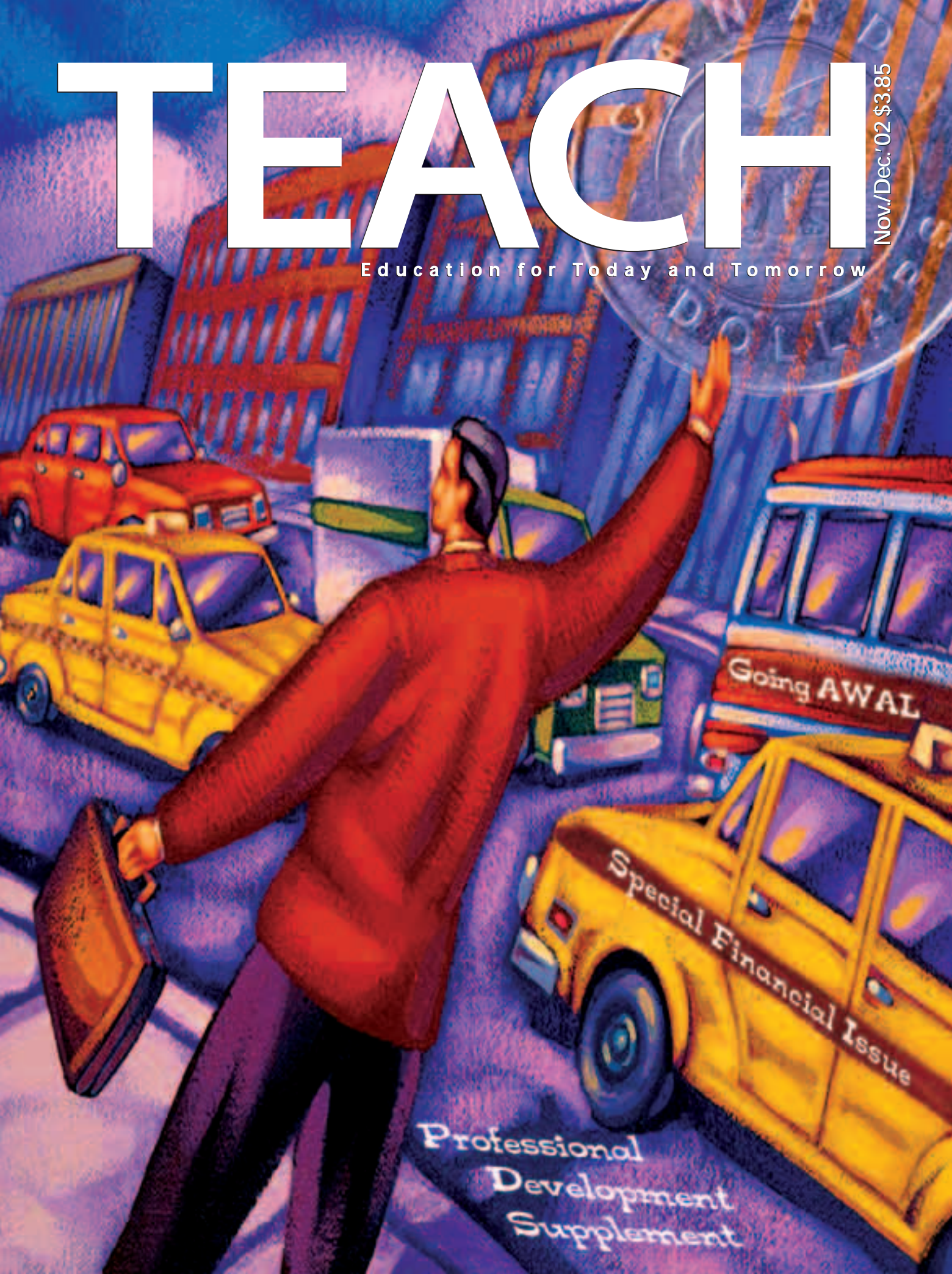


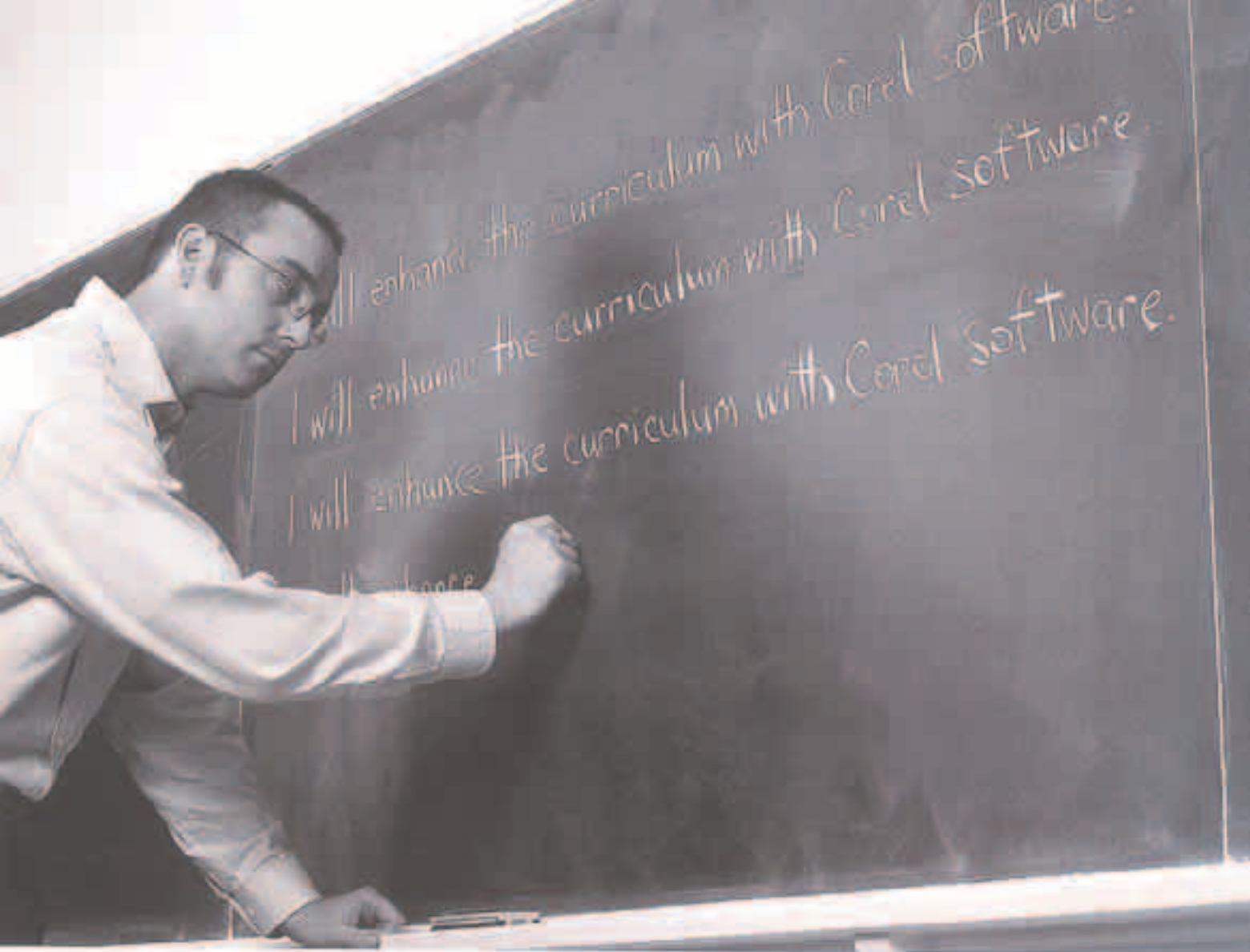
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Although it seems as if the school year has barely begun, we are staring down the throat of Christmas. Again. And yet again conflict is present and we stare at the possibility of another incursion in the Middle East, this time it is Iraq. Again. Compared to Christmas or virtually anything else, these are difficult subjects to contemplate. But think them through we must. And discuss. Like September 11, it is only through open dialogue and a formalized exploration of the issues can the root causes be exposed. This may be painful but ultimately it is a healthy process. We in Canada are lucky beyond belief and we often forget this. But travel outside the country and look back and then it is possible to see. Educators need to use these moments and events to tackle some tough issues with their classes. We need to air these conflicts in order to deal with them properly. And I think it is important to trust that students will take these issues seriously. As educators, you can provide the balance and the boundaries, set the parameters for teaching and learning that is so vitally important.

Normally, the theme of the November/December issue is professional development and in keeping with tradition we have worked quite hard to gather information about new products and services that help teachers support skills development and training. The Ninth Annual Professional Development Supplement presents a compendium of information that is designed to pique your interest and allow you to follow up directly with the publisher or developer concerning a listing you find compelling. We position the listings as narrative descriptions only that do not constitute a review or endorsement. Then it is up to you to determine what is relevant and take action.

We have established a secondary theme for this issue which delves into matters of finance, investment, insurance

and liability for educators. In some instances, you will read about educational programs designed for students complete with tools and resources for teachers for classroom implementation. Finance is much on everyone's mind these days and managing such things well is an important asset and responsibility for everyone.

As usual, our provocative columnist Richard Worzel looks at controversial themes in his writing and this issue, it is no different as he describes how to effectively ruin a school system. Mr. Worzel writes in a biting, satirical tone that is always stimulating. Agree or not, it is important to join the debate.

As always we look for your comments and feedback on the content in every issue of TEACH Magazine. ☺

Wili Liberman

Next Issue

- *Tenth Annual Technology Supplement, new products and services*
- *CURRICULA, Futures and more*

We gratefully acknowledge the support of The Canada Magazine Fund



TEACH

MAGAZINE

Publisher / Editor:
Wili Liberman

Associate Editor:
Jennifer Kavur

Contributing Writers:
Marjan Glavac, Jean Greig,
Dan Lang, Richard Worzel

Advertising Manager:
Michele Newton Benson

Art Direction:
Vinicio Scarci

Designer / Production:
Elskelijn Boks

Circulation:
Susan Holden

Editorial Advisory Board:
John Fielding
*Professor of Education,
Queens University (retired)*

George Goodwin
*Managing Director,
Historica Foundation of Canada*

John Myers
*Curriculum Instructor,
Ontario Institute for Studies in Education/
University of Toronto*

Rose Dotten,
*Directory of Library and Information Services,
University of Toronto Schools*

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Choosing an Adobe Layout Program

When Gig Harbor High School won the 2002 National Newspaper Pacemaker Award for its monthly 16-page newspaper The Gig Harbor Sound, much of its success was attributed to three Adobe programs: Photoshop, Illustrator, and InDesign. Because all three programs share the same basic interface, explains newspaper advisor Joel Peyton, students are able to learn them quickly and easily. The Sound switched from PageMaker to InDesign two years ago. Based on his experience with both programs, Peyton feels that InDesign 2.0 is “far superior” to the “outdated” PageMaker 6.5. Although Adobe markets PageMaker as a program “for business people and educators with little or no design experience” and InDesign as “for high-end graphic designers and print professionals,” staff at The Sound feel that quite the opposite is true - PageMaker is not that easy to use. For example, Eric Johnston, editor-in-chief of production, says that within two weeks of being introduced to InDesign, he was creating ads. Within a month, he was designing full-page layouts.

