

## From the Editor's Pencil

**A**s another school year winds down, we teachers seem to be more and more overwhelmed by our workload—as you can see from the sparse content of this issue of the *Mathematics Council Newsletter*.

As the curriculum becomes more bulky, teachers who continue to try to cram everything into the time allotted are becoming frustrated and anxious. Colleagues with whom I have spoken have said that this year has been one of the worst for them in that regard.

We must try to remember (and convince the powers that be) that greater depth of content is better than more content. Our students need time to investigate, process, analyze and synthesize if they are to truly understand and appreciate the beauty and joy of mathematics.

I gratefully acknowledge those who found time to put something together for this final issue of the year, and I urge readers to take a few minutes to read everything. It won't take you long!

—Anne MacQuarrie

## Executive Meeting Summary

**A**n MCATA executive meeting was held January 13 and 14 in Edmonton, with 16 executive members in attendance.

The executive discussed at length the proposed changes to the K–6 curriculum in the new WNCN document. It was decided that three members of the executive would attend an ATA Curriculum Circle Committee meeting in January.

The Conference 2005 (Edmonton) committee presented its report. The professional development committee continued to plan for Conference 2006 in Jasper. More details were finalized regarding the May 2006 symposium in Calgary and the October 2006 symposium in Jasper.

The publications committee reported that the newsletter, *delta-K* and the website were being published with some minor changes. The first newsletter of the next school year will feature the upcoming conference and will be sent out to members in early September.



# Alberta Education Update

## Graphing Tool

A powerful graphing tool is now available at no cost from Alberta Education through the LearnAlberta.ca website. This resource can be used to graph mathematical functions or relations. Graphs of the absolute value, reciprocal and inverse of a single function can be compared with the single defining function. As well, graphs of the sum, difference, product, quotient and composition of two functions can be compared with the two defining functions. When a parameter is dynamically changed, all graphs related to functions or relations with that parameter will also change dynamically.

To download the graphing tool, follow these instructions:

1. Go to [www.learnalberta.ca](http://www.learnalberta.ca).
2. Enter your user ID and password (these should come up automatically when you attempt to log-in at your school).
3. Select Login as an Authorized User.
4. Select Grade 10, Grade 11 or Grade 12.
5. Select Mathematics.
6. Select Graphing Tool.
7. Download the PC or Macintosh version.
8. Download the user manual for detailed examples of how the tool can be used.

If you have any problems, questions or feedback, please contact Ron Blond at (780) 415-8527 or [ron.blond@gov.ab.ca](mailto:ron.blond@gov.ab.ca).

## Revisions to the K–9 Curriculum

A final consultation was held in February 2006 to provide feedback on the Western and Northern Canadian Protocol (WNCP) Common Curriculum Framework (CCF), on which the revised Alberta program of studies for K–9 mathematics will be based.

The proposed implementation schedule is as follows:

	2007	2008	2009	2010
Optional	K, 1, 4, 7	2, 5, 8	3, 6, 9	
Provincial		K, 1, 4, 7	2, 5, 8	3, 6, 9

For more information, contact Jennifer Dolecki at (780) 427-5628 or [jennifer.dolecki@gov.ab.ca](mailto:jennifer.dolecki@gov.ab.ca).

## Mathematics Roundtable

The Mathematics Roundtable (MRT) has been established to increase communication among stakeholder groups as work continues on revisions to the high school mathematics curriculum. The MRT includes teachers and representatives from postsecondary institutions, business and industry. The group is considering the options for the structure and content of high school mathematics, and will make recommendations to Alberta Education's External Mathematics Advisory Committee.

For more information, contact Lorne Lindenberg at (780) 644-5318 or [lorne.lindenberg@gov.ab.ca](mailto:lorne.lindenberg@gov.ab.ca).

## Mathematics Facilitator Workshops

The Learning and Teaching Resources Branch (LTRB) has completed the junior high mathematics facilitator workshops. The Regional Consortia will continue to offer these sessions on best practices in mathematics education into the next school year. Elementary mathematics facilitator workshops are scheduled to begin in the fall.

## Resource Development

Publishers have started developing new resources to support implementation of the revised Alberta program of studies for mathematics. Publishers are working closely with Alberta Education to ensure alignment with the outcomes and philosophy of the WNCP K–9 CCF for mathematics.

For more information, contact Debbie Duvall at (780) 422-3257 or [debbie.duvall@gov.ab.ca](mailto:debbie.duvall@gov.ab.ca).

# Conference 2006

## “Pathways to Understanding”

October 19–21

Jasper Park Lodge, Jasper

Don't forget to visit the MCATA website ([www.mathteachers.ab.ca](http://www.mathteachers.ab.ca)) for details about MCATA's upcoming annual conference, to be held October 19–21 in Jasper.

The keynote speakers will be John Mason, of the Open University in the UK, and Edward Burger, of Williams College in Williamstown, Massachusetts.

A symposium featuring Anne Watson of the University of Oxford will be held on October 19 in conjunction with the conference.

