

Mathematics Council NEWSLETTER

The Alberta Teachers' Association

Volume 13

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June 1995

From the Editor



As another school year draws to a close, I wish each of you the best for a well-earned holiday. In many ways, it has been a trying year, especially with all the uncertainty brought about by budget

cuts and reorganization. However, we have all faced challenges before and, as always, have met them head on. We might have been scarred and bruised but never conquered.

As we look forward to the 1995-96 school year, MCATA faces some challenges. We would really like our membership to reach one thousand. If each current member would encourage just one fellow professional to join, we would reach our goal.

Publication format will change for 1995-96. Instead of publishing a newsletter

and a journal as we currently do, only one publication, *delta-K*, will be published as a combined journal/newsletter. Tentatively, it will be published four times a year—December, March, May and August. As mentioned in previous issues, I am always looking for interesting things to include, be they pictures, problems, jokes or major papers. Submissions by members would be much appreciated.

Plan early to attend our annual conference to be held in Lethbridge September 28-30. The program committee has worked hard to put together an excellent program. There will be something for everyone involved in teaching students mathematics.

The keynote speaker was to have been Bob Thirsk, the next Canadian to fly on a space shuttle mission. Unfortunately, due to changes in his commitment to that project, he will be unable to come to Lethbridge. At this time, the program committee is looking for another keynote speaker, and you can be sure that they will find someone who will present a significant and interesting message. A surprise is always in order.

Congratulations to Don Hillacre, who teaches mathematics at Spruce Grove Composite High School. Don received a provincial award under the Hilroy Fellowship Program for his project "String Invision Comics Teaching Model."

—Art Jorgensen

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LIBRARY SERVICES

From the President's Pen



This is the last time I shall pick up "the president's pen," as my term ends on June 30. The past two years have been challenging and rewarding, and I leave with mixed emotions. I have had

unique opportunities to meet math educators from across the continent, to share with them and learn from them. Because of my position on the Council, I have been appointed to several committees dealing with math curriculum and thus have participated in the Western Canada Protocol for a common math curriculum—pretty heady stuff for an "ordinary" classroom teacher! I won't, however, be sorry to give up the long hours of work being president entails, and my letter carrier will be delighted when the daily volume of mail decreases tenfold.

What a year this has been! The highlights include the NCTM Regional Conference in Edmonton, mini-conferences and resource fairs in Calgary and Edmonton, our "special project" collaboration on assessment materials with the Alberta Assessment Consortium and the parent-teacher conference in Edmonton. The list goes on and on. Our conference committee has done an outstanding job!

MCATA publications continue to be a source of pride. A special thanks must go to the publications committee, particularly Art Jorgensen, for the many hours devoted every month to the *Newsletter* and *delta-K*.

The membership and issues committees have had a busy year exploring ways to improve member services and deal with current issues affecting math education in Alberta. I recently attended a forum in Quebec City, sponsored by the Canadian Mathematical Society, where delegates from across Canada discussed curricula, technology, expectations and lifelong learning. We also

met in regional groups to share concerns and projects of common interest. The executive will actively cultivate links with math educators nationwide at all levels to keep you better informed.

I thank all executive members for their support, encouragement and dedication. Working with such a committed group of professionals has been a pleasure. I hope that your summer plans include rest, relaxation and fun. I look forward to seeing you at our annual conference in Lethbridge in September. Happy holidays! ▲

—Wendy Richards

Have You Thought About Forming a Regional?

Are you down in the mouth? Do you feel like you are operating in a vacuum? Are you looking for the road to recovery and finding other people to share questions, concerns and information about mathematics education? We have a solution for you!

You can initiate or become part of an exciting professional network in your area of the province. MCATA would support you and your colleagues in establishing such a network.

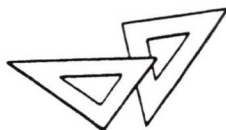
What are the benefits of establishing such a network? A network will meet the specific professional development needs of mathematics educators in your area through discussion groups, mini-conferences, drive-in workshops and displays for new resources. These professional development needs could focus on topics such as new curriculum, technology, assessment and communication.

How much does this cost? A little bit of your time and some money from MCATA.

Who should you contact? Phone MCATA's conference director, as identified on the back page of this newsletter. ▲

—Wendy Antoniuk

The Right Angle



News from Student Evaluation

1996 Mathematics 33 Diploma Examinations

Development

Mathematics 33 teachers provincewide have participated in developing curriculum standards and items for the Mathematics 33 diploma examinations. The development of the exam also includes representatives from postsecondary institutions and businesses, who validate the items and provide data that support the Mathematics 33 Course of Studies.