Co-advisor Chris Cushing spent six months working with PageMaker to learn the same thing. Peyton suggests that educators ignore InDesign’s intimidating status as a professional-level program and trust him when he says that the learning curve is not steep. Within a week, most students can learn the basics. Daniel Knecht, editor-in-chief of production in 2001/2002, agrees. InDesign is more self-explanatory, more efficient, and better designed than PageMaker, he says, pointing out that “there is a night and day difference between the two.” As for specific features, Cushing especially enjoys InDesign’s automatic clipping pads. Knecht appreciates the auto-recovery feature that creates back-ups for unexpected crashes. The Sound staff also note InDesign’s force justified feature that decreases gaps in the text, as well as its post-script print drives. As for problems, most occurred during the printing process, and were not attributable to Adobe. Print shops don’t upgrade their software as often as they should, says Peyton. For example, The Sound’s local print shop didn’t know how to use InDesign or even how to read a PDF file. (Adobe suggests you visit www.partners.adobe.com/asn/partnerfinder to search for an ASN Service Provider that will be able to provide the InDesign printing support you need.) Overall, if your school is deliberating between PageMaker and InDesign, the latter seems to be the best way to go.

Version 2.0 runs natively on Mac OS X and Windows XP, and is available from Adobe for US \$199 (estimated education street price). InDesign 2.0 tutorials, training, and an 11-lesson curriculum are available free to teachers at the Adobe education Web site. For further information, visit www.adobe.com/education.



David Ben

The Conjuror Is Coming to Town

The Conjuror, a critically acclaimed magic show featuring magician David Ben and directed by Patrick Watson, is coming to Toronto in December. Set in the Golden Age of Magic, circa 1909, the show features magic classics such as Okito’s *Floating Ball*, Sebit’s *Sawing in Two*, and Robert Houdini’s *An Aerial Suspension*. According to Ben and Watson, the root of active learning lies in asking questions and magic stimulates this inquisitive state. Together, Ben and Watson promote magic as a portal for learning and encourage teachers to bring their students to the show. A Teacher Resource Guide, which includes links to the Ontario Curriculum to aid educators in both pre- and post-show class discussions and projects, is provided to teachers after reservations are booked. Ben and Watson also hold “Talk Back” post-show chats after every student matinee. The Conjuror runs from December 4 to January 5 opposite the ROM at The Isabel Bader Theatre, 93 Charles Street West, Toronto, ON. To order tickets, call Ticketmaster at 416-870-8000 or visit www.theConjuror.com.



The Gig Harbour Sound

Historica

<http://www.historica.ca/>

Historica is the Web site for the Historica Foundation, whose mandate is to provide Canadians with a deeper understanding of their history and its importance in shaping their future. The foundation accomplishes this mandate in a number of ways.

Heritage Fairs take place in every province and territory in Canada in May and feature public exhibitions of Canadian student history projects, displays, and workshops. The culmination of the Heritage Fairs is the National Heritage Fair, hosted in mid-July by a different community in Canada. Students whose history projects are selected at the Regional Fairs gather together from all Canadian provinces and territories where their projects are showcased and where they participate in a week-long History Camp, which includes exploration of a part of the country they might otherwise never have the chance to visit.

Historica also sponsors a national Summer Institute for teachers of Canadian history as part of its Professional Development program. Each summer, elementary, middle, and secondary school teachers from across Canada come together in a bilingual setting for the professional development experience of a lifetime.

The most well-known activity that can be found on the Historica site is the Heritage Minutes. Heritage Minutes are one-minute highlights of some of the best and most exciting aspects of Canadian history that have appeared on television for the past ten years. There are now over sixty Heritage Minute programs. The programs are searchable by province/territory, time period, and theme.



Over 100 teachers participate in Historica's Summer Institute for Teachers of Canadian History each year

The Historica site also has very useful lesson plans for teachers, a detailed synopsis of each Heritage Minute, and the opportunity to order all the Heritage Minutes on VHS video for classroom viewing.



Well Known People Who Happen to be Canadian

<http://schwinger.harvard.edu/~tarning/Canadians/>

Well Known People Who Happen to be Canadian is a Web site created and maintained by John Tarning, a theoretical particle physicist in the T8 group at Los Alamos National Laboratory in California who also happens to be a Canadian.

Here's a Web site that offers information in the following categories: Actors, Actresses, Artists, Astronauts, Athletes, Authors, Business, Comedians, Directors/Producers, Entertainers, Journalists, Miscellaneous, More, Musicians, Scientists, and Search. This is one site that comes through with the facts, and nothing but the facts, about Canadians.

Click on the Actors, Actresses, and More Actors and More Actresses links to view more than 150 Canadians who've achieved fame and fortune in films, television, radio, and stage. Here you can find out about the Canadian actor who plays a lead role in JAG, the Canadian who was the original voice of Spiderman, the Canadian connections to Saturday Night Live, and the Star Trek series and other well-known and less-known facts about Canadian actors and actresses. Go over to the Authors and More Authors links and read about the many Canadians who are famous for their writing.

When it comes to music, business, journalism, and athletics, Canadians have made incredible contributions.

What impressed me the most learning about the numerous Canadian scientists who have received Nobel prizes in physics, chemistry, medicine, and economics. Click on the Scientists link and read all about them.



The Memory Project

<http://www.thememoryproject.com/>

Here's a great place to come to interact and learn about the achievements of Canadians. The achievements are listed under three categories: Passages to Canada, Heroes and Heroism, and Peace and War.

Each category offers reflections by Canadians. In the Passages Archive, an interactive feature allows readers to share their own immigration stories and explore the submissions of others. In Heroes and Heroism there is a section on heroes nominated by famous Canadians and an opportunity to add your own Canadian hero to the Heroes Archive. The Peace and War section is a record of the first-hand stories of Canadian service men and women. The interactive component here is a digital repository of stories submitted by students and veterans in the Veterans Archive.

For teachers, there are very useful resources available for each category under the Teaching Tools link. Free resources are available for download in PDF format.

The unique aspect of this Web site is the searchable database of Ontario veterans listed under the Speakers' Bureau link. Here is an opportunity to bring a veteran into the classroom to talk to students.

Marjan Glavac is author of "The Busy Educator's Guide To The World Wide Web." He can be reached at marjan@glavac.com or <http://www.glavac.com>

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Canadian Securities Administrators: Invest in Learning



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Teach your students what you wish someone taught you!

Who wouldn't benefit from learning more about managing money, saving and investing? Don't you wish you learned about the magic of compound interest when you were younger? Check out the Time Line to Wealth Creation below. What a difference!

The Reality

The reality is that most of your students, if not already interested in the stock markets, are already making money of their own. They will likely become investors in their adult lives. The majority of Canadians are participating in our capital markets in one capacity or another, either as a result of investing directly in stocks, through mutual funds, or via their pension holdings. Today's youth will need to increase their financial knowledge to manage their money properly and to learn how to set and reach financial goals.

Educational Assistance from the CSA

The Canadian Securities Administrators (CSA) is the umbrella organization representing all 13 provincial and territorial

securities commissions in Canada. We have joined forces on a number of initiatives to help raise awareness of money matters relevant to youth. The CSA's youth-oriented investor education initiatives provide future investors with the tools to become financially fit adults, better able to successfully meet their financial goals.

This will be the CSA's third year sponsoring investing segments on the CBC TV Show StreetCents. Past years' segments featured stories on how a high school student was investing and the dangers of Internet investing. The Canadian Securities Administrators' section on the Partners Page of the StreetCents Web site www.cbc.ca/streetcents contains a wealth of information for youth on investing topics.

Last April, during Investor Education Month, the CSA launched its Scouts Investing Crest. Over 43,000 boy and girl scouts and venturers can qualify to receive an "I Invest/J'investis" crest by completing one of five educational activities. More information on the program can be found on the Scouts Web site at www.scouts.ca – just do a search on Investing and you'll find out all about the program.

This year the CSA is urging students to do some research on investing and then let us know what they discovered. Our theme for all investor education initiatives is "investigate before you invest," so we are encouraging students across the country to start the investigation process through a new Contest.

New Contest for Kids

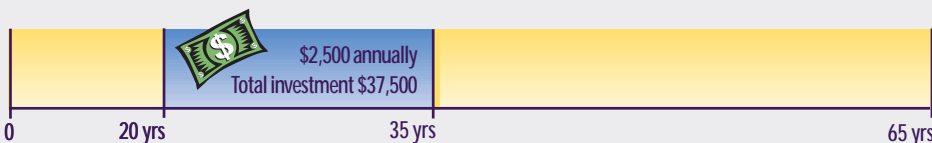
The CSA's test your Financial I.Q. Contest runs until January 31, 2003 and can result in a student receiving \$750 from their provincial or territorial securities commission and an additional \$2,500 as the national grand prize winner. We want students between the ages of 14 and 18 to decide what they would invest that prize money in and why, and tell us about it in 500-750 words. You can find more details on the CSA web site at www.csa-acvm.ca.

We hope you encourage your students to enter the contest and continue to help them learn more about how to look after their money.

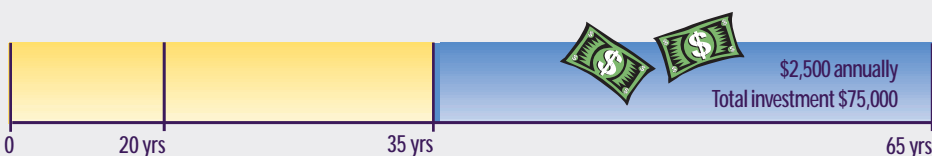


Canadian Securities Administrators Autorités canadiennes en valeurs mobilières

TIME LINE TO WEALTH CREATION



A 20-year-old contributes \$2,500 annually to an equity mutual fund in her RRSP for 15 years and stops all together at age 35. Based on the compound earnings of her saving over a long period of time, and assuming a 7% annual rate of return, she will have just over \$511,000 by the time she reaches age 65. Her total investment was \$37,500.



However, if she had waited until she was 35 to start investing and continued to invest the \$2,500 per year for the next 30 years, she would only have accumulated \$252,000. Her total investment would be \$75,000 in this case. By starting earlier, she has double the money for half the investments.



By Richard Worzel

Dear Minister,

In response to your directive, I have consulted with selective civil servants at the Assistant Deputy Minister level and up. Those that have been captured by the system, and whose loyalties are unclear have been left out of the loop.

You asked us to find solutions to two significant problems. First, that the poor and less able would eventually overwhelm their more gifted counterparts in our society purely by having more children. And second, that jobs suited to lesser-skilled people are going begging in our society, leaving gaps in the machinery of production, and making life difficult for everyone. We believe we can solve both problems simultaneously by judicious management of the provincial education system. Here's what we propose.

