the sites I've submitted.

In the unlikely event that you can't find something on The Teacher List, please feel free to contact me at ckarvonen-lee@atasc.ab.ca.

Corey Karvonen-Lee,
Division III Director

Environmental Distance Learning

Renowned for its youth programs since 1995, Environment Canada's Biosphère is now offering Environmental Distance Learning, using video conferencing, to high schools and colleges across Canada. The live and interactive educational activity Clean Air and Climate Change is part of this new service.

Clean Air and Climate Change is tied with provincial education programs and discusses the latest scientific information about air and climate, the impact on Canada and its regions, and what we can do. It aims to increase students' awareness and encourage them to be proactive.

The video conferences allow direct access to an expert on weather, climate and climate change. The live and interactive activities, which include animated graphics, are conducted from a state-of-the-art studio.

This new activity is free. The only requirement is the technical ability to receive video conferences in a room with a capacity of one, two or three classes (up to 100 students). It is also possible to link several schools from various regions of Canada, allowing students from around the country to exchange thoughts about clean air and climate change that are specific to their regions and lives.

The availability, length and content of the presentations can be adjusted to individual school schedules. The presentations can last one or two class periods, from 50 to 75 minutes. For the current school year, the activity is available from March 1 to June 15, from 12 PM to 5 PM (EST).

For more information about Environmental Distance Learning and the Clean Air and Climate Change activity, go to www.biosphere.ec.gc.ca/Education_a_distance-WSA1D06BB1-1_En.htm.

Alberta Education Update

Senior High Science

Revised Programs of Study

In December, the Science 10–12 Advisory Committee reviewed the final versions of the revised Biology 20–30, Chemistry 20–30, Physics 20–30 and Science 30 programs of study.

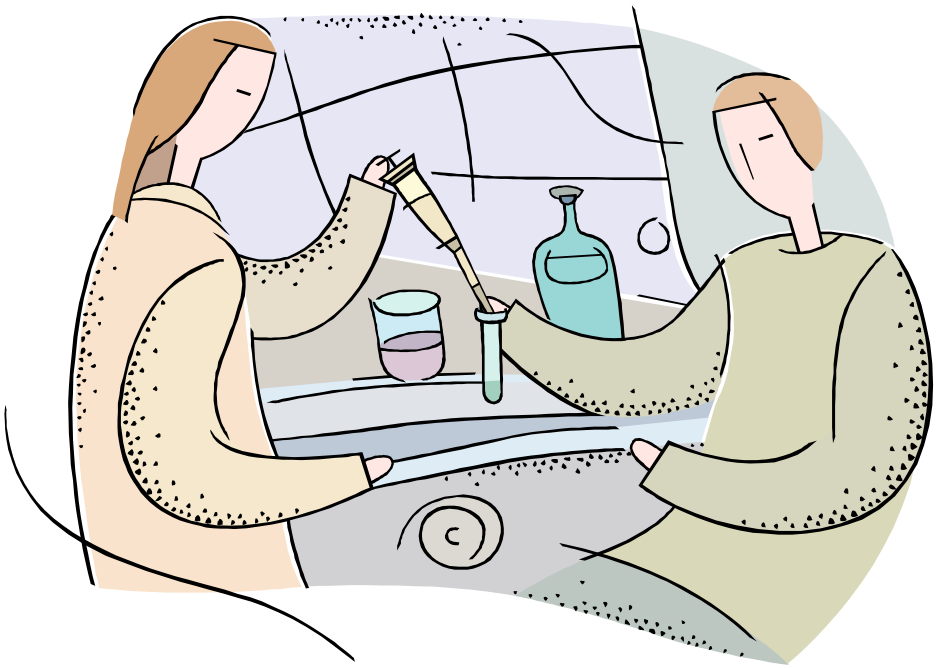
The revised programs of study will be available in April at www.education.gov.ab.ca/k_12/curriculum/bySubject/science/. The Learning Resources Centre (LRC) is accepting early offer discount (EOD) orders until May 15 for the basic student and accompanying teaching resources to support the revised programs. The LRC can deliver EOD orders to schools by June. The Science 30 basic student and accompanying teaching resources will be available to schools by August and can be preordered from the LRC. The LRC website is www.lrc.education.gov.ab.ca.

