

Mathematics Council NEWSLETTER

The Alberta Teachers' Association

Volume 9

Number 1

September 1990

From the Editor

As we begin another year, it might be the ideal time to evaluate our involvement with MCATA.

Yes, we are all members, but is that enough to keep the Council viable? Can most of us sit back while a few organize conferences, write journals, recruit members and, in general, try to improve the overall quality of mathematics education in the province?

To get the most out of membership in an organization such as MCATA, one must become truly involved. This means being prepared to volunteer at least in some small way to make the organization function better, and thereby better serve its members.

To quote a recent news release on volunteerism, "Volunteer action encourages people to develop and express a sense of responsibility for themselves, their community and their world, and to express this responsibility with concern and compassion." In short, volunteer action helps us to grow as citizens.

Psychologist Victor Frankl has written that the motive for existence and the guide for action for human beings lies not in obtaining money or prestigious jobs but rather in the search for meaning.

Many people find meaning in volunteer activity. Whether or not people engage in these experiences because they satisfy strong ego needs, provide political training, allow them to get out of the house or to escape the day-to-day routine of the job, the strength of volunteer activity is that it makes no judgments about such needs. It accepts them and offers opportunities for their fulfillment in a socially useful manner. Thus, the ultimate good of volunteering lies in its sheer human usefulness.

MCATA represents a major thread running through the lives of many excellent teachers. The reason that MCATA has been so successful to date, and is continuing to grow, is that its members are concerned about the kinds of changes that must take place in mathematics education for our students to meet the challenges of the twenty-first century. The MCATA executive is concerned that more of its council members are not actively involved. Possibly, as indicated by the Council on Social Development, the main reasons why people never give or become involved are a lack of awareness of opportunities and the kinds of work available for volunteers. The time has come to make aware those who are not, and to encourage the uninvolved to become involved.

Only if we take advantage of and develop the untapped human resources of our members can we hope that MCATA will continue to grow and maintain momentum.

Your executive would really like to see you get involved. We know that there is a great deal of talent among you, and there is much to be done. To start with, how about providing some news for the Newsletter, writing an article for delta-K, either giving or chairing a session at one of our conferences, organizing a mini-conference for your school or area, organizing a regional section of MCATA, nominating a fellow teacher for Mathematics Educator of the Year, seeking a position on next year's executive, or just writing us a letter suggesting ideas for improving our council? These are just a few ideas--I am sure there are many more.

Remember, we really need you and your ideas. Do have a good year!

(This editorial was adapted from a presentation given at a CESO (Canadian Executive Service Organization) conference in Edmonton on April 11, 1990 by Pearl Calahasen, a fellow professional and now MLA for Lesser Slave Lake.)

Art Jorgensen

Dick Kopan Appointed to Regional Services Committee

Congratulations to Dick Kopan on his appointment as Canadian representative on the Regional Services Committee of the NCTM (National Council of Teachers of Mathematics). Dick is a high school teacher in Calgary and treasurer of MCATA, a position he has held for many years.

If you have NCTM concerns, you can reach him at 23 Lake Crimson Close SE, Calgary, Alberta T2J 3K8, (403) 271-5240.

A special thanks to Michael Cassidy from Pointe Claire, Quebec, for the excellent job that he has done as Canadian representative for the past three years.

1990 MCATA Conference

This year the annual conference will take the form of an NCTM regional. Thanks to the efforts of George Ditto, Lois Marchand and their committees, it is shaping up to be a super conference. A tentative program is included in this newsletter.

We would like to see you and your fellow professionals there. There will be some excellent sessions, and you can enjoy some great western hospitality.

1991 MCATA Conference

Plans are already well under way for this conference which will take place October 31 - November 2, 1991. If you have any ideas for speakers or sessions, please let the conference director or any other member of the executive know.

1991 NCTM Conference

This conference will be held in New Orleans, April 17 - 20, 1991. What a place for a conference! It is not too early to arrange to attend the most prestigious mathematics conference of the year.

The International Congress on Mathematical Education

Please see the page attached to this newsletter for information on this world-class conference to take place in Quebec, August 16 - 23, 1992. It is certainly an honor for Canada to be awarded a conference of this magnitude.

MCATA Membership

A MCATA membership application form is attached to the Newsletter for your convenience. It is of advantage to you to renew your membership or to join the Mathematics Council before the annual conference because a fee increase is being considered at the annual general meeting.

