



# Mathematics Council NEWSLETTER

The Alberta Teachers' Association

*Providing leadership to encourage the continuing enhancement of teaching, learning and understanding mathematics.*

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## President's Message

### Mathematical Literacy

On May 3 in Red Deer, the Mathematics Council held a successful spring symposium with representation from around the province. The symposium focused on mathematical literacy and included background on MCATA's decision to focus on mathematical literacy, selected articles to read and discuss, and a presentation from David Pugalee of the University of North Carolina at Charlotte.

A goal of the symposium was to hear what mathematics education leaders from around the province think about mathematical literacy and what mathematical literacy means for Alberta students. In symposium feedback, many participants indicated that the symposium affirmed their thinking about mathematical literacy. From the table discussions, participants generated a list of what mathematical literacy involves:

- ✦ Communicating using the language of mathematics in a variety of forms
- ✦ Using mathematics appropriately in a variety of contexts
- ✦ Connecting mathematics to the real world (math for real life)
- ✦ Appreciating mathematics
- ✦ Analyzing and evaluating mathematical thinking

- ✦ Being conscious of what has been learned (metacognition)

We will use this information to further our work of producing a pamphlet and referent paper on this important topic. Watch for information about the fall symposium, where we intend to extend our work on and understanding of mathematical literacy.

So, how do people answer when you ask, "What does mathematical literacy mean to you?" We'd love to hear your stories!

### NCTM

The American National Council of Teachers of Mathematics (NCTM) 80th Annual Meeting was held April 21–24, 2002, in Las Vegas.

I attended an amazing session: "Mathematics in Stone and Bronze," an illustrated lecture by Helaman Ferguson and Claire Ferguson. Helaman is a mathematician and sculptor who "loves the beautiful truths of mathematics, clothing them sensuously in the materials of the earth." Check out this wonderful math-art connection on his website at [www.helasculpt.com](http://www.helasculpt.com).

Be sure to visit NCTM's Illuminations website at [illuminations.nctm.org](http://illuminations.nctm.org) for great interactive math activities for all grades. The site also includes video clips of mathematics classrooms to generate discussion about the teaching and learning of mathematics.

—Sandra Unrau



## From the Editor's Pencil

This has been a year of learning for me as the new editor of *Mathematics Council Newsletter*. (But now that a whole year has gone by, I guess I'm not really new anymore.) I've enjoyed the experience and am looking forward to next year and more math learning.

An interesting thing I did this year, as a teacher and a member of MCATA, was present at the Faculty of Education Student Teacher Mini-Conference at the University of Calgary. Many students are starving for ideas about implementing curriculum in the classroom. I talked to them about the area model of multiplication, emphasizing the need for and demonstrating the use of concrete materials to develop a mental picture of multiplication. (In the midst of my preparation, I ended up explaining the model to my 20-year-old son. He was quite excited when he tried it and found he could even use the technique to multiply large numbers.)

The students were receptive and wanted to know more—more about materials, more about resources, more about MCATA, more about NCTM, more about how they learn to teach math. We need to remember this when we have new teachers on staff. They need us to be there for them, to provide a safety net when they begin to feel overwhelmed. This may be more and more necessary in today's educational climate.

—Anne MacQuarrie

## MCATA Grants

Grants worth \$500 each are available for mathematics education initiatives that support current learning and teaching practices and/or current priorities as outlined by or through Alberta Learning, school districts, MCATA, NCTM, the ATA or other reputable educational associations. Application deadlines are May 1 and December 1 of each year. For full details and the application form, visit [www.mathteachers.ab.ca](http://www.mathteachers.ab.ca). Send grant applications to Lorraine Taylor, 10 Heather Place, Lethbridge T1H 4L5; fax (403) 329-4572; e-mail [lorraine.taylor@lethsd.ab.ca](mailto:lorraine.taylor@lethsd.ab.ca).

## Mathematics Educator of the Year Award

We all know teachers who deserve special recognition. Now is your chance to nominate a teacher for the Mathematics Educator of the Year Award, to be presented at the MCATA annual conference being held in Canmore October 31–November 2, 2002. Nominations must be received no later than July 15, 2002.

Nominations must include the following:

- ✦ Name, address and phone number of the nominee
- ✦ Name, address and phone number of the school at which the nominee has taught in the past year
- ✦ Grade the nominee taught in the past year
- ✦ Letter(s) from the administrator and/or colleagues who wish to nominate the teacher
- ✦ A statement (in as much detail as possible) of why this person deserves to be recognized as the Mathematics Educator of the Year

Send your application to Lorraine Taylor, 10 Heather Place, Lethbridge T1H 4L5; e-mail [lorraine.taylor@lethsd.ab.ca](mailto:lorraine.taylor@lethsd.ab.ca).

## Dr. Arthur Jorgensen Chair Award

The Dr. Arthur Jorgensen Chair Award is presented by MCATA to encourage students enrolled in education programs in postsecondary institutions throughout Alberta to pursue and commit to mathematics education. The award consists of a one-year term on the MCATA executive, with all expenses paid to attend executive meetings. It also includes a three-year MCATA membership and a one-year NCTM membership. The winner will be invited to attend two MCATA conferences with all expenses paid. For more details and an application form, visit [www.mathteachers.ab.ca](http://www.mathteachers.ab.ca).



## Dialogue

*Sheryl Gulas teaches Kindergarten at Sunnyside Community School in Calgary.*

As I think about beginning a new school year in September, I reflect on how I can best approach mathematics education with Kindergarten children.