Workshops to support implementation were held in February and March in Wainwright, Edmonton, Fort McMurray, St Paul, Red Deer, Calgary, Lethbridge, Medicine Hat, Grande Prairie and Peace River. Workshops to support the French-language programs will be held in August in Edmonton and Calgary, with video conferencing available. Contact Glenn Zacharuk at Glenn.Zacharuk@portagecollege.ca for more information.

Mandatory implementation of the Biology 20, Chemistry 20, Physics 20 and Science 30 programs of study will occur in September 2007, followed by mandatory implementation of the Biology 30, Chemistry 30 and Physics 30 programs of study in September 2008. The first Biology 30, Chemistry 30 and Physics 30 diploma examinations for the revised programs of study will be administered in January 2009.

Biology 20, Chemistry 20 and Physics 20 Online Courses

Biology 20, Chemistry 20 and Physics 20 online courses are being developed by the Distributed Learning Resources Branch and partners in the online school community. The field-test versions of these courses are scheduled to be available for September.



The course resources will be available through a number of sources, including the following:

- Alberta Education's Tools4Teachers website (www.tools4teachers.ca)
- Alberta Distance Learning Centre
- Argyll Centre
- Calgary Board of Education

The final versions of the online courses will be available for September 2008. The print versions of the distributed-learning resources will also be available for September 2008 from the LRC.

Development for the 30-level courses will follow a similar pattern, with the field-test versions of the online courses available for September 2008 and the print versions of the distributed-learning resources available for September 2009.

Science 20 and 30 Textbooks

Alberta Education's *Science 20* textbook became available in September 2006. Feedback on this textbook has been very positive. The *Science 30* textbook will be available in Spring 2007. Check the Tools4Teachers website (www.tools4teachers.ca) in June to preview the *Science 30* textbook.

These custom-developed student textbooks, with integrated multimedia CD-ROMs, provide direct support for the Science 20–30 program. They have been written in a narrative style and are rich in activities, including lab investigations and activities that use computer technology. The material is student-centred, with an engaging and modern magazine-style layout.

The companion CD-ROMs include multimedia segments, spreadsheets, activities to support ICT outcomes, detailed answer keys, digital copies of student handouts and materials for distributed-learning students.

Each textbook is supported by the following materials, which can be purchased separately:

- A comprehensive *Teacher Resource Guide* CD-ROM: The *Teacher Resource Guide* provides extensive professional support for teacher planning and preparation of lessons, learning activities (such as lab investigations and activities using technology), student assessment and corresponding distributed-learning materials for students. Detailed answer keys and suggested solutions for the end-of-chapter questions and the unit-review questions are also included.
- A digital version of the textbook files, called *Teacher rEsource,* available on a set of four CD-ROMs: The *Teacher rEsource* is not intended to be a textbook for students but, rather, a resource for teachers to use as they see fit in developing their own lesson materials. Teachers can take these digital files and modify them to incorporate their own materials and accommodate various teaching and learning styles and various learning environments.

For information regarding science distributed-learning resources, contact Art Bauer at Art.Bauer@gov.ab.ca or (780) 305-6487 (to be connected toll free in Alberta, dial 310-0000 first).

Elementary Science

Nominations for teachers to work on the review of the K–6 science program of studies have been received and processed. Many thanks to the schools for their interest in and support of this work. The first of the meetings to work on revisions to the program was held in March. The Elementary (K–6) Science Advisory Committee, using information compiled from a needs assessment and a literature review, will provide the general direction of the program changes. The Elementary (K–6) Science Working Group will focus on revising the program of studies.

For more information, contact Caroline Nixon at caroline.nixon@gov.ab.ca or (780) 427-9593, or Bernie Galbraith at bernie.galbraith@gov.ab.ca or (780) 422-3218. To be connected toll free in Alberta, dial 310-0000 first.

