

January 2011

bcamt newsletter

President's Message

People get ready; there's a train a-coming. For some time now, people in various roles in education have been echoing some form of this old refrain. I have heard school administrators, fellow teachers, district leadership, ministry personnel, and various others all predicting some significant changes in education, not only locally, but across the globe. The two most common names for this train are 21st Century Learning and Personalized Learning. The basic claim is that our current system, especially in secondary schools, is outmoded, a relic of the pre-information age, and based on a factory model that may never have been all that appropriate, but certainly is less so now.

The trouble is, alternative models seem ill-defined and mysterious right now. If it is a train coming, it is like a night train, screeching unseen around the corner in the dark. Or perhaps some might suggest it is like the Hogwarts Express, of Harry Potter fame. It may transport us to a magical place of learning, but attempting to board it requires finding its hidden platform by running headlong into a brick wall. And while the Ministry of Education has made some public announcements about its intentions to be on this train, the Ministry is nevertheless somewhat directionless right now as a consequence of the strange state of BC politics.

Just recently, my school district invited Bruce Bearisto, retired superintendent from Richmond, to speak to administrators about leading

in these interesting times. Rather than complain about the lack of direction and the absence of a definition of Personalized Learning, Bruce celebrated the opportunity that we now have to be part of defining the change. He challenged leaders to get creative, finding innovative but practical ways of personalizing learning for students.

Whether you accept the premise that change is needed or not, it is worth paying attention to talk about 21st Century Learning, and engaging in the conversation in constructive ways. Of course, cynics might say that when all is said and done, we will find more has been said than done, but I venture to suggest that at least broadly speaking the ideas being discussed here are going to stay with us.

One idea that features in the 21st Century Learning discussions is the notion of curriculum focused more on broader competencies and less on discrete procedural skills. This idea has already featured in the last two iterations of our BC mathematics curriculum, as the mathematics processes have gained increased attention and the number of outcomes has decreased. Conceptual understanding is emphasized and rote learning of procedures downplayed. A mantra for K through 12 is to plan instruction around 'the big ideas.' It is not unreasonable to assume that these trends in mathematics curriculum will continue in coming years.

Some might feel it is cruel and unusual to discuss further change in curriculum when we have not even

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completed implementing our current one. Others might suggest that any talk of metaphorical trains is best reserved for the train of curriculum change that we have been struggling to keep up with these past few years. I acknowledge the challenges math teachers around the province have been dealing with, not least of which have been this year's new grade 10 courses. Of course, we must also acknowledge that implementation is a process and we will not get it perfect in the first year. It is also worth noting that, as I report later in this newsletter, the acceptance of the new pathways by post-secondary institutions is on the whole better than we had last time around.

In so many ways, these are interesting times. We in the BCAMT will continue to promote excellence in mathematics education, come what may. I thank you and wish you all the best for the part you play in that endeavour.

Post-Secondary Math Requirements Update

Last Spring in this newsletter I reported on decisions some post-secondary institutions had made regarding math requirements and the new 10 to 12 pathways. At that time I noted that each of the three pathways opened some doors to post-secondary programs, and also reported that signs pointed encouragingly to general acceptance of the pathways as intended. That is, it was looking at the time like several institutions were going to approve Foundations courses for general admittance. I also noted, though, that it was difficult to provide a listing of schools, programs, and course requirements that was both comprehensive and brief. As well, the situation was somewhat uncertain because only a few institutions had made firm decisions a year ago.

Now, more institutions have made decisions on math requirements,

and indeed the situation looks rather promising, at least from the standpoint of providing appropriate opportunity for students who take any of the three pathways. In general, a student can graduate with Foundations of Mathematics (in many cases only FOM 11) and enter major universities in BC to take non-science based programs. In fact, some universities and colleges, for which some programs require no specific math course beyond the graduation requirement, would admit a student with Apprenticeship and Workplace Mathematics 11 as their graduation credit. Needless to say, most institutions have appropriately stated Pre-calculus 12 as the requirement for math and science-based programs.