The education system's putative purpose is to provide equal opportunity to every child that enters the system. This is all well and good, but the reality is that children will not benefit equally from such opportunity. Both society and the children themselves will be better off if those with lesser gifts are guided into occupations that are consistent with their abilities. However, this view is seen as somehow "elitist" and undemocratic rather than pragmatic and realistic. Accordingly, we will have to approach these goals obliquely, and with subtlety. To do so, we will have to neutralize those who, for

their own selfish reasons, would oppose policy management of this nature. It is with this purpose that we propose what seems to be a diffuse and even confused set of policies with regard to education.

First and foremost it will be necessary to publicly attack and discredit teachers. Not only are they the most visible representatives and advocates of the education system, and therefore prime targets for attack, but they quickly become captured by the system through regular exposure to the children they are teaching. Through this exposure, they develop feelings of sympathy and concern for the welfare of every individual child, independent of the backgrounds from which such children arise. Since teachers have historically been held in high esteem, it will be necessary to undermine their credibility with the general public.

Fortunately, there are two highly effective weapons that can be used against teachers. First, everyone in the electorate has been to school, and they therefore believe that what teachers do is both simple and easy. And secondly, the school day ends around 3 p.m., and the school year ends in June. Accordingly, it will be easy to portray teachers as layabouts, lazy and selfish, more interested in belly-aching than working, and addicted to complaining. Once we have worked this concept hard enough, the general public will develop a hearty contempt for teachers, and, as a side benefit, will dismiss any warnings about the degradation of the system as being selfishly motivated.

As teachers are being neutralized, we can begin to erode the financial underpinnings of the education system by introducing the concept of accountability. There is a vague perception, confirmed by public opinion polls, that schools are not achieving what they should be achieving, and that children are being disadvantaged as a result. We can play on these fears by announcing standardized tests while simultaneously changing the entire teaching curriculum. Since we won't give teachers

adequate time to prepare for this new curriculum, the results of standardized testing will clearly show a system that is failing in its objectives, and further undermine public support for teachers.

These poor results will give us the ammunition we need to take control of school boards. Since very few voters even know who their school board trustee is, and most of those who do dislike them, it will be much easier to discredit trustees than teachers, giving us the elbow room we need to impose the necessary changes on the public education system. Specifically, we will impose budgetary restrictions that will force schools to eliminate support mechanisms for marginal students, while pushing normally-abled students to seek their own level of achievement. The result will be that less resources will be devoted to students who are a drag on the system, and normal students will be forced to compete – which will be good training for the way the working world is today, as distinct from the fuzzy ideas of educational theorists.

We believe we can solve both problems simultaneously by judicious management of the provincial education system.

By this time, the general public will be disturbed and unhappy about the education system, and will be demanding change. Partly in response to these demands, we will introduce tax credits for private education, enabling children of talented and capable people to help their children achieve even greater success, and encouraging them to take their appropriate place in society. This will be controversial, so we suggest that you provide a different rationale for

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this initiative. Fortunately, there is a bullet-proof reason at hand. Religious schools have long complained about the bias of the state against them, and have clamored for funding to match the public schools. While our budget will not permit that level of funding, if we offer a tax credit for private school tuition, we can accomplish two things at once: underwrite superior education for the superior student; and bring the religious lobby onto our side of the public relations battle.

Our eventual goal should be to increase the level of competition within our public school systems, which will spur those who are capable to emerge and work their way up the-economic ladder. They will then be in a position to afford superior educations for their children outside of the public system, assisted by tax credits. Meanwhile, those who do not manage to climb the competitive ladder will be encouraged to seek lower paying, lower status jobs consistent with their abilities, thus fulfilling our economy’s needs and fulfilling their potential at the same time. Since such people will not be able to send their children to private schools, even with tax breaks, we will be assured of a steady supply of such labour without the need to import low-cost labour through immigration, even while we provide a means for the occasional exceptional person to climb out of poverty.

In this way, Minister, we will provide opportunity appropriate to each child while serving the needs of the economy, solving both of the problems you set before us.

We look forward to your comments on our proposal. Meanwhile, those of us in the know will keep these deliberations out of the public record. If they were to appear in a media outlet, I fear they would be widely misinterpreted. ☺

Futurist Richard Worzel lives in Toronto, and volunteers his time to speak to high school students as his schedule permits. Contact him through this magazine, or at futurist@futuresearch.com.



Going AWAL

By Jennifer Kavur

Supported by Human Resources Development Canada (HRDC) and managed by the Centre for Curriculum, Transfer, and Technology (C2T2), Applications of Working and Learning (AWAL) is a professional development program for career studies information. For one day, teachers go “AWAL” from their classrooms and explore a workplace environment. By experiencing the working world firsthand, teachers learn exactly what they need to pass on to their students.

AWAL is essentially a one-day session. Participants visit a particular workplace and conduct two structured interviews – one with an employee and one with a manager. Keeping HRDC’s Essential Skills* in mind, you observe and analyze the workplace and its tasks. Upon leaving, you create a seed idea for an instructional activity or a complete lesson plan. Your work is then posted to the AWAL online database – a free, searchable database available to anyone interested in workplace-related educational activities – for other teachers to see.

The program was first introduced to a secondary school in British Columbia

four years ago. It began as an “applied academics” initiative that looked for ways to make high school more applicable to the work force. After two successful years, HRDC decided to fund the R&D project and make it a national professional development activity. AWAL expanded its initial focus on secondary school to include all of K-12, as well as mature students. The program currently helps teachers connect their curriculum with workplace applications of HRDC’s Essential Skills, and make links between the skills and how they are presented in the classroom.

“AWAL is an eye-opening experience for teachers,” says Diane O’Connor, an AWAL coordinator in New Brunswick. “Some essential skills we teach all the time, we just don’t realize it.” For example, skills such as communication, teaming, brainstorming, and group work are taught every day, at every grade level. Being actively aware of these skills, how they are taught, and their significance to students’ future careers is important. By showing teachers all the options out there, AWAL also educates them on alternative possibilities for their own careers.

Coordinating a Workshop

In September 2000, resource and methods teacher Diane O'Connor began her one-year deferred salary leave from Quispamsis Middle School. Looking for a way to productively spend her time, Diane visited her friend Cathy LeBouthillier, who was professional development coordinator in the Saint John area at the time. Cathy suggested that Diane take a look at a new project from Vancouver called AWAL, whose folder just happened to be sitting on Cathy's desk. One month later, Diane (together with Cathy and Sandra Mitchell, another teacher on deferred leave) found herself running AWAL out of the school board office. On a tight budget that barely covered food and photocopying expenses, they managed to coordinate and present one AWAL workshop for 10 to 12 teachers each month for one year.

The AWAL program was unknown to people in the area, explains Diane, so teachers were initially reluctant to take time away from their classes to attend. The first workshop was filled with friends who owed them favors. But a few workshops and interviews later, good reviews began to spread by word of mouth.

In 2001, Diane was back in the classroom and carried on with AWAL part-time. Cathy had moved up to become director of education for Diane's school district, and although she still supported the program, Cathy was no longer able to invest her time. Diane's schedule was tight, but because the program was now established in the area and the workshops were already prepared, she managed to carry on. That year, Diane held two large workshops for supervisors, superintendents, principals, and guidance counselors.



Dawna Marriott of Inkit Ltd., publishing and design company explains how the company works to Renee Lelievre and Derek Cutler, teachers in Yellowknife



Aurora College Adult Educator Rose Von Schilling and French public school teacher Monique Rousseau take a tour of an engine from an Apprentice Mechanic at Fountain Tire.

This year, Diane intends to do something different. Having held workshops for teachers and administrators, she would now like to extend AWAL's reach to students. Diane plans on holding two workshops for alternative schools. "Alternative schools fit into the AWAL model very well because the students attending these schools will be going directly into the workforce after graduation. By 'going AWAL,' they can explore different career paths and get a first-hand view of a particular job or career that they may be interested in. It may also give them the motivation to go on to post-secondary education, such as technical school or community college, in order to pursue a career," she explains.

Diane believes that AWAL is very important. About 75 percent of students in New Brunswick intend to continue on to university, 35 percent become enrolled, but only 8 percent actually graduate with a degree. These students need to learn what other options are available to them. "The average age for a bricklayer is currently 58 years old. We need young people to fill these types of positions, but with the emphasis placed so highly on university education, the importance of vocations and trades are being ignored. AWAL helps by sending teachers to places that require all types of educational backgrounds," she says. AWAL also addresses youth retention. "It is hard to get young people to stay in the province," Diane adds. Making students aware of specific job opportunities in their area may help.

If you're interested in coordinating an AWAL workshop in your area, Diane suggests you prepare yourself first. "Conducting an adult workshop is very different from speaking in front of children. It teaches you a lot about yourself and how to speak in front of your peers," she says. Putting together a workshop also requires a lot of initial preparation time.

As for what types of businesses to look for, Diane suggests you get a good cross-section, from fast-food restaurants to health science professions to community service professions such as law enforcement and fire safety. "Businesses are welcoming to the idea of having teachers visit for a day, and employees always enjoy talking about what they do at work," she reports. "We have already tapped into 50 businesses in the greater Saint John area."

She also suggests you ask teachers what they and their students are interested in first. Some teachers even survey their classes to get an idea of where to go. Then you do the footwork and set up the interview with a manager and an employee. The interview questions focusing on essential skills come from Vancouver and are pre-established by the AWAL project.

"The program also develops good public relations, with business people and professionals often coming to the classroom to talk to students," says Diane. "And teachers themselves enjoy the work. After an interview, the teachers eagerly develop lesson plans focusing on the essential skills they have seen in the workplace."

The biggest downside to managing AWAL, according to Diane, is coming up with the funding. This year, she has no budget. "HRDC funding is limited and may end soon," she says. Each district will need to finance AWAL on its own.

Attending a Session

Michael Reynolds is a science teacher and musical productions coordinator at Kennebecasis Valley High School in Qui Samsis, New Brunswick. The following is a first-hand account of his experience:

The day started in the usual way - about a half hour of coffee, breakfast snacks, and chit chat among attendees and organizers. At 9:00 AM, we moved into the meeting room for a round of introductions - names, home institutions, our interview partners, and the locations we would be visiting. The organizers then began a 45-minute presentation outlining the AWAL program, its rationale and goals, its history, and its current status. Following the presentation, interview sheets were passed around and their purpose explained. (Two weeks prior, the AWAL organizers let us know who would be our interview partners, the name and location of the business, the contact person, and the people who we would interview.) At about 10:30 AM, we set out to meet our contact person and the interviewees at their workplace. We were given a 3-hour period to drive to the interview, tour the site, conduct the interviews, and return. Around 1:30 PM, we returned from the interviews, and lunch was waiting. The next portion of the day was spent evaluating the interview process and the data we obtained. Each interview pair chose some aspect of their experience to present for discussion: the site itself, the products, the personnel, the type of reception. In the final portion of the AWAL session, from about 2:45 to 3:30 PM, each of us drew up a couple of lesson plans based on the information we had obtained from our interviews. The lesson plans were for educators and others who visited the AWAL Web site.