Tomatosphere

Space exploration requires long-term life-support systems for crews—food, water, oxygen and ways to deal with the buildup of carbon dioxide. Green plants—such as tomato plants—can help meet those needs.

The Tomatosphere project involves school classrooms in the research processes associated with growing plants in space and on extraterrestrial surfaces such as Mars. Schools can sign up now for tomato seeds, including a control group of seeds and a group of seeds that have been exposed to a simulated space environment (with microgravity and temperatures of –80°C). Teachers and students will germinate the tomato seeds in a blind test (that is, they will not know which seeds are which until their results have been submitted). Students may also track the growth of the plants.

Tomatosphere is a curriculum-based project with links to Grades 3, 6, 8, 9 and 10. The focus areas are plants, plant growth, nutrition, space, energy, the environment and the application of space-generated information for use on Earth. The seeds are free and are mailed in the spring. The teachers' guide is also free and can be downloaded from the Tomatosphere website (www.tomatosphere.org). The only costs involved are the peat pots for germination (which are usually less than $20 and with prudent shopping can be found for less than $10).

Each class will receive two packets of approximately 40 seeds. All the seeds have been provided by Heinz, one of the project sponsors, and are perfectly safe (with no genetic modification) for germination, growth and even consumption of the tomatoes at the end of the experiment. Some classes made salsa with their tomatoes last year. The seeds are for plum tomatoes (Heinz variety H9478 F1). These seeds are used widely in North America and in countries such as Hungary,

Рядом с Майклом упаковка кетчупа. Образовательная программа Tomatosphere II в действии


Tomatosphère
Seeding the way...
It's in their hands
Seeding the way...
It's in their hands
(french)
www.tomatosphere.org
Agriculture and Agri-Food Canada
Agriculture et Agroalimentaire Canada
Canadian Space Agency
Agence spatiale canadienne
Heinz
University of Guelph
STOKES

Portugal and Spain. Depending on the weather, a plant will produce fruit in 85–105 days.

Although the germination will take place over a few weeks, the actual planting time is short. The peat pots will need watering and regular inspection during the germination period. If teachers and students want to transplant the germinated tomato plants, this will require additional time.

Classroom data will be logged on the website following completion of the experiment. Teachers will have access to the results of other classes across Canada and around the world for comparison. They will also have access to information from the University of Guelph, which will be conducting parallel experiments.

The project is made possible by a group of sponsors dedicated to improving scientific literacy in Canada:

- H J Heinz (Canada) and the Heinz Foundation
- Canadian Space Agency
- Agriculture and Agri-Food Canada
- University of Guelph
- Ontario Centres of Excellence
- Stokes Seeds
- Natural Sciences and Engineering Research Council of Canada

All the Tomatosphere activities focus on the website (www.tomatosphere.org). Teachers can register online; download the experiment, student activities, visual materials, videos and background information; and input their experiment results on the website.

Applications will be accepted until the beginning of May. Registrants will be automatically enrolled for subsequent years as placeholders for future Tomatosphere projects.

TOMATOSPHERE

More Great Crates from Science Alberta

science alberta FOUNDATION

Looking to inject a little excitement into your next science class? Look no further—the Science Alberta Foundation has a simple and engaging solution!

The Science-in-a-Crate program provides teachers with amazing ready-made science resources. Each trunk-sized crate is self-contained and includes hands-on, minds-on interactive activities. The activities are innovative and engaging, and they tie directly to Alberta Education's science and mathematics curricula.

Currently, the crates visit one in eight classrooms in Alberta, reaching more than 85,000 students in 3,500 classrooms.

The following titles will be available this spring.

Ways of Knowing: Colour Talking Circle

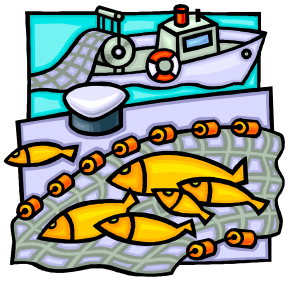
Grade 1 (Creating Colour)

The concept behind this colourful crate is based on the Aboriginal talking circle. Participants are encouraged to share stories and reflect on the topics as they explore the significance of colour in our diverse world.