1989 Yearbook

New Directions for Elementary School Mathematics, 1989 Yearbook,

Paul R. Trafton and Albert P. Shulte, eds. 1989, viii + 245 pp., \$18 cloth. ISBN 087353-272-4. National Council of Teachers of Mathematics, 1906 Association Drive, Reston, Virginia 22091.

The 1989 yearbook is a valuable resource for elementary school teachers and mathematics educators, focusing on the importance of developing a solid foundation in mathematical understanding and appreciation during the elementary school experience. The discussions on theory and activities share the vision shown in the Standards. The balance between theoretical considerations and classroom application makes the book useful.

It is organized into five parts. The opening chapter discusses five areas in which change is needed in the elementary school curriculum: the view of mathematics and mathematics learning, curriculum, instruction, evaluation and support. Other chapters in this part examine the roles of computation, reasoning and problem solving. Of particular importance is the chapter on the role of computation.

The two articles in the second part examine the implications for instruction of recent research on children's thinking and learning. Teacher-pupil conversations illustrate strategies that guide meaningful instruction.

Part 3 is concerned with developing the content of the changed curriculum. The connections between language experience and mathematics are interesting, and there are some very practical suggestions for activities providing instruction on data analysis, measurement, fractions and calculator use. This theme continues in Part 4 in the three chapters on mathematical exploration and the active involvement of students.

The concluding section is about factors that influence the way mathematics is taught and learned. Of particular interest are the chapters on cooperative learning and staff development.

Samples of students' work appear between sections. These are refreshing examples of what mathematics papers can look like.

This yearbook does indeed provide new directions. Teachers could lend a copy to their superintendent, principal and curriculum director as one way to answer their questions, "What are the Standards about?" and "What can our schools do?" Chapters 1 and 20 (staff development) are good places to start.

Art Jorgensen

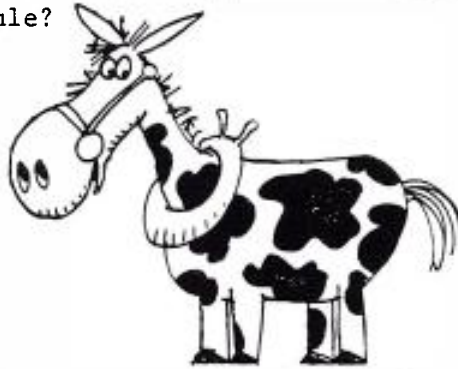
Thinkers' Challenge

1. There were some candies in a dish. Marie ate $\frac{1}{2}$ of them. Tom ate $\frac{1}{2}$ of the remaining candies. The dog ate the last 2 candies. How many candies were there originally?

Answer: 8.

2. The length of a mule's body is $2\frac{1}{4}$ times the length of its head, and its head is $\frac{4}{5}$ the length of its tail. If its head is 0.5 metres long, how long is the entire mule?

Answer: 3.03 metres



Number Detective

Use 'sticky note' paper, and make a collection of numbers, for example, 85, 76, 123 (the number of digits depending on the students' level of development). When students are seated, attach a number to each student's back. They are going to be detectives and try to discover what numbers are on their backs. Here are the rules:

- a. You can only ask questions that require a yes/no answer.
- b. You must find a different person to answer each question.
- c. You must record the number of questions it takes to reach your answer.

Example: Is my number greater than 50? Is my number less than 125? Does my number have 2 digits? Is the number in the tens place a 3?

—Submitted by Bob Watson, Elementary Mathematics/Science & GATE Coordinator, St. James-Assiniboia School Division No. 2.

What is the most important thing a teacher can wear to the classroom?

How about a smile?





SEVENTH INTERNATIONAL CONGRESS ON MATHEMATICAL EDUCATION

The 7th International Congress on Mathematical Education (ICME-7) will be held in the city of Québec (Canada) from August 16 to 23, 1992. It will be the seventh in a series of congresses of the International Commission on Mathematical Instruction (ICMI), following those of Lyons (1969), Exeter (1972), Karlsruhe (1976), Berkeley (1980), Adelaide (1984) and Budapest (1988).