In an attempt to provide information in as clear a format as possible, the following chart lists universities

and colleges and the specific requirement for direct entry from high school to one of a range of representative programs at that school. For those institutions not listed, I could not find information on the new math courses. Programs such as Science degrees and Engineering (or transfer), which will obviously require Pre-calculus 12, have been omitted. As always, any such listing is an oversimplification of the complex variety of available programs and possible paths to post-secondary schooling. Remember that many, if not all, institutions now provide some means of upgrading math requirements for various specific programs. Again, parents and students need to research specific options for themselves by contacting local counselors and advisors at the institutions. Useful information is also available at educationplanner.ca.

Institution	Arts Degree (or transfer)	Business	Carpentry Program	Music	Nursing
BCIT	n/a	Any 11	Any 11	n/a	FOM 11 (B)
Camosun	Any 11	FOM 11 or PREC 11	AWM 11 preferred	Any 11	PREC 11 or FOM 12
Capilano	Any 11	Unclear	n/a	Any 11	n/a
Douglas	FOM 11	FOM 11	n/a	Any 11	FOM 11
Okanagan	Any 11	Any 12	Any 11	n/a	PREC 11
Selkirk	Any 11	FOM 12 or PREC 11	AWM 12 (or PREC 11 or FOM 11)	Any 11	FOM 12 or PREC 12
SFU	FOM 11 or PREC 11	FOM 11 or PREC 11	n/a	FOM 11 or PREC 11	n/a
TRU	Any 11	PREC 12	Any 11	n/a	FOM 12
UBC	PREC 11 or FOM 12	PREC 12	n/a	PREC 11 or FOM 12	PREC 11 or FOM 12
UBC-O	Any 11	PREC 12	n/a	n/a	PREC 11 or FOM 12
UNBC	Any 11	PREC 12	n/a	n/a	PREC 11
UVIC	PREC 11	PREC 12	n/a	FOM 11	n/a
VCC	Any 11	Any 11	n/a	Any 11	Any 11

* Please note that many institutions also have placement testing to determine math requirements.

Ministry of Education Update

Numeracy Performance Standards

The Ministry of Education is continuing to work to update and extend the Numeracy Performance Standards (NPS). The NPS are designed to assist in on-going formative assessment and assist teachers in their classrooms. The NPS will help integrate assessment of the mathematical processes with assessment of concepts and procedures related to the revised curriculum.

To allow all BC educators to contribute to the process the Ministry has developed an educators only Moodle in conjunction with LearnNowBC. The Moodle includes discussion forums, prototypes of assessment tasks, rubrics, assessment tasks under development, student samples and opportunities for professional dialogue. Information on the NPS Moodle can be found on the LearnNowBC website at: <http://www.learnnowbc.ca/educators/BCPerformStand.aspx>

Mathematics 8 and 9 Classroom Assessment Model Wiki

In 2008 the Ministry of Education contracted teachers to

develop content for a Mathematics 8 and 9 Classroom Assessment Model (CAM) Wiki to support the Mathematics 8 and 9 IRP. This wiki is still active and teachers are encouraged to sign up and participate in adding content to the site. Please see: <http://bcmath89cam.wikispaces.com> to be involved.

Curriculum Listserv

The Education Standards Unit has established a listserv for people who would like to receive e-mail notification of curriculum information updates. Information on this listserv can be found at: <http://www.bced.gov.bc.ca/irp/subscribe.php>

Ministry Discussion Forum

The Ministry has created an open Discussion Forum to provide opportunities for sharing and discussion of curriculum related issues for each subject area within the BC provincial curriculum. Educators can access the forum at: <http://tinyurl.com/educationcurriculumforum> to participate in the discussion.

NCTM News (Reprinted from NCTM news bulletin)

Get Ready, Get Set...for Indianapolis!