For the past ten years, Michael has focused on developing and evaluating interdisciplinary learning modules for science students. He creates projects and activities that “challenge science students to widen their definition of learning.” But, as Michael explains, in order to develop the investigative attitude that a topic in science can be more completely understood by looking at it through many eyes – those of the scientist, the poet, the technician, the artist, the essayist – he needs to have an idea of what these other eyes see. One of the reasons Michael took part in AWAL was because it allowed him to interview people he would “not normally have access to.”

“I was impressed enough with AWAL to attend three sessions,” he says. “The interview sheets were a definite help for time management and in keeping the questions on track. The people at the participating business understood why I was there and what type of information I was looking for.”

AWAL has also helped Michael to connect with his students. “A major hurdle for teachers is establishing credibility with their students - Do the students feel the teachers like what they teach? Do they believe their teachers value what they teach? The AWAL program is such a useful source of immediate, localized answers to questions like, ‘When will we ever use this stuff?’ or ‘Why do we have to know this?’”

Using the Database

The AWAL database currently holds over 1400 activities in English and French. Beginning at the home page, you first select a language, and then the type of search you’d like to perform (by company, collector name, essential skill, NOC, or subject area and level). If you decide to search by subject area and level, you must choose a subject or subjects (applied skills, arts education, career education, computers, languages, language arts, math, science, or social studies), followed by grade levels (K-3, 4-5, 7-9, 10, 11, 12, Adult Basic Education, or Adult Continuing Education). Next, you choose a province. Then you click a box labeled “show matching records,” and finally, your matching interviews return. A list of interview summaries showing the company names and the essential skill application contexts appears. To read an interview in detail, you click on the link beneath its summary.

The interview page is divided into three parts: company information, essential skills summary, and application information. The first section provides the name of the company, job title, department, education requirements, and NOC. The second section lists HRDC’s nine essential skills and describes how each is used in this particular occupation. The third section, application information, may have several parts to it, depending on how many essential skills are significant to this position. This section describes the essential skill(s) in detail, in the specific context of that particular job. A suggested classroom activity that deals with the application of that skill follows the skill’s description, along with an indication of how the activity correlates to the curriculum. Subject area and grade level is also listed, along with the collector’s name and the interview date. ©

HRDC’s Essential Skills

1. Reading Text
2. Continuous Learning
3. Document Use
4. Working With Others
5. Writing
6. Numeracy (Math)
7. Thinking Skills
8. Oral Communication
9. Computer Use

AWAL has delivered sessions in Alberta, British Columbia, Manitoba, New Brunswick, Northwest Territories, Ontario, and Saskatchewan. Plans are underway to include Nova Scotia, PEI, and the Yukon in 2002-2003. For further information on the AWAL program, or to arrange a session for your educators, please contact Wendy Magahay, National AWAL Project Manager, Tel: 250-978-4233, Email: wmagahay@c2t2.ca, or visit AWAL’s Web site at www.awal.c2t2.ca.

**Researchers in Canada, the United States, and Great Britain have identified sets of essential skills that are used in virtually every occupation and throughout the activities of daily life. In 1994, HRDC launched a national research study, the Essential Skills Research Project (ESRP) to examine how these skills are used in the workplace. ESRP’s research is the basis for several projects including AWAL, the Essential Skills Portfolio Developer, and the Test of Workplace Essential Skills (TOWES). HRDC currently recognizes nine essential skills, but the list continually evolves. <http://www15.hrdc-drhc.gc.ca/English/esrp.asp>*



Reduce Your Exposure to Risk

By Chris Floyd

Do you ever bring personal items from home and leave them in the classroom? Or, bring school board items home with you? Or even drive students in your car? If you do, you are likely exposing yourself to unwanted risk.

Whether you are beginning your career as an educator, or have been teaching for several years, it's important to consider relevant insurance and liability matters that can affect you as an education employee. Knowing how to protect yourself is the first step.

Whether you are beginning your career as an educator, or have been teaching for several years, it's important to consider relevant insurance and liability matters that can affect you as an education employee.

When bringing personal items into the classroom, it is important to look at your home insurance policy to see if these items would in fact be covered in the event of a loss while at school. Some policies exclude goods that are not on your premises unless they are "temporarily removed". The question is - does your insurer consider the items "temporarily removed" if they have been in your classroom for over four or five months?

Another potential area of concern for education employees and their home insurance is coverage for books. Quite often there are specific limits of coverage for books, tools and instruments pertaining to a business profession or occupation. In addition, the coverage is usually only provided while the books are located on your premises. If you've taken your own books to the classroom, will they still be covered by your home policy?

Some insurers extend coverage in the classroom and provide riders that increase the limit of insurance on books, tools etc., for a nominal extra premium.

Bringing school board property home also requires consideration. Does your home insurance policy cover you in the event of loss or accidental damage to this property? The School boards' policy does not generally respond to lost, stolen or damaged books, tools or instruments while off-site and in the care, custody and control of a teacher. In addition, some school boards self-insure for property valued less than \$5000, so the financial responsibility for these items, if stolen or damaged, could fall to you.

If this is a concern for you, you need to find an insurer who can offer an extension of coverage for the school board property that you have temporarily removed from school premises. These items can include video recorders, cameras and laptop computers.



Most educators know they are exposed to risk if they drive students in their car. If you're one of these individuals, it is recommended that you talk to your insurance broker to discuss and consider all possible coverage options available to you, including carrying higher liability limits. If you are being remunerated over and above your expenses for the carrying of students there are other items that should be considered when you speak to your broker. With the proper coverage and limits in place, should an accident occur while transporting students, you'll be protected.

Over and above basic liability limits, umbrella liability policies are available with limits up to \$5 million. Umbrella liability policies compliment your home and automobile insurance policies by providing extra peace of mind. With society becoming more litigious, educators and all consumers need to consider all of the insurance solutions available to them.

Educating yourself now, reduces your exposure to risk and unwanted liability later.

Chris Floyd is the Vice President of Individual Insurance, OTIP/RAEO.



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Curricula

The Math-Art Project

If you have ever visited a museum of natural history, you have likely come across the fossil of a nautilus. These huge, spiral-shelled mollusks have inhabited earth's oceans for a very long time.

In cross-section, a nautilus fossil is a beautiful thing – a series of chambers, wrapped in a gracefully expanding coil.

One might be forgiven for gazing at a nautilus fossil and not thinking of math. And yet there is a mathematical phenomenon embodied there in that mollusk. It took a great thinker to figure it out, and granted, he wasn't thinking of a nautilus at the time. Leonardo Fibonacci was an Italian mathematician who lived in the early 1200s. In pondering a problem of rabbit reproduction, he came up with a series of numbers that not only solved his problem, but also applied to a great many other patterns in nature.

His number series, now called the Fibonacci sequence, went like this:
1, 1, 2, 3, 5, 8, 13, 21, 34, 55, 89, 144...

Can you detect the pattern? Each number in the series is equal to the sum of the two preceding numbers. Thus $1+1=2$, $1+2=3$, $2+3=5$, $3+5=8$, and so on.

What does this have to do with the nautilus? Well, the size of the successive chambers in the nautilus' shell closely matches the series of numbers in the Fibonacci sequence. Not only that, but

other natural phenomena such as the pattern of seeds in a sunflower head and the number of petals of various flower species appear to be related to the number series that Fibonacci described.

The example of the nautilus shell reveals a strange but undeniable relationship between an apparently abstract mathematical series and a beautiful form in nature. When we humans create beautiful form through art, we tend to think of it as an unstructured process. But art can, and often does, have a foundation in the rigour of mathematics and geometry.

Mathematics and art may seem about as different as two subjects can get. Actually, they can be linked in many ways, and some teachers believe there are good reasons for doing so.

At the Pines Senior Public School in Clarke Township, grade 7 and 8 students get an interesting blend of math and art. Art teacher Pat KcKinnon has an academic background that includes a Mathematics degree from

Trent University. He tries to incorporate mathematical concepts and techniques into his art projects whenever possible.

Often, it is simply a matter of highlighting the connection that is already there. McKinnon points to the example of mixing paint to achieve a certain tone. "Creating a tree green colour may require mixing three parts green paint with one part yellow," he explains. "Some students will understand that they have to use a ratio of 3:1 to get the right colour. Others will just mix the paint until they get the colour they want. But it is an opportunity to point out the mathematical concept of ratios."

Just using key words allows McKinnon to help students see the connection. "Students hear words such as parallel or converging and discover that these are concepts that are not limited to the math classroom," he explains. Tools such as compasses and rulers, normally associated with math and geometry, now become drawing aids in art class.



5 page Reproducible Insert

Activities

McKinnon sees math itself as a tool that can help students understand and excel at art. "You can look at something like a building and just try to draw it. But if you think about it in terms of proportion – the building is twice as high as it is wide, the windows are about half the height of each storey – then you have some practical tools to help you recreate that image accurately."

McKinnon also introduces art projects which more directly link art with mathematical and geometrical concepts. In tessellation drawings, for example, geometrical concepts such as translations (slides), rotations (turns) and reflections (flips) are applied to create pattern. Tessellation was a favourite technique of the famous graphic artist M.C. Escher in creating his fantastical and surreal works of art. Linear perspective drawing relies on geometrical tools like parallel and converging lines and the concept of a vanishing point to achieve depth. In the realm of the truly abstract are fractals: geometrical figures which are composed of identical figures repeated over and over in progressively smaller sizes.

McKinnon likes these math-art projects because he sees them contributing to his students' ability to deal with abstract thought. "When kids come in from the junior grades and I give them an abstract art project, I can see most of them struggling with understanding the concept," he says. By eighth grade, most students are finding such projects much easier.

McKinnon is a mathematics fan, and he likes the idea of expanding his students' vision of math beyond its own little realm and into the worlds of art, music, architecture, nature and even anatomy. He believes that blending math into art helps his students to understand that relationships and connections can exist between very different parts of their world. And he likes the practical tools math provides his budding young artists. "Math uncomplicates art," he smiles, "and vice versa."

Please note: *This teaching unit is most appropriate for Grades 5-12.*

For art teachers without a math background – or math teachers without art experience – creating and teaching material that connects art with math may seem a daunting challenge. But it does not have to be complicated. Below are several relatively easy activities that link math and art.

As well, entering the words "math and art" in your favourite Internet search engine will produce dozens of Web sites with ideas and activities on the links between art and mathematics. The resources section of this article lists several sites geared towards junior and intermediate grades with excellent interactive activities and even downloadable templates. Also suggested is the publication *Mathematics and Visual Art* which has clear explanations and simple activities for junior, intermediate and secondary students (see the Print Resources section).

1. Math-art brainstorm

"Without mathematics there is no art."