Made possible through funding from Nexen Inc and International, Intergovernmental and Aboriginal Relations

Ways of Knowing: Little Moccasin's Boat Adventures

Grade 2 (Buoyancy and Boats)



Hayley Little Moccasin is going on a boat trip with Grandpa. Along the way, they meet various friends who teach them about building voyageur canoes, umiaks and kayaks. They also discover how to set a fishing net using floaters and sinkers.

Made possible through funding from Nexen Inc

Pirates of the Lodestone

Grade 2 (Magnetism)

Students explore the mysterious properties of magnets. This pirate-themed crate has participants navigating a treasure map with a compass, creating floating rafts and trying to trap the pirate Captain Repel.

Made possible through funding from ExxonMobil

Wanted: Engineers for the Salazar Carnival

Grade 4 (Vehicles and Devices That Move; Wheels and Levers)

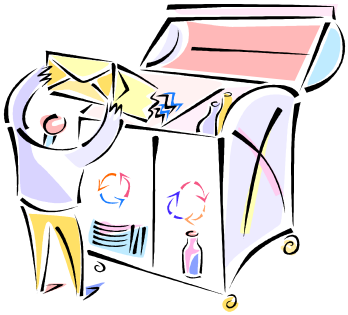
Using simple machines such as pulleys, levers and gears, students analyze seven carnival rides and are asked to improve on their design.

Made possible through funding from the University of Calgary; Alberta Advanced Education and Technology; and the Association of Professional Engineers, Geologists, and Geophysicists of Alberta (APEGGA)

WasteWorld

Grade 4 (Waste in Our World)

We are all consumers who create various types of waste. We cut our grass, use motor oil, drink from plastic bottles and so on. Participants will use observation and research skills in exploring a series of scenarios to develop an understanding of the role producers, processors and consumers play in waste-management issues.

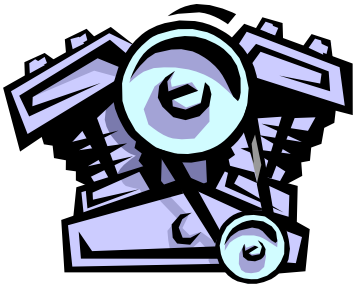


Made possible through funding from ConocoPhillips Canada and Alberta Environment

Mega Machines

Grade 8 (Mechanical Systems)

This crate allows students to investigate the principles of simple machines. Participants examine and manipulate levers, pulleys, gears, hydraulics and inclined planes and discover how these simple machines are at the heart of the big machines found in the oil sands today.



Made possible through funding from the Brawn Foundation

You can book these new crates for your classroom from May through December at www.sciencealberta.org. Enter promotional code PNDEV07 to obtain these new titles free. If you would like to use a new crate before May, e-mail crates@sciencealberta.org to check availability.

Professional Development

Trails to Sustainability: An Environmental Education Conference

May 24–27
Delta Lodge, Kananaskis

Trails to Sustainability is an exciting conference designed for all educators, whether in a school or elsewhere. Come join us in the spectacular setting of the Kananaskis Valley. Picture yourself learning about and celebrating environmental education . . . in May . . . in the Rockies. It doesn't get any better!

Trails to Sustainability is a joint conference hosted by three organizations: the Canadian Network for Environmental Education and Communication (EECOM), the Alberta Council for Environmental Education (ACEE) and the ATA's Global, Environmental and Outdoor Education Council (GEOEC).

This event will help you learn more about the many trails to environmental stewardship and a vibrant society and economy. The keynote speakers reflect these three pillars of sustainability.