Math educators from around the world will gather for NCTM's Annual Meeting in Indianapolis, April 13–16. Be sure to join them and hear keynote speaker Jeffrey Travis, director of the new IMAX 3-D movie *Flatland*, kick off the conference at the Opening Session. This is just one of more than 650 presentations, providing opportunities for participants to network, collect free classroom activities, and learn about the latest hot topics in mathematics education. Register by March 4 to save up to 25%.



Illuminations Announces New Applet

A new applet, Function Matching, challenges students to find the function expression that matches a generated function graph. For extra fun, students can choose from several function types, or they can let the computer pick for them.

2009 Program for International Student Assessment (PISA)

The results of the 2009 Program for International Student Assessment (PISA), released on December 7, demonstrate a need to focus on the problem solving skills of U.S. students in mathematics. PISA results show that U.S. students performed below average, while Canadian 15-year olds performed well above average, as compared with their counterparts in the 34 industrialized countries in the mathematics assessment. Read NCTM's news release and talking points with key information from the report.

Change at Illuminations

Illuminations has yet another new, interactive tool! With Coin Box, students can count, collect, exchange, and make change with pennies, nickels, dimes, and quarters. A hundreds grid provides an additional representation to make it easier for students to learn the value of each coin and understand the relationships among coins.

Assessment Publication Announcement

...how do you make feedback meaningful?

It is one thing to accept the fact that feedback can allow students to begin to navigate their own learning. It is quite another thing to do this in ways that are meaningful for students while at the same time being manageable for teachers. In the next story, Linda tells how she not only found a way to give feedback to her high school mathematics students that helped them to become agents in their learning, but also how she did so within the context of something familiar to all of us – the math quiz. Although she was skeptical at first, the results of her efforts are undeniable.

The above is the prefatory material that sets up one of the stories to be published in a forthcoming book from the BCAMT. We are quite excited about the approaching release of this publication. For the past two years, a BCAMT subcommittee has been working on this project as part of our objective to support mathematics teachers in understanding new developments in assessment practices.

As you can see from the preamble above, the intent of the publication is to present true stories of assessment innovation, both the struggles and the successes, in a spirit of inquiry. No one has all the answers with respect to assessment practices, and indeed, we are becoming convinced that formative classroom assessment is a highly personal endeavour. BCAMT Past President, Rob Sidley, suggests that when it comes to assessment, everyone must build his or her own light saber.

I have been trying to improve the formative assessment in my math classes for some time. In research I read that

students improve most when they get written feedback without marks. I wanted to try this even though I was pretty sure my students, who are in grades eight through twelve, would resist the idea. My first attempts were not very effective, and took me a long time and a lot of effort as I was not very good at giving verbal feedback. So, I decided to use a highlighter to recognize a student's areas of understanding. I tried it on a quiz first, because I felt that quizzes really are meant to be formative assessment. I made a short quiz and used highlighters to emphasize correct thinking, and to note trouble areas. I didn't mark anything with tick marks or x's, and I didn't give the quiz a total mark.

So opens Linda's story. She goes on to explain her innovation in more detail, and to give some of the results she sees in her students. She also explains some of the adjustments she has made, and is making, to the strategy and other parts of her practice as a result of this new technique.

You can tell from this small sample and Linda's admission of her early struggles that these stories are not white-washed. They are not merely empty theoretical musings, either. Rather, each story will present an actual strategy (or sometimes several related ones) that a teacher has tried. The intent, though, is not that readers necessarily adopt every strategy described, but rather the real value will be found in listening to the teacher's reasoning, both the thinking that leads up to the innovation and the reflection upon its implementation.

While all the stories will in many ways promote reflection and dialogue on their own, the subcommittee members, as we edit the volume, will bracket each story with supplemental material that will help readers extract

maximum benefit from the resource. In addition to a preamble like the one above, each story will be followed by a set of suggested questions for further discussion. We envision that the nature of these stories will provoke informal dialogue among colleagues, and that the book will also be useful to focus formal workshops or discussion groups on assessment.