- Luca Pacioli, 15th century Italian mathematician

Using the above quote as an opener, ask the class to brainstorm connections between art and mathematics. Are art and math connected? Why would Pacioli say what he did? What aspects of math are also used in art? The connections can range from the very abstract (e.g., art can be used to represent a mathematical concept such as infinity, as in Escher's "Möbius Strip II" drawing) to the very practical (e.g., both use tools such as a compass and ruler).

2. Changing proportions

Goal: Use grids and ratio to recreate a drawing with different proportions.

Most people have probably run into a simple scaled drawing exercise; they show up in many children's activity booklets. A grid is superimposed over a small drawing, and the contents of each square in that grid are transferred to a corresponding square in a similar, but larger grid. The result should be a similar, but larger drawing.



Here are some techniques and concepts that math and art share:

- Measurement
- Proportion
- Ratios (e.g. mixing paint)
- Scale
- Dimension/perspective (length, height, depth)
- Geometrical figures
- Geometrical concepts such as parallel, converging
- Tools such as compass and ruler
- Both require abstract thinking
- Both are means of communicating ideas about our world

Ask students: are there other types of art besides visual art that have connections to mathematics? E.g., music (think Bach!), architecture, set design.

The exercise can be made more complicated by expanding the original grid at an unequal width:height ratio. For example, double the width of each square but leave the height the same, double the height but leave the width the same, or expand the two dimensions differently.

Working individually, each student should find an image they want to copy – a simple line drawing is a good place to start. Using a ruler and pencil, lightly



draw a grid over that image. (The size of the grid divisions will be determined by the size of the original drawing, but 1 cm squares may be a good starting point.) On a large piece of paper, draw a similar but larger grid. The second grid can be expanded proportionately or disproportionately. Make sure that the expanded grid has the same number of squares as the original grid.

Redraw the image on the expanded grid. When the students have completed their projects, discuss how the grid provided a tool to change the original image. How has each student's original image changed? What has happened to mathematical characteristics of the image such as perimeter or area? For example, if the size of the grid was doubled (1 cm squares to 2 cm squares) what happens to the area of the original image? Is it doubled? Or quadrupled? Why?

Display or post the projects on a class or school Web site.

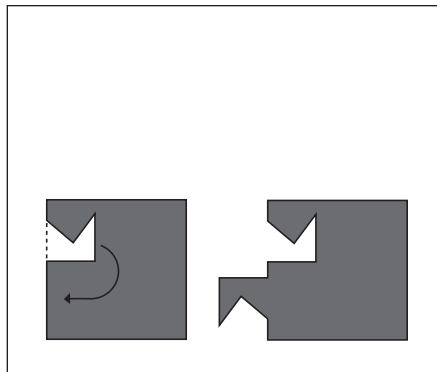
3. Sausage and eggs drawing

Goal: Measure the proportions of the human body and use those proportions to draw a "sausage and eggs" figure.

Working in groups of two or three, students should use string and ruler to measure body proportions of their fellow students. Body proportions could include: length of legs relative to total height; length of arms relative to total height; size of head relative to height; position

of eyes or ears relative to length of the face, etc. Based on their student sample, each group should determine a class average for that body proportion. As a class, compile a chart of the results and discuss the findings. Establish some simple guidelines for drawing human figures based on the results: for example, "most people are about six heads tall", or "most people's legs are about half their total body height".

Working individually, each student should now use these guidelines to draw a "sausage and eggs" human figure. This is a rough drawing using long thin "sausages" for the limbs and rounder "eggs" for the hands, feet, torso and head. Detail is not important, but proportion is. When students have finished, discuss as a group whether the proportions of their drawings look right. Does anything need to be adjusted? Did having the class proportions make it easier for them to draw a human figure?



4. Tessellation transformation

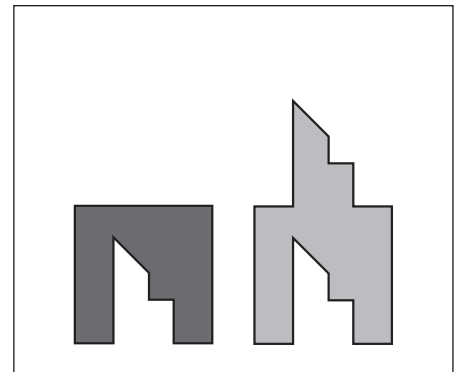
Goal: Use transformation techniques to create a complex pattern from a simple tessellation.

When graphic artist M.C. Escher visited Spain in 1936, he became fascinated by the tessellation patterns he saw in the Alhambra, a Moorish castle built in the 13th century. Complex tessellation patterns became an important part of many of his drawings. In several of his works, Escher started with a simple tessellation but then transformed the shape to become something quite different. His piece "Development I" is an excellent example of this technique.

While Escher's tessellations works are very complicated, the basic concept is relatively simple. Geometrical transformation techniques, including translations, rotations and reflections, can be applied to a regular polygon, such as a square, to change it into something quite different.

As a class, discuss the concept of tessellation, or tiling. To tessellate means "to cover a flat surface, or plane, with a pattern in such a way as to leave no region uncovered." The simplest tessellation is a repetition of squares. Triangles and hexagons can also tessellate, and there are several combinations of regular polygons including squares, triangles, hexagons, octagons and dodecagons that can fit together to create a repeating pattern.

If we are not limited to regular polygons, the possibilities for tessellation are almost endless. With the addition of colour, these complex patterns move from the realm of



Tessellation transformation

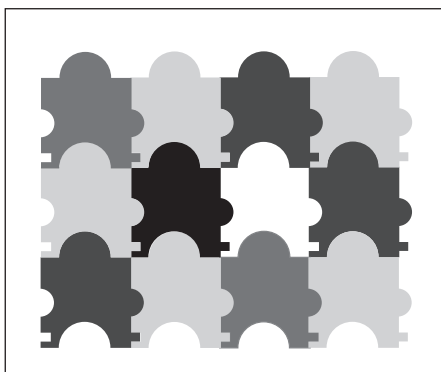
geometry into art. There are thousands of tessellation patterns which have been used in art throughout the ages in floor and ceiling tilings, quilts, wood inlays, etc. Show some examples of these complex and beautiful tessellations to the class (an excellent collection can be found at <http://mathforum.org/sum95/suzanne/historyess.html>).

Give each student several 10 cm x 10 cm squares of heavy paper or cardboard. Ask students to try out the following transformations:

- Translation (slide): Cut a section out of one side and slide it directly across the square to make a “bump” on the opposite side. Tape the pieces together.
- Rotation (turn): Cut a section out of one side and swing it around the corner of the square clockwise or counterclockwise to make a bump at the same position on an adjacent side. Tape the pieces together.
- Slide reflection (slide-flip): Cut an irregular shaped section out of the bottom of the square. Flip it over horizontally and then slide it to the top of the square so that it ends up as a backwards bump directly opposite the hole. Tape the pieces together.

Students can try making several transformations on the same square, but it is important to complete one at a time and not attempt too much in any one step.

Ask students to display their transformations and explain what they did.



Tessellation transformation

Discuss how the shapes have changed. Are they still symmetrical? Do they have the same perimeter as the original shape? Do they have the same area?

Now each student can apply these techniques to create a tessellation. On a sheet of graph paper, draw in pencil a 5x5 box in the lower right-hand corner. Erase a section from the left side of the box and add it to the right side. Now remove a section from the top and place it on the bottom. Tessellate that 5x5 shape over the page. Once the page is complete, colour the tessellation using a set number of colours in a certain order (this will complement the pattern).

If students are comfortable, they can try using the other transformations to create more complicated shapes to tessellate. Beware that a slide reflection will require that each successive row of shapes must run the opposite direction in order to fit.

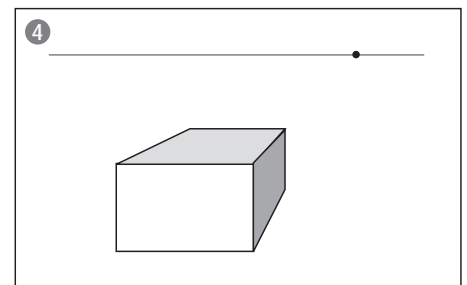
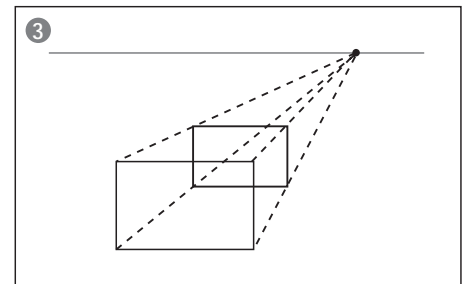
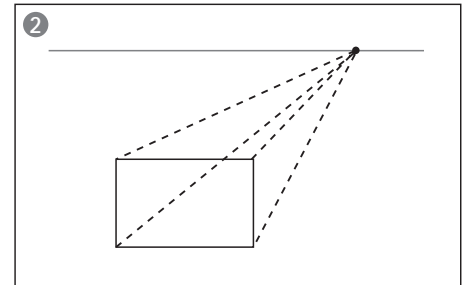
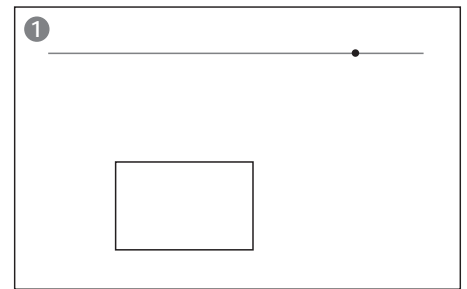
Post the projects in the class or on a Web site.

5. Drawing with linear perspective

Goal: Understand and apply geometrical tools to create a drawing in three dimensions.

We are quite accustomed to seeing drawings and paintings showing depth, or perspective. Artists haven't always drawn in 3-D, however. It was not until the Renaissance that the technique was developed. According to Charles Seife, author of “Zero: The Biography of a Dangerous Idea,” it was the reluctant acceptance of the number zero into western mathematics in the early 1200s that finally opened the door to the concept of a vanishing point, the basis of linear perspective drawing. (In fact, Fibonacci was instrumental in bringing zero from the Arabic system into western mathematical theory, though he is better known for his number series.)

The vanishing point is that spot where an image has receded so far into the distance that it disappears into a single point. Imagine standing on a train track and looking into the distance. The tracks appear to come closer and closer together until they disappear at a single point along



the horizon. Artists can make use of that point, and the converging lines that disappear into it, to give perspective to a drawing.

Working individually, students will create a drawing in one-point perspective. Take a blank sheet of paper and turn it sideways. Using a ruler and pencil, draw a horizontal line (horizon) across the paper 2 or 3 inches from the top. Place a small dot in the centre of the line – this is your vanishing point. Now draw a square or rectangle on the page below and to the right or left of the point.