Students enrolled in Mathematics 33 are currently writing field tests and pilot diploma exams. As in all other diploma exams, teachers will mark the written-response section of the diploma exam.

Schedule

The exams will be written from 9:00 to 11:30 a.m. on January 29, June 26 and August 14. Students will be allowed an additional half hour to complete all other diploma exams.

Proposed Format

The exam will have multiple-choice, numerical-response and/or written-response questions. Exam questions will be organized into related sets. Sets are introduced by general scenarios that provide context for questions or connect large areas of understandings that students must have. Scenarios will be identified with labels such as "Consumerism." This is a label under which questions can be applied to the real world. "Connections" is another example of a label that links questions to general mathematical abilities and understandings. Information related to solving, connecting or

introducing a question will be contained in a screened or bordered area. A screened bar will indicate the end of a set of related questions. A separate data book will be provided for the exam. The booklet will contain a formula sheet; 90 percent Box Plots; loan, mortgage, annuity and present-value tables.

Proposed Design

The exam will reflect the core content as outlined in the Mathematics 33 Course of Studies. The exam will be limited to those expectations that can be measured by a paper-and-pencil test.

Core Content Emphasis

The core content of the course will be used to build the exam. Considering the current *Teacher Resource Manual*, the proposed emphasis below was determined from data obtained from teacher item-writing committees and responses to the information newsletter mailed provincewide in fall 1994:

<i>Core Content</i>	<i>Percent Emphasis</i>
Powers and Radicals	10
Annuities, Mortgages and Loans	10
Statistics	13
Trigonometry	18
Polynomial and Rational Expressions	13
Relations and Functions	18
Quadratic Functions and Equations	18

Question Format

Questions will require students to describe their method of problem solving and communicate their understandings of mathematical concepts and procedures. Students will also be challenged to make mathematical connections. "Connections" will be opportunities for students to show they can link mathematical learnings and abilities to topics in the real world, other disciplines or within mathematics itself. Proposed design of the question format follows:

<i>Question Format</i>	<i>No. of Questions</i>	<i>Marks</i>	<i>Percent Emphasis</i>
Written response	4	21	30
Numerical response	12	12	17
Multiple-choice	37	37	53

Mathematical Understandings

The three mathematical understandings of concepts, procedures and problem solving will be addressed throughout the examination. The proposed emphasis of these understandings is listed below.

<i>Written Response</i>	<i>Percent Emphasis</i>
Procedures, Concepts and Problem Solving	30
<i>Multiple-Choice and Numerical Response</i>	
Procedures	30
Concepts	25
Problem Solving	15

If you have questions, call Ron Flaig or Lowell Hackman at 427-0010. ▲

—*Florence Glanfield*
Alberta Education Representative

The free market is in accordance with the golden rule. We advance ourselves when we help others. The more we help others, the more we receive in return.

—Percy L. Greaves Jr.

Raising Young Voices: A Discussion Kit

A valuable new resource on gender socialization is being released across Canada. *Raising Young Voices: A Discussion Kit* promotes gender equity at home and at school to increase the self-esteem and social well-being of girls and women.

The kit is supported by the minister of education and the minister responsible for women's issues. It is available to parents, teachers and school administrators involved in the ECS to Grade 12 system and is an excellent resource for professional development, conference sessions, inservice sessions, staff meetings and parent advisory meetings.

Educators, school administrators and parents play critical roles in promoting gender equity. This resource provides a framework for informed discussions on gender socialization and its lifelong implications. It encourages us to explore what we can do to ensure that girls and boys, and young women and men, achieve their full potential.

Raising Young Voices: A Discussion Kit brings this issue to life by

- presenting real-life experiences of boys and girls at school and at home;
- stressing the importance of educators' and parents' support of our children;
- examining the effects that gender socialization has on career and life choices; and
- generating ideas for new ways to teach and parent, through discussions with follow.

Discussion guides support a 16-minute video by providing information and questions to focus a discussion group's attention on the effects of gender socialization.