...further discussion

1. *How is what Linda did an example of how feedback can be made meaningful?*
2. *We tend to think that unless something is worth marks high school students will not take it seriously. Linda was worried about this as well. But, it turned out not to be an issue. Why is that? What was it about what Linda was doing that allowed it to succeed even in the absence of marks?*

At the fall conference in October, two members of the subcommittee in charge of this project presented Linda's story as a preview of the book to come. We found the discussion questions, like the two above, indeed provoked deep and meaningful professional discussion among the session participants. We have thus seen the power these shared stories can have to motivate inquiry into assessment issues.

If all goes according to plan, we will be publishing this book of assessment stories around Spring Break of this year. Our sincere hope is that it proves to be a lively resource. It may raise more questions than it answers, but we feel the kind of answers needed will only be found through the sort of inquiry this book is intended to promote and support.

Outstanding Secondary Teacher Award Winner

In recognition of her exemplary teaching, her innovation, and her school and district leadership, the BCAMT is pleased to honour Michelle Relova with its Outstanding Secondary Teacher award. Though Michelle was unable to attend the Fall Conference in person to receive the award, BCAMT President, Dave Van Bergeyk, announced her achievement there, and later had the opportunity to deliver the plaque to Michelle at her school in West Kelowna. While there, Dave met both Michelle and her principal, Jamie Robinson, who echoed the sincere praise he had given of Mi-



Michelle receives her plaque in her classroom.

chelle in his nomination letter. “She’s a superstar,” Robinson noted. “You [at the BCAMT] need to share what she’s doing here in our school.”

It is certainly our pleasure to report some of the excellent work that Michelle is doing at Glenrosa Middle School and throughout School District 23. By all reports, Michelle’s classroom is a pretty exciting place to be learning mathematics. She has embraced the challenges of the pedagogical shift embedded in the new curriculum, and refashioned her practice around inquiry-based learning. In order to support her students in reaching high expectations, Michelle has also adopted innovative assessment practices, which help define for students what success looks like, helping them know where they are on the learning path and how to progress. In addition, Michelle has significantly included parents in the feedback loop by setting up an exemplary parent communication system. All of this is built on the important foundation of strong relationships with students. Small wonder

that some of Michelle’s students say she is the best teacher they have ever had.

But Michelle’s impact on student learning is not limited only to those who are in her classes, because Michelle has also consistently shared her growing expertise with colleagues at Glenrosa and throughout her district. Robinson reports that mathematics achievement is improving across the school, and even other departments are consulting Michelle in their efforts to improve assessment. District leaders, including Numeracy Coordinator, Lorraine Baron (a former BCAMT award winner herself), send teachers to watch Michelle in action, and have called on Michelle to contribute to district initiatives. According to Robinson, she has done an incredible amount “to move pedagogy towards best practice over the past two years.” We are pleased to honour Michelle for these outstanding achievements, and to spread the word about her success in hopes of promoting such excellence throughout the province.

BCAMT Grant Winners

Each year the BCAMT offers grant funds to its membership. The funds must be used to further mathematics education in BC. In the past these funds have been used in many different ways, from original (action) research in the classroom with teams of teachers, to mathematics activities outside of the classroom. The requirement is that these initiatives must meet the Goals and Objectives of the BCAMT.

If you have an idea that you would like to explore together with a team of teachers, then consider submitting a grant application.

The BCAMT values the sharing of ideas and requires that successful applicants submit an article detailing their initiatives and results for *Vector* and a summary for the newsletter.