Using the ruler and drawing lightly, connect three corners of the object to the

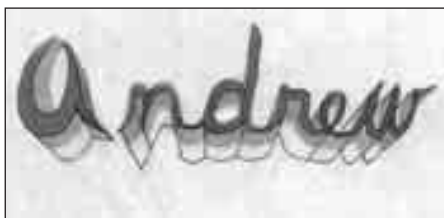


vanishing point – these are called orthogonal lines. They should immediately create the illusion of depth. Draw a horizontal line between the top two orthogonals to create a back edge for the object. Add a vertical line down from the horizontal line to create the side. Erase the orthogonals between the object and the vanishing point. The result should be a 3-D object in one-point perspective.

Try some other shapes placed around the page. Very ambitious students may want to try using their name drawn in block letters.

When the students have finished their projects, discuss the results as a class. Did the vanishing point make it easier for them to draw a three dimensional object? Can they tell which dimensions are in the plane of the drawing (height and width) and which are not (depth)? Can they predict what would happen if there were two vanishing points, as in two-point perspective (only height is in the plane of the drawing)?

Display examples of one-, two- and three-point perspective to the class. (There is a simple explanation with good graphics at http://www.sanford-artedventures.com/create/tech_2pt_perspective.html, or consult an art textbook.)



Andrew Henry: Grade 7, James Strath Public School

6. Final project

Working in small groups of 3 or 4 students, use the Internet and other resources to research one of the following people or ideas:

- Fibonacci and the Fibonacci sequence
- The Golden Ratio (or Rectangle)
- Filippo Brunelleschi and linear perspective
- M.C. Escher: Tessellations
- Impossible figures
- Fractals: Sierpinski's Triangle and other simple fractals
- Computer generated fractal art

Prepare a poster display on your topic, including: a brief biography of the person or history of the idea (1 page); a simple explanation of the mathematical and/or artistic concepts involved (1 or 2 pages); and two or three examples of art or other graphic applications of the idea (photocopies of paintings, sketches, downloaded images, etc.).

Each group should make a short presentation (5-10 minutes) about their findings to the rest of the class. Post the displays for others to see.

Print resources

Hofstadter, Douglas R. 1979. *Godel, Escher, Bach: An Eternal Golden Braid*. New York: Basic Books.

Pattison, Elizabeth, T. Patsiatzis, E. Muller, D. Attenborough. 1997. *Mathematics and Visual Art: an integrated program*.

Brock University: Faculty of Mathematics and Science and Faculty of Humanities.

Ross, Catherine Sheldrick. 1994. *Triangles: Shapes in Math, Science and Nature*. Toronto: Kids Can Press Ltd.

Ross, Catherine Sheldrick. 1996. *Squares: Shapes in Math, Science and Nature*. Toronto: Kids Can Press Ltd.

Ross, Catherine Sheldrick. 1992. *Circles*. Toronto: Kids Can Press Ltd.

Seife, Charles. 2000. *Zero: The Biography of a Dangerous Idea*. New York: Penguin Books.

Internet resources

MathArt: Connecting Math and Geometry -- <http://u2.lvcn.com/esullivan/webquest.html>

Mathematical Art of M.C. Escher -- <http://www.mathacademy.com/pr/minitext/escher>

Fibonacci and the Golden section Fibonacci Numbers in Nature -- <http://ccins.camsun.bc.ca/~jbritton/fibslide/jbfibslide.htm>

The Fibonacci Series <http://library.thinkquest.org/27890/theSeries1.html>

Golden Section in Art and Architecture -- <http://ccins.camsun.bc.ca/~jbritton/goldslide/jbgoldslide.htm>

The Life and Numbers of Fibonacci -- <http://plus.maths.org/issue3/fibonacci/>

Tessellations
Tessellation Tutorials -- <http://mathforum.org/sum95/suzanne/tess.intro.html>

Totally Tessellated -- <http://library.thinkquest.org/16661/escher.html>

Fractals
Cynthia Lanius' Fractals Lesson -- <http://math.rice.edu/~lanius/frac/index.html>

Fantastic Fractals -- <http://www.techlar.com/fractals>

The Factory -- <http://library.thinkquest.org/3288/>

Our Fractal Universe -- <http://library.thinkquest.org/25810/#>

Teachers & Technology: Making The Grade

By Karen Tanaka, vice president
of marketing, Centrinity Inc.
Editorial Sponsorship



A learning organization's ability to enrich today's classroom experience for its students is dependent on one key factor – that learning organization's ability to help its teachers fully understand and use the technology available to them.

Simply implementing a new technology or continuing to upgrade an existing communications system within a learning organization is not enough if its teachers are not trained on new technologies or are having difficulty understanding them. It is equally important for superintendents to embrace the technology as well to help create a well-connected community that motivates its teachers to do the same.

Ferdi Serim, author of *From Computers to Community: Unlocking the Potential of the Wired Classroom*, reinforces this belief as he states in his book that technology doesn't independently improve student achievement in the classroom – teachers do.

According to Mr. Serim, teachers who know how and when to use technology, within an expanding context of good teaching, are more likely to prepare their students to lead more productive, fulfilling lives in a contemporary society. He adds, that teachers that do not know how to do

this must be supported as well by their learning organizations. These learning organizations have to encourage and provide the necessary support system to help its teachers understand how to use the technology and implement it in the classroom experience.

How? By implementing a system that is easy to use and understand. In addition, it is equally important to provide the necessary support and tutorials to aid teachers in their development and understanding of new technologies.

Those teachers that invest the time to better understand how to use the technology available to them within and outside of the classroom can provide a richer learning experience for their students. Additionally they can advance their own professional development through the understanding of new technologies and the tools it offers.

As teachers become more skilled in their ability to understand and utilize certain technologies, they are ultimately transforming their schools into powerful learning communities.

The tools of choice for many learning organizations today, based on a number of industry reports, are collaborative and communications tools that enable teachers to create effective learning communities

that promote equal access to all of their students. Teachers who are able to adapt to these new technologies and fully utilize them in their daily curriculum help their students to tap into new resources and collaborate with other students to complete projects and assignments.

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These same teachers are able to develop their curriculum with ease, as they understand how to use technology to create and improve existing curriculum. These resources can be shared with their colleagues to help save valuable preparation time and enables teachers to securely share best practices so that everyone can benefit from equal access to important information and resources.

Professional Development Is Key

In Margaret Riel and Hank Becker's groundbreaking study titled, "The Beliefs, Practices, and Computer Use of Teacher Leaders" they describe a spectrum of classroom practices. Their research was based on the responses of 4,000 U.S.-based teachers and examined their educational and professional background, philosophy and instructional practices both with and without computers in the classroom.

One of the most interesting findings in Riel and Becker's study is that teachers identified as "Teacher Leaders" in their





schools, district and field were 10 times more likely to use technology available to them and implement this in their daily curriculum. Teachers who spent less time focusing on how to use technology to enrich the classroom experience and their own professional developments scored lower on the test and were labeled as “Private Practice Teachers.”

Making the Grade

According to Stewart Lynch, the director of instruction, technology and information services at the Richmond School District based in Richmond, British Columbia, the best way to help teachers embrace the technology and better understand it is to add a personal element.

Mr. Lynch designed RichNet, an online learning community with Centrinity’s FirstClass Collaborative Groupware and Unified Communication technologies, which enables the Richmond District to liaise with other districts through email, permission-controlled conferences, directories, individual and group calendars.

Teachers are able to securely communicate with colleagues on best practices; share valuable resources and problem solve via RichNet. Teachers can also create assignments and collaborate with their students. RichNet provides an excellent forum for teachers to communicate with their student’s parents to provide updates on their child’s development.

In addition, teachers can also share personal information relating to hobbies or trivia. Mr. Stewart states that this encourages the teachers to navigate through the system and better understand the technology and how it can benefit their professional development and the learning experience for their students.

By using the technology to pique teachers’ personal interest it makes the technology more approachable.

Through RichNet teachers are also able to find valuable resources via the click of a button. A search function in FirstClass enables teachers to conduct a search on RichNet regarding a certain topic and find information within minutes rather than having to start from scratch or go through a number of emails to find information.

Technology is playing an integral role in the professional development of teachers and how they are performing in the classroom.

Teachers are also encouraged to use RichNet as it enables more teacher-student communications through a connected community. RichNet enables teachers to liaise more effectively with their students and create assignments and project work, which can be accessed by the students via the classroom or from home. Parents are able to interact with RichNet teachers with ease and receive updates on their child’s progress. Overall the RichNet experience has been positive for all those involved and has provided an excellent opportunity for its teachers to focus on their own professional development.

Dr. Douglas Books, a professor at Miami University in Oxford, Ohio takes a similar approach to teachers and technology. In a recent report developed by Dr. Brooks he states that many educators believe that technology plays an integral role in transforming how schools deliver education. As

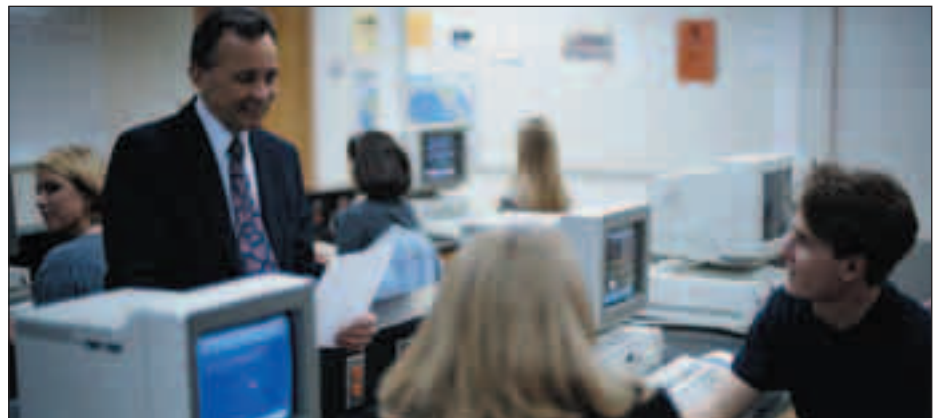
per Dr. Brooks, technology enables teachers to develop student-centered activities that can be accessed by all regardless of demographic location and device. Students are encouraged to work together to collaborate and problem solve. With this in mind, it is key that teachers better understand the tools that are available to them and how it can help them to raise the bar on learning for their students.

To continue to help teachers better understand and utilize the technology that is available to them, it is important for learning organizations to provide the necessary support and training required. Technology is playing an integral role in the professional development of teachers and how they are performing in the classroom.

Teachers learning to embrace the technology and tools available to them are able to provide their students with a well-rounded education. No longer does the learning process stop at the classroom door. It is now extending well beyond the classroom as students are able to access projects and assignments via their computer and collaborate with other students.

Therefore, it is imperative for learning organizations to not only invest the time in upgrading or implementing new technologies but also dedicate the time and resources to ensure that their teachers fully understand how to utilize the technology and tools available to them.