Kits are available at public libraries, or contact The Alberta Teachers' Association Library at 453-2411 (Edmonton) or 1-800-232-7208 (elsewhere in Alberta). Kits may be purchased for \$17.50 from ACCESS; phone 440-7729 (Edmonton) or 1-800-352-8293 for ordering information. ▲

Upcoming Conferences

1995 MCATA Conference

El Rancho Travelodge and
Lethbridge Collegiate Institute (LCI)
September 28–30

Tentative Program

September 28

7:00–9:00 p.m.
“Log On” (registration), El Rancho

September 29

8:00–9:00 a.m.
“Log On” (registration), El Rancho

9:00–10:15 a.m.
“Blast Off” (one session in each of
Divisions I and II, III, IV), El Rancho

10:30–11:45 a.m.
(one session in each of Divisions I and II, III,
IV), El Rancho

11:45–1:30 p.m.
Lunch, El Rancho

1:30–2:30 p.m.
“Beam Down to Planet LCI” (regular
sessions), LCI

2:45–3:45 p.m.
Regular sessions, LCI

4:30 p.m.
MCATA General Meeting,
El Rancho (Western Room)

5:00–6:00 p.m.
“Captain’s Log,” hospitality room open,
El Rancho

7:30–8:30 p.m.
“Ready Room,” Keynote address and Math
Educator of the Year Award presentation,
El Rancho

8:30–9:00 p.m.
“Cosmic Comedy” (entertainment), El Rancho

9:00–11:00 p.m.
“Galaxy Gulp,” [wine and cheese (cash bar)],
El Rancho

September 30

8:00–9:00 a.m.
“Log On” (registration), LCI

9:00–10:00 a.m.
Regular sessions, LCI

10:15–11:15 a.m.
Regular sessions, LCI

11:15–1:00 p.m.
“Lunar Lunch,” LCI cafeteria

1:00–4:00 p.m.
“The Final Frontier,” sharing classroom-tested
ideas (six 25-minute sessions)

1996 MCATA Conference

Capri Convention Centre, Red Deer
November 1–3

Our first organizational meeting was held March 21, 1995, with the chairs of the different committees. Margaret Ann Stroh from the University of Calgary explained the role of the conference planning centre. Earlier in the day, she toured the Capri Convention Centre and was pleased with the facility.

Conference fees were set at \$110 for MCATA members and \$140 for nonmembers including GST so that participants could receive a tax deductible receipt from the University. Registrations received after October 5, 1996, will cost an additional \$20.

A File Maker Pro has been purchased to access the database from the 1994 NCTM Regional Conference in Edmonton to set up a calling card number.

At the second Program Committee meeting on April 25, 1995, committee members tried to identify a keynote speaker. The initial people contacted were outside budget range. With the NCTM documents and trends in education today, the theme will be “Math: Making Connections.” This reflects the need to make connections between math and industry, math and science, senior high and junior high, junior high and elementary, senior high and college/university and so on. ▲

Past Conferences

Parent-Teacher Conference

On March 18, 130 people attended a conference about mathematics education for parents and teachers at Holy Trinity High School in Edmonton. The conference was sponsored by MCATA and Alberta Education in collaboration with representatives from school districts in and around Edmonton. Letters and brochures were sent to school principals in the participating areas, inviting them to send at least one parent representative and one teacher from their schools. The conference was also publicized through newspapers, and television and radio stations.

About 55 sessions and workshops addressed a variety of mathematics topics including current curriculum changes, assessment techniques, connections with other subjects, use of technology, hands-on learning, enrichment activities and ideas for parents to support their children's learning. Student hosts from Holy Trinity High School guided conference participants and exhibitors around the school. A large display area in the gym featured publications and other learning materials by 14 leading educational companies. A delicious pasta lunch was catered by the Olive Garden Italian Restaurant.



Bryan Quinn at the conference.

Positive comments and suggestions offered through evaluation forms include "A great first effort! Keep up the good work and have other areas of education do the same," "Even the sharing between the participants was helpful" and "We should have had the program earlier." As a first-time conference, the

overall feeling was positive, and the organizing committee is already talking about next year!

How about organizing a parent-teacher math conference in your area? If help is required, call an MCATA executive member.

—*Marie Hawk*

NCTM Conference 1995



Bob Hart

NCTM's annual conference in Boston April 6–9 was super! The sessions were very well attended—delegates rushed from session to session to avoid standing or, worse, to avoid being asked to leave because of fire regulations.

There was a variety of sessions and workshops for all levels.

I concentrated my efforts on the graphing technology of Texas Instruments and Hewlett Packard as both companies have recently announced new products. I was also fortunate to hear NCTM president-elect Gail Burrill present on data-driven algebra and her thoughts on algebra for all.

Boston was an interesting location for the conference. The marathon on April 17 took much preparation. The architecture and history of Boston are fascinating.

Plan now to attend NCTM's next annual conference in San Diego, April 25–28, 1996.