I believe it is important to begin with helping them understand what numbers mean. This will help them make sense of the way numbers are used in their everyday world. Counting skills, essential for ordering and comparing, are only one important aspect of understanding numbers. Asking children questions such as "What does the number 2 look like?" can elicit their own ideas about what a number means. As an educator, I must ensure that numbers and numeracy are taught in ways that have meaning for children.

Meaningful experiences can be derived from rich literature filled with mathematical vocabulary and concepts. My students are often drawn to the math stories that allow them to predict ways to solve problems. Because literature can present ideas and problems that consider the understandings, interests and experiences of children, it engages their intellect and provides a context for math.

Early mathematical experiences in the classroom should also allow children to manipulate objects and then use their own language to explain their thinking. This often occurs during free play. Through play, children learn many things, including problem-solving strategies. My role is to facilitate mathematical experiences as the children use manipulatives. I need to question and challenge their thinking. I want to help them communicate about mathematics and connect it to their everyday experiences. This encourages children to reflect on their own actions and construct their own meanings.

Most important, I hope to foster a love of math when guiding my students' mathematical understanding. Four- and five-year-old children enter Kindergarten with diverse experiences and backgrounds, and I must be sensitive to their individual differences and acknowledge their need to construct meaning within their environment. This is key in creating a connection between their world and the world of mathematics.

—*Sheryl Gulas*

## Mathematics 30 Student Projects

MCATA invites Pure and Applied Mathematics 30 teachers to submit student projects. The best student project from each course will be awarded \$50 and published in a future issue of *delta-K*.

Note the following guidelines for submission:

- ✦ Include a hard copy with an electronic submission.
- ✦ Complete the application form, including the student's name, address and phone number; the teacher's name; and the school's name and address.
- ✦ Have the student sign a release form, making the project the property of MCATA.

The deadline for submissions is July 15, 2002. The application form is available at [www.mathteachers.ab.ca](http://www.mathteachers.ab.ca).

## Mathematics 30 Student Projects Results

"Sunrise and Sunset," submitted by Shari Monner, was deemed the best Pure Mathematics 30 student project. Shari is a Grade 12 student at Holy Family CyberHigh in High Prairie, and her teacher is Sheryl Heikel.

"Medical Research: Huntington's Disease," submitted by Mark Fredrick, a Grade 12 student at Barrhead Composite High School in Barrhead, was the best Applied Mathematics 30 student project. His teacher is Leahan Schaffrick.

Each outstanding project was awarded \$50 and will be published in the next issue of *delta-K*.

Congratulations to the winners, and thanks to all students and teachers who submitted projects.



## Summit in Canmore: Call for Speakers

MCATA invites you to speak at its annual conference, to be held October 31–November 2, 2002, at the Radisson Hotel and Conference Center in Canmore. Each speaker will receive a complimentary conference registration package.

This year, the conference will focus on mathematical thinking and mathematical literacy. The Program for International Student Assessment's (PISA) definition for mathematical literacy (see [www.pisa.oecd.org/math/def.htm](http://www.pisa.oecd.org/math/def.htm)) suggests that students require more than skills, fluency and procedures to be mathematically literate. According to PISA, mathematical literacy is

an individual's capacity to identify and understand the role that mathematics plays in the world, to make well-founded mathematical judgments and to engage in mathematics in ways that meet the needs of that individual's current and future life as a constructive, concerned and reflective citizen.

The speaker proposal form is available at [www.mathteachers.ab.ca/sform02.htm](http://www.mathteachers.ab.ca/sform02.htm). On your form, please indicate the curriculum strand(s) that your session will address: patterns and relations, number, shape and space, or statistics and probability. Also, provide a short session description for the conference program booklet.

Limited access to off-site classrooms with computer labs is available. If you need such a classroom, please indicate your requirements so we can make the best use of the available space. Each room at the conference centre will contain an overhead projector and a screen. If you need another technology, we ask that you supply it yourself. The rooms will be set up in lecture or workshop style. Please indicate which setup you prefer, and we will do our best to accommodate you.

This year, we have decided to reimburse speakers for up to \$50 per session for handouts. Handout reimbursement will be given on site in Canmore upon presentation of a printing receipt. No reimbursement will be given before or after the conference.

It is against MCATA policy to sell items at conference sessions. If you have a product available for teachers to purchase, please secure a booth through our displays representative, Lorraine Taylor, at [lorraine.taylor@lethsd.ab.ca](mailto:lorraine.taylor@lethsd.ab.ca). She will gladly give you the necessary information. Booths are limited this year.

If you have any questions, please contact Janis Kristjansson at [jkristja@cadvision.com](mailto:jkristja@cadvision.com).

The success of the conference depends on the quality of the speakers. We look forward to considering your proposal for this conference in the mountains.

—Janis Kristjansson

## NCTM Canadian Regional Conference

**“The Joy of Learning Mathematics”  
Delta Montreal Hotel, Montreal  
August 15–17, 2002**

When planning your summer vacation, consider Montreal—the city of festivals, food and *joie de vivre*, where a good time is almost a civic duty. This summer, Montreal is also host to “The Joy of Learning Mathematics,” an NCTM regional conference featuring well-known keynote speakers and a first-class program of 150 sessions for teachers from Kindergarten to college. The conference is also an opportunity to share ideas and experiences with colleagues from across Canada and the United States.

Individual NCTM members will receive significant discounts on registration fees. An elementary or middle school with an institutional membership will receive reduced registration fees for any of its teachers. Student members will receive *free* registration! For details about membership or to join, visit [www.nctm.org](http://www.nctm.org).

More conference information will be arriving in schools this spring. Visit [www.nctm.org](http://www.nctm.org) for program and registration details and [www.stgeorges.qc.ca/~nevin/nctmmontreal](http://www.stgeorges.qc.ca/~nevin/nctmmontreal) for information about Montreal.