For more information about creating a collaborative learning environment, please visit the FirstClass Web site at www.centrinity.com. To request a copy of Ferdi Serim’s book please email bookrequest@centrinity.com



Canada: Confederation to Present

An Interactive History of Canada



By Dan Lang

Canada: Confederation to Present is a unique way to explore the many facets of Canadian history – from the 1850's to the present day. This CD-ROM/Web publication can serve as a textbook and/or reader for high school and post-secondary students, as a research tool for library users, or as a comprehensive reference for any Canadian history buff who would enjoy owning and exploring some of the best current papers on Canadian history from professionals in the field.

The program is comprised of 24 overview narratives written by Canadian professors of history working under the guidance of a 12-member editorial team from major universities across the country. Supporting the areas explored by the 24 narratives are over 120 “case studies” that explore specific topics and stages in the development of Canada.

Embedded within the narratives and case studies, you will find over 1600 historical photographs, political cartoons of the time, and dozens of rare panoramic photographs that you can actually zoom

into and move around within. As well, within the stories, you will find excerpts of original documents that pertain to specific elements within the narrative.

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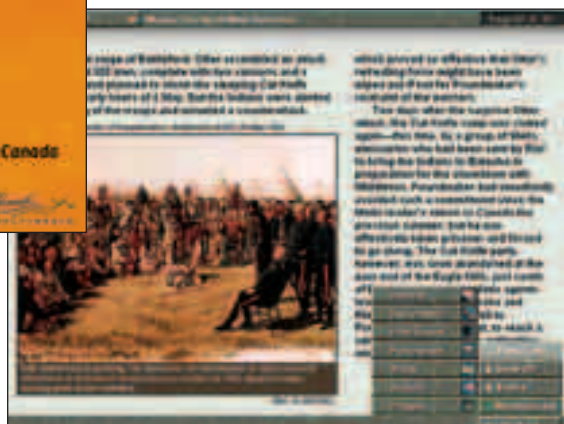
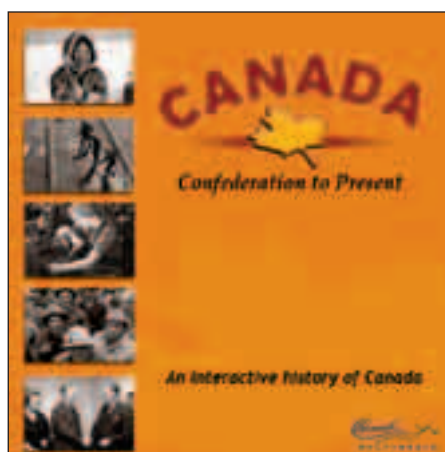
The program's content and navigation pathways are organized around five major narrative themes: Natives, Society/Culture, Women, Politics/Economy, and Regional Dynamics. Within any one of these themes, you are presented with three levels of sub-menus that allow you to access, for example, a period of time within the theme, and, within that period of time, specific events or developments. You can also jump right into the case studies and read, for example, a biography of Laurier, Causes of the Great Depression, the 1990 Oka Crisis, or the story of the Avro Arrow, to name a few.

All the narratives and articles have up-to-date bibliographies for further exploration of an area of research or reader interest. You can also employ any of the pictures, short film clips, etc.,

to enhance a written or stand up oral presentation. This built-in presentation feature is particularly useful for a teacher or a student developing a presentation. The program also has bookmarking capability, a note pad, and a search function.

To my knowledge, Canada: Confederation to Present is the most comprehensive and interactive multimedia program ever created about Canadian history. What really impressed me was how easy it was to browse such a richly diverse range of subject areas. As you may have discovered, finding and comparing resources on the Internet can be a time consuming and, at times, frustrating experience. The quality of writing is excellent, and the text is presented in “chunk” sizes that makes for easy reading on a computer screen. The text is accessible, in terms of reading level, to high school students, yet is rich enough in detail to be of value at the university level. The collection of images on the pages of the narratives and case studies is excellent, and the media items can be easily assembled for use in presentations.

For a generation that is becoming accustomed to using the computer as a reading and research medium, Canada: Confederation to Present is the best Canadian history multimedia resource I have seen. ☺



**This review was taken and adapted from The Learning Village Web site, www.learningvillage.com/html/rCanadaConfederation.html.*

Title: Canada: Confederation to Present

Publisher: Chinook Multimedia

Price: \$39.99

Age Range: Grades 7 & up

Min. Requirements:

Win 95/98, Mac OS 8.0-X

Professional Development Supplement

Welcome to TEACH Magazine's Ninth Annual Professional Development Supplement. Each November, we present a compendium of information for your own use and purpose. We give you an overview in terms of what is new, innovative, and useful across a number of general categories. This way, you can scan for relevant information and decide what interests you. Please remember that what follows contains a narrative description of each product and service only, not an endorsement. Don't forget to inquire about educational pricing and discounts where applicable.

Books



Grolier Academic Reference Grolier Educational released a new reference program, Grolier Academic Reference, one year ago. Grolier Academic Reference publishes multi-volume, subject-specific reference works for high schools, colleges, and libraries. The material, initially available in print and subsequently to be published as part of the online reference collection Grolier Online, is written and edited by specialists and academics. For example, *Encyclopedia of Urban Cultures* is an Academic Reference set that provides a broad range of cultural and historical information on 240 cities in all regions of the world. Published under the auspices of the Human Relations Area Files, Yale University, the four-volume set addresses many key contemporary issues and problems such as ethnic conflict, violence, and social inequality. It enables readers to gain a better understanding of the complexity and diversity of the cities of the world, their peoples, and their cultures. Each article follows a consistent format: orientation, history, infrastructure, cultural and social life, quality of life, the future of the city, and a bibliography. *Encyclopedia of Urban Cultures* is available from Grolier Educational Canada for \$609.00. Purchase before December 31, 2002, and receive the set at a pre-pub price of \$549.00. For further information, call

1-888-836-9149 / 905-873-2750, or visit www.scholasticlibrary.com.

For more information please circle reader service #21



Word Web Vocabulary

Created by retired Cape Cod educator Elinor Miller, the World Web Vocabulary (WWV) series takes a new approach to vocabulary instruction for students in grades 3-12. Rather than present new words in isolation or random lists of words for memorization, WWV unlocks the meaning of words through word webs based on classical language roots. WWV is designed to be the integrating element in a Language Arts lesson plan, tying together elements of style, spelling, grammar and usage, reading and writing, and speaking and listening. Fifteen minutes of daily instruction is needed. WWV is not Web-based and exists only as printed material and as a download from the Internet. Each volume, containing six chapters with six lessons per chapter, covers thirty-six weeks of instruction. Sample Word Web Vocabulary by visiting www.wordwebvocabulary.com. Volume 1, which includes a student workbook and an accompanying teacher's guide, is available for US \$29.95. For further information, and to order, call toll free 1-877-242-1687 or email info@wordwebvocabulary.com.

For more information please circle reader service #22

Software



Mathematica Teacher's Edition

Wolfram Research, Inc. has released an all-new Mathematica Teacher's Edition (MTE) designed exclusively for secondary-level math teachers. MTE comes with built-in courseware and classroom demos, and allows teachers to:

build customized assignments and quizzes; automatically generate answer keys and verify solutions; perform symbolic and numerical calculations in basic math, algebra, trigonometry, and calculus; produce handouts with a full technical word-processing environment; and show students multiple problem-solving approaches to any given problem. Like all Wolfram Research products, MTE supports the platform-independent notebook (.nb) format. You can send notebooks by email or save them as HTML and post them on the Web. MTE is available for Windows 95/98/Me/NT/2000/XP and Mac OS platforms. The suggested retail price US \$195.00. Visit www.wolfram.com/teachersedition for more details.

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Web



Electric Library Canada

Electric Library Canada offers a suite of subscription-based

reference products for K-12 educators. Among these are bigchalk Library Canada and ProQuest Professional Education. bigchalk Library Canada is an extensive collection of Canadian, American, and international multimedia resources. The service contains more than 800 magazines and journals, nearly 200 reference books, more than 200 newspapers and newswires, 5500 maps, 435,000 pictures, as well as radio, TV, and government transcripts. The Book Cart List feature allows teachers and librarians to create customized reading lists, document lists, and Web links for specific homework assignments. ProQuest Professional Education is a database intended for professional development and continuing education. The comprehensive reference collection includes 336 magazine and journal titles addressing all aspects of K-12 education. Teachers can use the collection for advanced degree study, professional in-service research material, or self-guided refreshers. ProQuest Site Builder, included in a subscription to ProQuest Professional Education, allows users to create their own integrated interfaces using the ProQuest database. For further information on bigchalk Library Canada and ProQuest Professional Education, as well as other teacher products, visit www.rogerseducation.com/k-12. Pricing is based on the number of teachers in a school board or district, and includes remote access from teachers' homes.

For more information please circle reader service #24



CuriousCanuck.com

CuriousCanuck.com is a free learning resource for students, teachers, and parents that provides Web resources, tools, services, and teaching materials. The Web site

matches educational material on the Internet directly with provincial and territorial curriculum guidelines. Ontario is the first province to be launched, with BC scheduled for later this year. Visitors begin by choosing their grade level (1-8), followed by the subject and strand of learning for which resources are required. Visit the site at www.curiouscanuck.com.

For more information please circle reader service #25

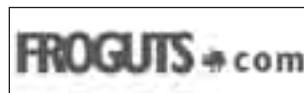


Curriculum Services Canada Foundation

The Curriculum Services Canada Foundation (TCF) believes that practicing classroom teachers are the best source of practical learning materials that meet the needs of new curriculum. Through its Grants

for Teachers, CSC's Foundation has funded 14 projects for elementary and secondary teachers to develop lesson plans and learning resources. Several projects have been posted online and are available for download free of charge at CSC's Web site. Six resources are currently available: Expository Writing (Grades 3-6), Kindergarten Music (Grade K), Narrative Writing (Grades 3-6), Scored Group Discussion An Assessment Tool (Grades 7-12), Resources for Canadian Criminal Law and Procedures Curriculum, and Talk Box (Grades K-3). New resources, developed by teachers and stamped with the CSC Seal of Recommendation, are added continually. The deadline for submission to the next round of grants and awards is April 15, 2003. For further information, call CSC at 1-800-837-3048 / 416-591-1576, or visit www.curriculum.org/tcf.

For more information please circle reader service #26



Froguts.com

If you don't have access to a science lab or simply wish to limit the use

of frogs in dissection, the Froguts Web site offers a free, online dissection for teachers and students. Science teacher and graduate student Richard Hill developed this site after feeling that the "fascination with dissection sometimes overshadows the real understanding of concepts." The site is intended to be used as an ecological tool, for thesis-based research, and for educational content. Downloadable content includes an organ observation sheet, supplemental unit test, group scoresheet for online quizzes and tests, and a cut-out frog model. Visit the site at www.froguts.com. For further information, email comments@froguts.com.