- *Environment.* Ecology professor David Schindler will help us examine our environmental impact and responsibilities through the lens of water, and wildlife biologist Karsten Heuer will demonstrate our connections to wildlife and wilderness.
- *Society.* Stephen Lewis, the UN secretary-general's special envoy for HIV/AIDS in Africa, will remind us what we can do to improve the human condition, in Canada and abroad.
- *Economy.* Hunter Lovins, president and founder of Natural Capitalism Solutions, will show us how schools, businesses and people profit and thrive when we "green" our practice.

The registration fee is $210 (which includes a one-year membership in each of the three host organizations).

For Friday, you can register online for one of 19 trails—thematic full-day sessions designed to help you explore a topic close to your heart. The Saturday workshops are also now set and open for registration.

For more information, visit www.trailstosustainability.ca. From there you can register for the conference, choose your trails and workshops, and arrange for accommodations and meals.

Gareth Thomson, Conference Cochair
and ACEE Executive Director

ASM Materials Camp for Teachers

If you are a high school science, technology or math teacher, you are invited to attend the ASM Materials Camp for teachers, which will be held August 20–24 at the Southern Alberta Institute of Technology (SAIT) in Calgary.

The goal of the camp is to help teachers excite young people in science, chemistry and math. We will show you how to integrate simple low- or no-cost labs and experiments that use everyday materials into your existing lesson plans to actively engage your students in applied science.

This camp involves five full days (8 AM to 5 PM) of workshops. Some days might run into the evening if field trips are scheduled. Snacks (morning and afternoon) and lunches will be provided.

The primary faculty are two experienced master teachers who have taught materials science courses for many years and helped develop this innovative approach to hands-on learning of applied science principles. Participants will be awarded two semester credits through the University of Washington (Seattle).

The application form is available at www.nacecalgary.ca/TeachersSummerCamp.cfm. Please note that the deadline for applications has been extended to **April 15** for Science Council members. Apply right away!

The camp is sponsored by the ASM[1] Materials Education Foundation, the Calgary Chapter of ASM International, the NACE[2] Foundation and NACE Calgary.

For more information, contact any of the following people:

- Pat Kaiserseder, pakaisersede@cbe.ab.ca
- Brent Harle, brent.harle@cnrl.com or (403) 514-7818
- Jeane Deatherage, jeane.deatherage@asminternational.org or 1-800-336-5152 (ext 5533)

Notes

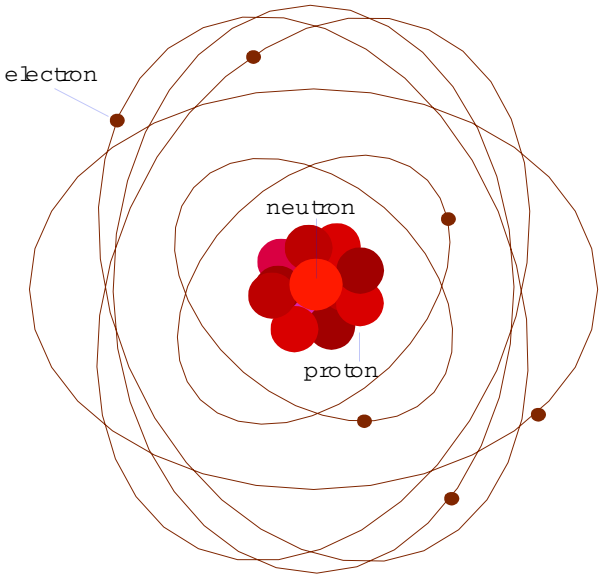
1. Materials Information Society (www.asm-intl.org)
2. National Association of Corrosion Engineers (www.nace.org)

DAMOP 2007 Educators Day

On June 5, the Division of Atomic, Molecular, and Optical Physics (DAMOP) of the American Physical Society will offer Educators Day, a once-in-a-lifetime daylong event for high school physics teachers, at its annual conference in Calgary.

Carl Wieman will be the host. Wieman received the Nobel Prize in Physics in 2001 for his work in ultra-cold atomic physics. He currently works in the field of physics education research, and he recently moved to Vancouver to establish a new science education project at the University of British Columbia.