Those of you who were in Jasper last time may recall the amazing scenery, the glorious weather and the outstanding speakers. This conference is shaping up to be even better! Register early and book your rooms. It's going to be great!

## Keynote Speakers

### John Mason, Opening Keynote

John Mason is a long-time math educator who for 15 years has led the Centre for Mathematics Education at the Open University in the UK. His *Thinking Mathematically* (Addison-Wesley, 1982), coauthored with Leone Burton and Kaye Stacey, has become a classic. Translated into four languages, it is still used in countries around the world with advanced high school students, with prospective schoolteachers and with undergraduates in courses that invite students to think about the nature of doing and learning mathematics. *Learning and Doing Mathematics* (Macmillan, 1988) was originally written for Open University students and then modified for students entering university generally.

Mason's other interests include the study of how authors have expressed to students their awareness of generality, especially in textbooks on the boundary between arithmetic and algebra, and ways of working on and with mental imagery in teaching mathematics. His book *Practitioner Research Using the Discipline of Noticing* (Routledge-Falmer, 2001) is one manifestation of a lifelong collection of tactics and frameworks for informing the teaching of mathematics.

### Edward Burger, Closing Keynote

Edward Burger is chair and professor of mathematics at Williams College in Williamstown, Massachusetts, and an associate editor of the Mathematical Association of America (MAA) journal *American Mathematical Monthly*. His research interests lie in number theory, and he is the author

of more than 30 research articles, three books and five CD-ROM virtual video texts.

Burger has received many awards and honours, including the 2000 Northeastern Section of the MAA's Award for Distinguished College or University Teaching and the 2001 MAA Deborah and Franklin Tepper Haimo National Award for Distinguished College or University Teaching of Mathematics. In 2002/03 he was the Ulam Visiting Professor at the University of Colorado at Boulder, where he was awarded the 2003 Residence Life Teaching Award. The MAA named him the 2001–2003 Polya Lecturer, and in 2004 he was awarded the MAA's Chauvenet Prize.

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## Conference Attendance Grant

In October, the ATA Educational Trust will award 35 grants of \$300 each to teachers planning to attend an ATA specialist council conference in 2006/07. The application form can be downloaded from the ATA website. Go to [www.teachers.ab.ca](http://www.teachers.ab.ca), click on Grants, Awards and Scholarships (under Professional Development), then click on The ATA Educational Trust.

The application deadline is **September 30**. Applications that meet all the criteria will be entered into a draw. All applicants will be advised by mail in early October of the results of the draw.

The Conference Attendance Grant will be paid only after the recipient has attended the conference and has submitted receipts for expenses incurred. Eligible expenses include registration, travel, accommodations and expenses not covered by other grants.

If you have a question about the grant or the procedure, please contact Violette Bigeat at [violette.bigeat@ata.ab.ca](mailto:violette.bigeat@ata.ab.ca).



# Resource Review

***How Much Is Some?* (story), written by Dana Newby and illustrated by Pat Erickson**

***Teacher Resources* (CD), created by Kim Butler, Marlene Denet, JoAnn Grand Pooley, Dana Newby and Gladys Sterenberg**

The story *How Much Is Some?* and its accompanying *Teacher Resources* CD are the products of a teacher study group on the history of numbers. Engaged in a community of learners during 2004/05, five elementary teachers created and implemented a series of lessons based on a mathematical story written by Dana Newby, a member of the group.

The setting of the story is depicted through Pat Erickson's beautiful watercolour renderings of ancient Egyptian landscapes, villages, markets and people. The story relates the problems of Majed and Neferet, a peasant couple who want to trade some potatoes for some goat's milk. In a world without numbers, the story investigates issues of quantity and fairness. How much is *some*?

The tale prompts students to think about the human role in the development of number systems. It involves significant philosophical questions that have arisen throughout the history of mathematics: What are numbers? Why do we use numbers? How might numbers have been invented? What would a world without numbers be like? How do we engage in mathematics? What is mathematics?

In addition to philosophical issues, the story presents the mathematical significance of *some*. Classifying collections, comparing sets, counting,

ordering, identifying patterns and identifying one-to-one correspondence are some of the foundations of number theory. Of central importance in the development of early number concepts is understanding how much *some* is. Thus, the investigation of the quantity of *some* in the story is mathematically valuable.

The accompanying CD, *Teacher Resources*, includes a variety of tasks focused on measurement, rate, equivalence and pattern recognition. Interviews with the teachers, the author and the illustrator provide practical suggestions for integrating the story into elementary classrooms. Student responses and connections across curricular disciplines are also provided. A student reading of the story can be used in a listening centre.

The story and CD have been created for use with Grades 3–5 students and are correlated with Alberta's program of studies. Because the story focuses on the relationship between people and mathematics, it offers a unique perspective for students, who will engage with the story and wrestle with its meaning.

The story and CD are available for \$15 from the Centre for Mathematics:

Centre for Mathematics  
Science and Technology Education  
382 Education South  
University of Alberta  
Edmonton, AB T6G 2G5  
Phone: (780) 492-0148  
E-mail: cmaste@ualberta.ca

—Gladys Sterenberg

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