—*Bob Hart*

Fourth Mathematics Leaders Symposium

Over 100 people attended this symposium in Calgary May 5, chaired by Barry Parsons and Barbara Morrison. SAIT president Dale Landry welcomed everyone and challenged all delegates to find "better ways to instill

mathematics.” Ron Blakely of Shell Canada, Shirley Valentine of Calgary RCSSD and Judith Watt of Calgary Home and School Council participated in a panel discussion “Communicating the Expectations of the Mathematics Program.” Roger Palmer of Alberta Education provided an update on recent curriculum activities, with a special emphasis on the Western Canadian Protocol project and on assessment. Nola Aitken of the University of Lethbridge presented a session for elementary teachers that focused on pedagogy, while Olive Chapman of the University of Calgary presented a session for secondary teachers that focused on problem solving. LMS Windows was demonstrated. The last session allowed participants to discuss in groups ideas, concerns and suggestions about technology, curriculum and teacher preparation.

—Donna Chanasyk

“Oh Six Five Four” (ode to the GST)

If GST is to be included
In the price of an item P,
What is the cost of the item
And what is the GST?

For GST at seven percent
The tax is sure to be
Point oh six five four,
And the cost is the rest of P!

Example

If the price is \$10, the GST “ode” is $10 \times .0654$ or 65¢, and the cost basis is \$9.35.

Quick check

7 percent of \$9.35 is 65¢, to the nearest cent, and cost plus GST equals price.

—Mike Stone

NCSM Conference 1995



Betty Morris

On April 4 and 5, 1995, I attended the National Council of Supervisors of Mathematics (NCSM) Conference in Boston. Focusing on “Reengineering for the 21st Century,” conference highlights included the following:

- ▲ Ideas and activities on how to promote math PD activities within the school and district
- ▲ Issues on facilitating teacher preparation
- ▲ Assessment, such as writing authentic problems, portfolios
- ▲ Caucus sessions to discuss regional issues and opportunities
- ▲ Job-like sessions to talk about specific issues with others who have similar responsibilities

The two days were busy and invigorating. Talking and listening to expert educators from Vancouver to New York was a valuable learning experience. It left me with a good feeling knowing that Alberta is making positive strides in mathematical learning. ▲

—Betty Morris

Moses Sama accidentally put his licence plate upside down on his car. When he compared the upside down number to the right side up number, he found the upside down number to be 25911 larger than the right side up number. What was the right side up number?

Summer Courses

University of Alberta

Teaching the New Math 31

Will you or do you hope to be teaching the new Math 31 curriculum? Teaching the New Math 31, to be held August 22–24, 1995, will focus on the mathematics of the new curriculum, emphasizing the transcendental functions—trigonometric, exponential and logarithmic.

The conference will open with the history of calculus to give insight into why calculus developed, how it developed and its relevance to our society. The three days will be divided to focus on precalculus, derivative calculus and integral calculus. Each day will be organized with a review of the topic and laboratory time to allow groups to solve interesting problems and to share approaches and solutions. Each day, an application area will be featured. Applications will be selected from various fields such as business, engineering, medicine or biological sciences, and statistics. Alberta Education will join the conference to facilitate discussion on curriculum issues.

The conference fee is \$250 and includes lunches, coffee and materials. On campus accommodation is available in Lister Hall. For more information, contact Leona Guthrie at 492-3385, fax 492-6826.

First-Term University Calculus for High School Students

Students who have completed Math 30 and 31 by June 30, 1995, are invited to complete the first-term calculus course during summer session (July 10–August 16). Students will receive credit for Math 100 or equivalency for Math 114. Students who do not have official

results from the diploma exams written in June may submit teacher marks to verify completion of Math 30 and 31.

To apply for admission or for more information, contact the Department of Mathematical Sciences, University of Alberta, Edmonton T6G 2G1; phone 492-3385, fax 492-6826.

Teaching Secondary School Mathematics

The Department of Secondary Education is offering Sec Ed 501 Teaching Secondary School Mathematics July 10–21, 1995. This two-week, three-credit, graduate level summer school course is open to all teachers of mathematics. The course will allow junior and senior high school teachers to become familiar with the current literature on mathematics classroom teaching and to rethink their teaching approaches. The emphasis is on developing lessons and units for teaching.

Call instructor Sol Sigurdson at 492-0753, fax 492-9402, or Special Sessions, University of Alberta, at 492-3752 for registration procedures.