For more information please circle reader service #27



Intuitior.com

Gifted children, IQ, creative education, physics, math, and

chess are main topics at the Intuitior Web site. The physics section contains great ideas for keeping high school students

engaged in class – such as having them apply the principles of physics to Hollywood films. It offers a rating scale for “excessively bad movie physics,” from GP (pretty good physics) to XP (obviously physics from an unknown universe), and supplies teachers with movie mini-lab sheets and reviews. There is also a page on “generic bad movie physics,” which discusses the problems in window breaking, glass shattering, falling, scaling, explosion, and laser-beam scenes. Movies rated include 2001: A Space Odyssey, Star Wars Episode I: The Phantom Menace, Armageddon, Speed, and The Matrix. For details, visit www.intuitor.com/moviephysics.

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For more information please circle reader service #28



The Math Forum @ Drexel

The Math Forum @ Drexel is a leading center for mathematics and mathematics education on the Internet. The Web site provides free resources, materials, activities, mentoring, and educational products and services for teachers and students of all grade

levels. The Teacher2Teacher service allows you to send in questions about teaching and math education. Problems of the Week provides challenges for students in grades 3-12 and ESCOT Problems offers interactive challenges for middle and high school students. The Mathematical Sciences Digital Library collects instructional material with authors' statements and reader reviews, and catalogs mathematics commercial products complete with editorial reviews, reader ratings, and discussion groups. A Math Forum email newsletter is also available. For further information, call 1-800-756-7823 or visit www.mathforum.org.

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Teach e Learn

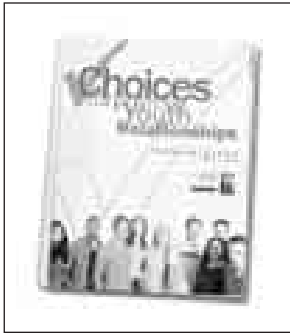
Teach e Learn is a new Web site from the Peel District School Board, Pearson Education Canada, and Innovations Media that offers Web-based professional development courses for teachers. The online courses feature: practical teaching and assessment strategies; teacher tools and student handouts; readings, video demos, and student work samples; peer-to-peer discussion boards and chat rooms; regular scheduled chats with expert course advisors; and certificates upon completion. Teach e Learn courses are self-directed and require approximately 80 hours of study. Once you have registered and paid for a course, you have access to it for four months. Three “Teaching Reading in the Classroom” and “Teaching Writing in the Classroom” courses are currently available, covering grades K-3, 4-6, and 7-10. Three numeracy courses will be released in January, and other subjects are currently under development. Each course costs \$249.99. In addition to courses, Teach e Learn is building a community of teachers and educators. Membership is free, and permits access to public chat and discussion forums. Visit Teach e Learn at www.teachelearn.com. At this time, Teach e Learn courses are not accredited by the Ontario College of Teachers.

For more information please circle reader service #30

Misc

Choices for Positive Youth Relationships

Choices for Positive Youth Relationships is a curriculum-based program for the prevention of relationship abuse. The package includes a documentary film and a 145-page instructional guide.



“A Love That Kills” is a 20-minute film by the National Film Board that tells the story of Monica Speers, a 19-year-old woman who was murdered by her former boyfriend. The Instructional Guide addresses youth relationships (friendships, family, intimate partners, teammates, etc.) irrespective of gender, age, sexual orientation, culture, or

socio-economics. It includes six step-by-step lesson plans, alternative and extension activities, assessment and evaluation tools, and community resources that are linked to specific curriculum in every province. Developed by the Speers Society, Choices For Positive Youth Relationships helps secondary school students identify warning signs symptomatic to abusive relationships, develop skills and strategies to sustain positive relationships, and connect to community resources. Choices is available from the Speers Society for \$75.00. To order, call 905-855-7067, or visit www.speerssociety.org. The Speers Society also offers training workshops for teachers to help them effectively deliver the program.

For more information please circle reader service #31



LEGO Educational Division
LEGO Educational Division
(formerly known as LEGO
Dacta) develops LEGO prod-

ucts specifically for use in the classroom. The classroom sets are based on the familiar LEGO bricks, which allows students to spend more time working on assignments than learning how to use the materials. Sets are available for any age group, from preschool to university, and are tailored to suit curriculum requirements around the world. They include teacher’s guides to help you adapt your teaching to meet official curricula and establish a framework for structured class sessions. While the sets are best suited to science and computer-related subjects, they can also be used to teach biology, geography, and languages. Current subjects include energy, robotics, engineering and mechanical principals, early skills, and early childhood. LEGO Educational Division products can only be purchased from dealers specializing in learning materials. In Quebec, contact Brault & Bouthillier, 700 Avenue Beaumont, Montreal, QC, Tel: 514-273-9186, Fax: 514-273-8627, ventes@bb.ca, www.braultbouthillier.com. In Ontario, contact Spectrum Education Supply, 125 Mary Street, Aurora, ON, Tel: 1-800-668-0600 / 905-841-0600, Fax: 905-727-6265, speedu@attglobal.net, www.spectrumed.com. For further information, visit www.lego.com/dacta.

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POP! makes learning fun

POP! magazine takes kids on adventures through science, history, literature, social studies, world issues and more. POP! has been rated highly by educators for its solid content, its usefulness in the classroom, and its effectiveness as a learning tool.

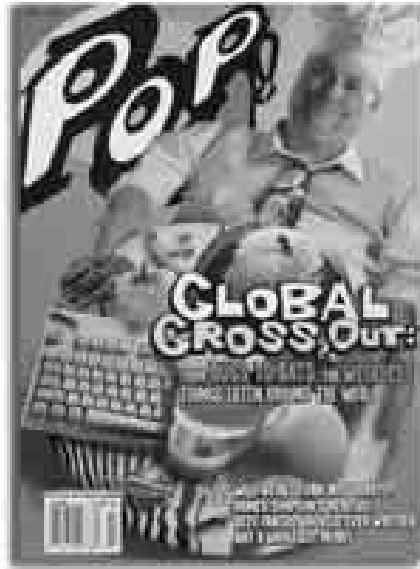
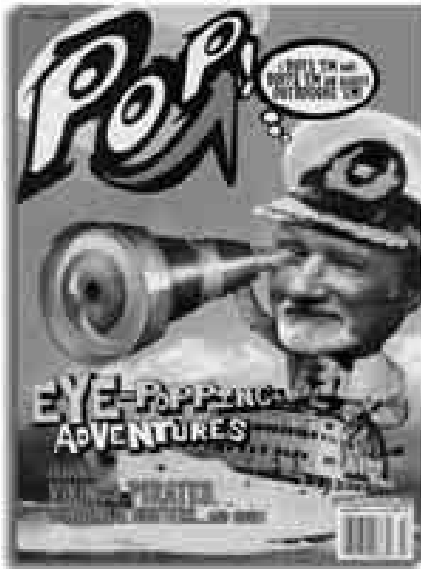
POP! Teachers Online is a free resource that offers curriculum-based programs and activities that relate back to articles found in POP! magazine. Just by visiting www.popmagazine.com, you can download classroom-ready activity sheets and find relevant links to other websites, which include more in-depth curriculum-based programs.

POP! has been rated highly by educators for its solid content, its usefulness in the classroom, and its effectiveness as a learning tool.

Education. Plus you and your students could win great hockey prizes for your classroom and get free tickets to local CHA-sponsored events!

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Here are some of the programs you will find at POP! Teachers Online:

Esso Shooting For Gold brings the excitement of last year's double hockey gold at Salt Lake City back into the classroom. It is a curriculum-based and classroom-proven educational program that uses hockey to teach elements of Language, Math, Science and Technology, Social Studies, Health and Physical

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'Two thumbs up' for school movie production.

By Jeremy Simon / Editorial Sponsorship

Picture a quiet farming community in southwestern Manitoba, not far from the US border. Not exactly a "Silicon Valley". But Boissevain School, a K-12 rural school with 450 students, has become a leader in multimedia education. Boissevain takes full advantage of the power in the Mac platform.

Michael Nantais is a math teacher at Boissevain who is also assigned to handle technology for one quarter of his time. About five years ago, Michael and industrial arts teacher Shawn Kleebaum began looking for interesting types of optional courses to round out a fairly standard curriculum. Boissevain had been using Macs since the days of Classics and Pluses, so they thought courses on software applications and introductory graphics would be a natural fit. The students were enthusiastic.

Heavily into video

Good things have a way of growing, so it wasn't long before an advanced software applications course for Grade 12 students made an appearance. Now Boissevain students were tinkering with 3D graphics and digital video. In English class, students began making newscasts for local access TV. The yearbook was produced in



video as well as print. Grade 6 children experimented with iMovie video plays and showed them to their parents. As Nantais puts it, the entire school got "heavily into video."

Then, in 2001, an unprecedented project was launched for all Grade 12 students. The English class, under the guidance of Colleen Sambrook-Adams, came up with storylines for a movie, and then wrote the screenplay! Says Nantais: "The kids had to research how to write a script, and how the movie world worked. Our advanced software class created a storyboard, and had to research advanced techniques in video production. The creative team spent a couple of days filming around town and the production team did the editing. The process went on through most of the school year."

Big red carpet

When the finished product was ready, the school held a giant premiere event. "We got a big red carpet for the students to walk in on, and we had 300 to 400 people in the gym. The movie was up on a big screen—it was just fantastic!"

The event brought the entire community together, and generated positive feedback from parents and the local newspaper. The students learned several technology-related real world skills; five (including Nantais' own son) are pursuing post-secondary education in film, multimedia or graphics. Next year Boissevain is repeating the filmmaking event—and the kids are looking forward to it.

Video as a learning tool has exploded

What resources does Boissevain have? "Right now we have a lab of G3 iMacs, but we have ordered 5 G4 eMacs because our use of video as a learning tool has exploded.

We are currently converting a classroom to a video production studio, including a green screen area, lights and a seminar and viewing area. The studio will have Final Cut Pro for the advanced classes."

"Boissevain School, a K-12 rural school with 450 students, has become a leader in multimedia education."

"The studio is getting more kids interested in taking the program. We started a new course in Web design this year, and we're moving into Flash, CGI scripting and Java. Also, one of our industrial arts classes teaches students how to produce vinyl signs using Adobe Illustrator. A student even started her own sign business!"

Useful life skills

Nantais is quick to point out that technology is not the only goal. "A lot of it is working together," he adds. "We have a lot of group projects that depend on planning, analyzing and those kinds of useful life skills." He gives a lot of credit to the Mac platform, as well as the dedication of his colleagues and strong support from the division and school administration.

Boissevain School's small size and rural location have not prevented it from becoming a leader in technology education, achieving an astounding level of sophistication in the scope and depth of its projects. Other schools will certainly be interested in the Boissevain model. 🍏

Jeremy Simon is a freelance writer based in Toronto.

The online Educator Advantage Store provides special pricing and affordable financing for teachers and staff of K-12 institutions. Visit www.apple.com/canadaeducatorstore or call 1-800-MY-APPLE (692-7753).

For more stories about computers used successfully in the classroom, visit the Apple Canada web site at www.apple.ca/education.



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