Educators Day will focus on two topics: modern tools and techniques for physics instruction, and current research in atomic and molecular physics. The first topic will concentrate on the peer-instruction techniques pioneered by Eric Mazur, the use of interactive clicker technologies to implement this instructional approach and modern computer-based simulations for physics instruction. Educators will receive a hands-on introduction to the PhET (Physics Education Technology) software package, a simulation package that can be used by teachers to illustrate a wide range of physics concepts. (For more information on PhET, go to http://phet.colorado.edu.)



The second topic—current research in physics—will involve presentations by three prominent atomic physics researchers. Debbie Jin, Chris Monroe and Carl Wieman will introduce teachers to modern physics research, relating it to the educational tools included in the program.

Registration and Costs

Educators Day is a fully funded event, meaning that there is no fee for teachers. In fact, active teachers who register for the full day will receive up to $200 for their schools to support the cost of a substitute teacher. Teachers from outside Calgary can request additional funding to offset travel and accommodation costs. Also included in the registration are meals, materials teachers can take back to their schools and an opportunity to meet with physicists at a reception at the main DAMOP 2007 conference site.

To ensure a top-quality experience for all, registration will be limited. Please complete the online application form at http://qis.ucalgary.ca/events/damop07-edu/ by **April 15.**

For information about Educators Day, contact Phil Langill (pplangil@ucalgary.ca) or Rob Thompson (thompson@phas.ucalgary.ca).

MEd Cohort in Elementary Math and Science

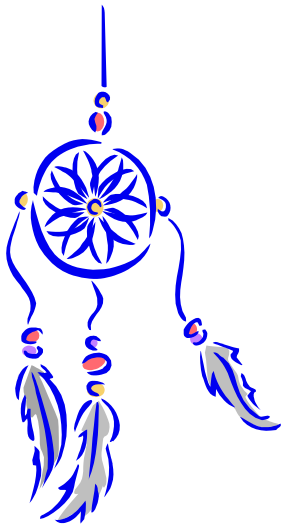
The University of Alberta's Department of Elementary Education will offer an MEd cohort specializing in elementary math and science commencing July 2008. The cohort will allow elementary teachers to meet and work with educators who share their interest in math and science. The program will feature flexible scheduling so that teachers can complete it while remaining in their full-time teaching positions. Three weeks of study will take place in Edmonton in July 2008 and again in July 2009. The other courses will be taken online.

For more information, contact Lynn McGarvey, professor of elementary math education, at (780) 492-2436 or lynn.mcgarvey@ualberta.ca; or Brenda Gustafson, professor of elementary science education, at (780) 492-0872 or brenda.gustafson@ualberta.ca.

Additional information about graduate programs in the Department of Elementary Education can be found at www.uofaweb.ualberta.ca/elementaryed/.

DreamCatching 2007

Attention all educators of Aboriginal students! DreamCatching 2007 is coming!



The best and the brightest educators and researchers will gather May 2–5 at the University of Regina for DreamCatching, a series of professional development workshops in math and science for teachers of Aboriginal students.

DreamCatching was the first conference of its kind, offering opportunities to learn about making curriculum culturally relevant. DreamCatching continues to offer unparalleled experiences for participants to learn in focused, hands-on environments that provide unique learning opportunities designed for real-world application. Moreover, the DreamCatching experience doesn't end when participants return home; participants are sent usable classroom tools quarterly.

You do not want to miss DreamCatching 2007 if you're an educator, administrator or anyone else interested in learning how to integrate core curriculum and ICT with culturally respectful content.

For more information, visit www.dream-catching.com.

Women in Science

Operation Minerva 2007

The 15th annual Operation Minerva conference was held at Medicine Hat High School on January 29. Operation Minerva aims to help girls maintain their interest in math, science and technology. Grade 9 girls are targeted because they will soon be deciding what courses to take in high school. It is hoped that the conference will spark their curiosity and allow them to make informed choices when selecting courses.