University of Calgary

Adventures in Problem Solving

Adventures in Problem Solving (EDIS 549.02), a one-credit course to be held July 10–14, 1995, is an experiential approach to generating awareness of problem solving strategies. Topics include classical problem solving approaches, cognitive aspects of problem solving, social factors that interfere with problem solving, group projects that reinforce the use of certain problem solving strategies and the role of open-ended problem solving. For registration information, contact Special Sessions, University of Calgary, at 220-7208.

C²PC Institute

Bob Hart of Calgary's Crescent Heights High School will present this Graphing Calculators Summer Institute July 4–7, 1995, at the U of C's Olympic Volunteer Centre. Participants will learn how to make effective use of a TI-82 graphing calculator, improve the teaching and learning of algebraic techniques with the TI-82 graphing calculator, address and implement the new teaching methods that arise when graphing calculators are available to all students and implement appropriate change in their classrooms consistent with the NCTM Standards.

Contact Alice Tang, Olympic Volunteer Centre, 1833 Crowchild Trail NW, Calgary T2M 4S7; phone 220-7101, fax 284-4184.

Calculus Workshop

This Calculus Workshop will be held at the Kananaskis Field Station August 7–11, 1995. Presenters Mike Stone of the U of C and Bob Hart of Crescent Heights High School will help participants review calculus fundamentals, study selected topics in-depth, do explorations with the TI-82 calculator and do exploration activities with the Calculator Base Lab (CBL). Contact Alice Tang (see above).

CMASTE Workshops

Teaching Junior High School Mathematics,
August 21–24, 1995

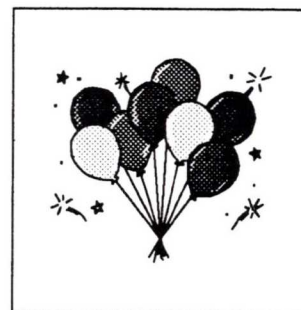
**Teaching Senior High School
Mathematics—Math 10, 13, 20 and 23,**
August 21–24, 1995

Teaching the New Math 31—Calculus,
August 23 and 24, 1995

Contact Continuing Professional Education,
U of A, 4-116 Education North, Edmonton
T6G 2G5; phone 492-0394, fax 492-0390.

100-Day Celebration

In early February 1995, schools across the province joined in celebrating "100 days," an annual event celebrated by most primary teachers and their students.



In September, students begin by recording the number of days they are in school by writing a number each day on paper strips tacked to the wall. Tally graphs also record the number of days. When 100 days of school has been recorded, students celebrate by doing several activities focusing on the number 100. Activities include counting 100 objects in different ways; holding a school-wide activity day incorporating the number 100; finding out how many different things can be done in 100 seconds, 100 minutes, 100 days and 100 years; anticipating and writing about life 100 years from now; celebrating with a cake that has 100 candles; and estimating and measuring 100 cm, 100 dm and 100 m. This is an excellent and fun way to incorporate the daily calendar into mathematical learning. Celebrate mathematics! Celebrate 100 days!

—Betty Morris

*When patterns are broken, new worlds
can emerge.*

—Tuli Kupferberg

Upcoming Events

- ▲ **Ontario Association for Mathematics Education joint conference with the Association of Mathematics of New York State**

July 28–August 1, 1995
Scarborough College

Contact John Kersley at (905) 389-1367 ext. 207, fax (905) 389-6366.

- ▲ **Second Annual Queen's/Gage National Mathematics Education Institute**

Mathematics, Education, and Technology: Making It Work

August 9–13, 1995
Queen's University, Kingston, Ontario

Contact Gage Educational Publishing Company, 164 Commander Boulevard, Scarborough M1S 3C7.

- ▲ **NCTM Canadian Regional Conference**

Partnerships in Mathematics—Making Connections

October 11–14, 1995
St. John's, Newfoundland

Contact R. Janes, conference chair, at (709) 753-8530, fax (709) 753-8407, or B. Wells, publicity chair, at (709) 754-0710, fax (709) 754-0122.

- ▲ **Alberta Assessment Consortium**

Assessing Student Performance: Connecting Teaching and Learning

November 16–18, 1995
Westin Hotel, Calgary

Contact D. Knight, 4th Floor, 10045 111 Street NW, Edmonton T5K 2M5; phone 427-0227 ext. 378, fax 422-4200.

- ▲ **Manitoba Association of Mathematics Teachers**

October 20, 1995

British Columbia Association of Mathematics Teachers Annual Conference

October 20, 1995

Sciematics '95, Saskatchewan Mathematics Teachers' Society

October 26–28

NCTM Canadian Leadership Conference

Regina

June 30–July 3, 1995

Contact Florence Glanfield at 489-0084, fax 483-7515.

Have a Great Summer!



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