In an effort to meet the diverse needs and interests of the 3000-3500 expected participants, the program will cover all of the major areas of mathematics education at the elementary, secondary and post-secondary levels. Activities will include lectures, working groups, topic groups, workshops, short communications, posters, project presentations, and films, as well as exhibitions of textbooks, software, and other types of materials. Here are a few examples of themes that will be discussed during the congress:

- Improving students' attitudes and motivation
- Mathematics for early school leavers
- Innovative assessment of students in mathematics
- Students' misconceptions and inconsistencies of thought
- The impact of calculators on the elementary school curriculum
- The role of geometry in general education
- Probability and statistics for the future citizen
- Modeling activities in the classroom
- Students' difficulties in calculus
- Undergraduate mathematics for different groups of students
- Pre-service and in-service teacher education
- Methodologies for research in mathematics education

Founded in 1608 by Samuel de Champlain, the city of Québec, capital of the Canadian province of the same name, is the cradle of French civilization in North America. Because of its unique charm, its historical past and its exceptional location dominating the majestic Saint-Laurent river, Québec is a privileged place which attracts tourists from all over the world. The ICME-7 congress will take place on the campus of Université Laval, which offers facilities and services making it a most convenient place to hold such an international event.

The Second Announcement of the congress will be published in 1991 and will contain detailed information about the program, as well as forms for registration, accommodation, and submission of short communications or posters. In order to receive it, please write to: **Congrès ICME-7 Congress, Université Laval, Québec, QC Canada G1K 7P4**, or communicate with the secretariat of the congress by phone: (418) 656-7592, or by fax: (418) 656-2000, or by electronic mail: ICME-7@LAVALVM1.BITNET

MCATA Executive 1990/91

President and 1991 Conference Director

Marie Hauk Res. 487-8841
315 Dechene Road Bus. 492-4273
Edmonton T6M 1W3

Past President

Louise Frame Res. 239-6385
32, 1012 Ranchlands Blvd. NW Bus. 282-3822
Calgary T3G 1Y1

Vice-President

Bob Hart Res. 284-3729
16 Rosetree Crescent NW Bus. 276-5521
Calgary T2K 1M9

Secretary

Dennis Burton Res. 327-2222
3406 Sylvan Road Bus. 328-9606
Lethbridge T1K 3J7 Fax 327-2260

Treasurer

Dick Kopan Res. 271-5240
23 Lake Crimson Close SE Bus. 271-8882
Calgary T2J 3K8

delta-K Editor and Publications Director

Linda Brandau Res. 265-5395
2109, 1200 Sixth Street SW Bus. 220-6288
Calgary T2R 1H3 or 220-5635

Newsletter Editor

Art Jorgensen Res. 723-5370
4411 Fifth Avenue
Edson T7E 1B7

Monograph Editors

Bob Midyette Res. 282-8916
3343 Boulton Road NW Bus. 249-3131
Calgary T2L 1M2

Keith Molyneux Res. 289-8601
2707 48 Avenue NW Bus. 249-3131
Calgary T2L 1C4

1990 Conference Director

George Ditto Res. 282-6682
2713 17A Street NW
Calgary T2M 3S9

Faculty of Education Representative

Daiyo Sawada Res. 436-4797
11211 23A Avenue Bus. 492-0562
Edmonton T6J 5C5

Department of Education Representative

Dick Mitton Bus. 381-5243
220 Fifth Avenue S
Bag Service 3014
Lethbridge T1J 4C7

Mathematics Representative

Alvin Baragar Res. 469-5626
Department of Mathematics Bus. 492-3398
University of Alberta
Edmonton T6G 2G1

PEC Liaison

Norm Inglis Res. 239-6350
56 Scenic Road NW Bus. 285-6969
Calgary T3L 1B9

ATA Staff Adviser

Bill M. Brooks Bus. 265-2672
200, 540 12 Avenue SW or 1-800-332-1280
Calgary T2R 0H4

Membership Director

Diane Congdon Res. 526-7563
146 Fourth Street SW Bus. 548-7516
Medicine Hat T1A 4E3

Publicity Director

Bill Davidoff Res. 627-4283
P.O. Box 574 Bus. 627-4414
Pincher Creek T0K 1W0

**Professional Development Director
and NCTM Representative**

Wendy Lukawesky Res. 420-1466
1701, 9808 103 Street
Edmonton T5K 2G4

**Director-at-Large and 1991 Conference
Director**

Bryan Quinn Res. 460-7733
6 Greenhill Street Bus. 475-1737
St. Albert T8N 2B4