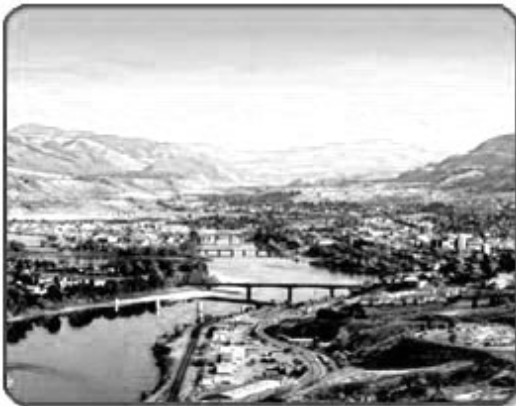
The 2010/2011 Grant Recipients are as follows:

1. Rick Smith – Assessment for Learning Workshop Series
2. Kim Murcheson – Mathematics 10/11 Pathways Selection Resource
3. Marthe Sivecki – Professional Learning Community
4. Mihai Georgescu – Math Challengers
5. Erica Hopkins – Integrating Technology into Mathematics Classroom
6. Charles Schilling – Professional Development Workshop Series - Teaching Mathematics with Manipulatives
7. Lenora Milliken – Problem Solving with Technology
8. Katie McCormack – Grade 7 Mathematics Enhancement Program



BCAMT Interior Mathematics Conference

Friday 20 May 2011
Kamloops, BC



Contact Brad Epp for
more information:

bepp@sd73.bc.ca

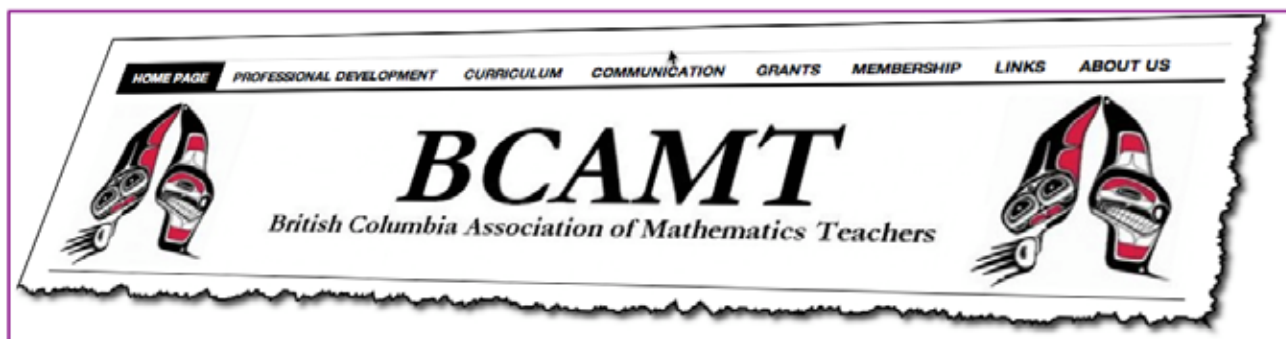
Elections

According to article 5 of the BCAMT constitution, the offices of president, vice-president, secretary, and treasurer shall be filled by elected members for a term of two years. All other executive positions shall be appointed by these table officers for a term of one year. All executive position terms except for the president can be renewed. Upon completion of a table officer's term of duty, the executive will endeavour to nominate at least one person for the opening. Other nominations can be made by any two members of the association.

This year, nominations will be accepted for all four elected positions. Nomination forms can be obtained by contacting current past president, Michèle Roblin, m.roblin@shaw.ca.

Completed nomination forms can likewise be sent to Michèle. Nominations must be received by 4 March 2011. If needed, a vote will occur by mail-in ballot before April 21.

We've got a new site, and a new address!



www.bcamt.ca

BCAMT



Regional Meetings

The BCAMT Executive is pleased to offer a series of regional meetings again this year.

This initiative is designed to keep teachers around the province in touch with the BCAMT and up-to-date with their plans and goals for the current year.

We invite math coordinators, classroom teachers, and administrators from all regions of the province to attend one of these meetings for a discussion of key issues and a professional workshop. An update on Ministry information will also be provided. The BCAMT is providing a free lunch for all participants, but *each participant must arrange for TOC coverage for the day*. Most meetings go from 9 am to 3 pm.