This year, 32 girls from all over southeastern Alberta and Saskatchewan attended Operation Minerva. They arrived at Medicine Hat High School at 8 AM and were then given an orientation, instructions and all the materials they might need for the morning. Buses then took them to their various job-shadow sites throughout the city.

Each year female professionals in fields related to math, science and technology generously donate an entire morning to mentoring these young girls. All the mentors are professionals in their fields, with careers ranging from explosives specialist to veterinarian. One thing is for sure: each and every one of the mentors thoroughly enjoys sharing her experiences with the young ladies. The mentors often tell me that there is just not enough time and that the conference should be longer.

The girls returned to Medicine Hat High School for lunch and a bit of a break before the hands-on afternoon sessions. This year each girl chose two sessions from the 10 that were available. A pilot from Bar XH Air presented a session on aviation. The program administrator for SCIberMENTOR, an online e-mail mentoring program for girls, travelled from Calgary for the day to promote the program to rural students. The Colours of Chemistry session is always a big hit; chemists from DRDC Suffield make exciting solutions, including a traffic light reaction and disappearing ink. With all the excitement around forensics these days, you can be assured that the workshop presented by a police officer from the Medicine Hat Police Service was met with great enthusiasm. The girls were also very excited about talking to explosives specialists from DRDC Suffield and BATUS, and seeing some of the interesting tools they use every day.

The hands-on workshops are a welcome opportunity for girls to participate in real science labs. When I assist in a workshop, I am always amazed when one of the girls asks me a question like "What is an Erlenmeyer flask?" That is something one would assume a Grade 9 student would know. The sad reality is that, because of cutbacks and large class sizes, hands-on science is no longer accessible to all students in Alberta. In rural schools particularly lab facilities are nonexistent. It's too bad that the future of our province will suffer because something as vital as education is not adequately funded.

Even though it is a very long day, the girls never complain. They are rushed from workshop to workshop, gathering career information, collecting material for their high school portfolios and asking a million questions. The volunteers are always exhausted when it's over, but we know that our efforts have been worthwhile when that one girl comes up after everyone has left and thanks us profusely for doing this program.

For more information on the Operation Minerva conference, please contact Patty Rooks, regional executive director of Praxis, at (403) 527-5365 or praxis@praxismh.ca.

Patty Rooks

Awards

Science Council Awards

The Science Council encourages everyone to nominate a colleague for one of the following awards.

Outstanding Science Teacher

The Outstanding Science Teacher award recognizes excellence in science teaching in Alberta. Strong consideration will be given to outstanding classroom teaching over an extended period of time, as well as contributions such as articles, workshops, curriculum development and other instances of professional development. Eligibility is limited to those currently teaching at least two-thirds of the time.

An annual plaque and a personal plaque to keep will be presented to the recipient at the annual conference banquet. Travel expenses to the conference and one night's accommodation and meals will be covered by the council. The recipient will be required to share his or her approach to science teaching either by writing an article for one of the council's publications or by being interviewed by the editor (or a designate).

Distinguished Service Citation

The Distinguished Service Citation recognizes a broad, extended contribution to science education in Alberta, including curriculum development, inservice, outstanding classroom teaching, professional publications and contributions to the greater community related to science education.

A large annual trophy and a personal trophy to keep will be presented to the recipient at the annual conference banquet. Travel expenses to the conference and one night's accommodation and meals will be covered by the council. An article describing the recipient's contributions will appear in a Science Council publication.

To nominate someone for either award, please fill out the online form at www.atasc.ab.ca/awnominationsform.htm. The deadline for nominations is **September 15**.

PSAC School Grants

If you represent an elementary, junior high or senior high school in a community with a population of 15,000 or less, you can apply for one of 10 grants of $1,000, awarded by the Petroleum Services Association of Canada (PSAC).

Funds must be applied to a project or purchase relating to math, science, computers, or the oil and gas industry.

The deadline for application is **Friday, April 13**. For more details and the application form, go to the PSAC website (www.psac.ca) and look under What's New at PSAC, or contact Sandy Arseneault at (403) 781-7388 or sarseneault@psac.ca.

Good luck!

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