Plan to attend one of the meetings listed at right. Email the contact listed to register.

Feb 18: **Interior** (Kelowna)

Contact: Lorraine Baron
(lbaron@sd23.bc.ca)

March 3 (evening): **North** (Prince George)

Contact: Wendy Mundie
(wmundie@sd57.bc.ca)

April 13: **Metro Vancouver** (Vancouver)

Contact: Chris Stroud
(cstroud@wpga.ca)

April 29: **Interior** (Castlegar)

Contact: Denise Flick
(dflick@sd20.bc.ca)

May 13: **North** (Terrace)

Contact: Stacey Brown
(staceynmarty@gmail.com)

Spring 2011 TBA: **Island** (Nanaimo)

Contact: Denise Wood
(dwood@sd68.bc.ca)

Spring 2011 TBA: **Fraser Valley** (Abbotsford)

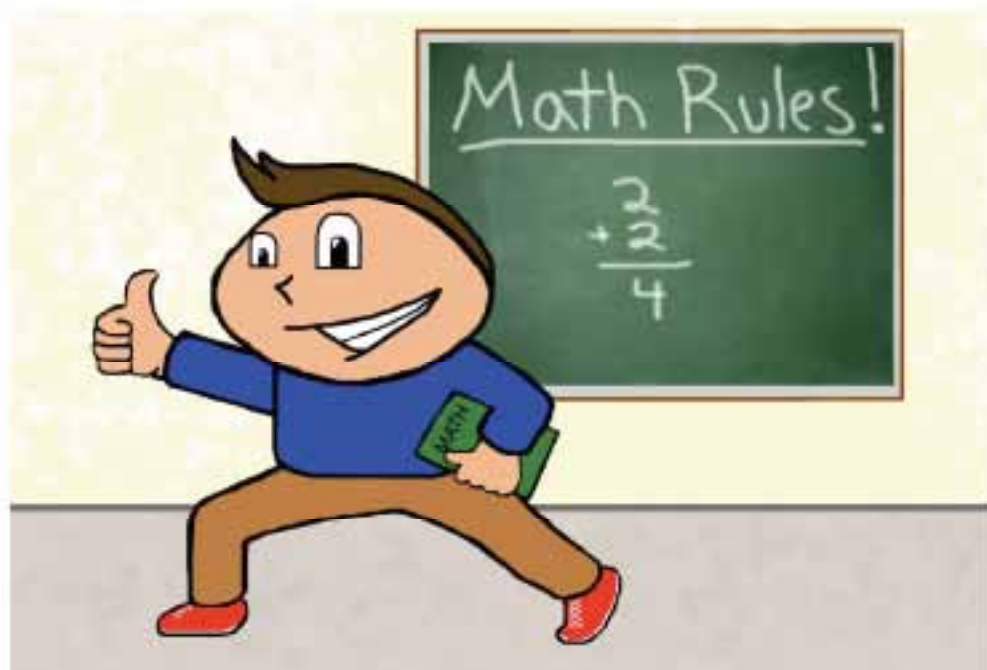
Contact: Michael Finnigan
(Michael_Finnigan@sd34.bc.ca)

General questions:

Email: Chris Becker
BCAMT Vice President
(cbecker@summer.com)

Register Online!

<https://register.bcamt.ca/newteachers>



BCAMT New Math Teachers' Conference 2011

Saturday, February 12th, 2010— Richmond, BC

Registration Includes:

- BCAMT Membership
(which includes a subscription to our Vector publication)
- Lunch
- Great Ideas & More!

This conference is geared towards teachers who are new to teaching Mathematics. Sessions will be offered about assessment, classroom management, and the mathematics curriculum.

Check out www.bcamt.ca for further information.

Registration Fees before February 11:

Teacher / TOC: \$60
Student Teacher: \$35

On-site registration:

Teacher / TOC: \$70
Student Teacher: \$45

Register Online:

<https://register.bcamt.ca/newteachers>

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