Mathematics Council
NEWSLETTER
The Alberta Teachers' Association

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From the Editor

Happy New Year! As we move into 1988, it is time for all of us to reflect on what our roles will be, not only as teachers, but also as members of the Mathematics Council of the Alberta Teachers' Association (MCATA).

I am sure that you are all good teachers and that the education and welfare of your students is uppermost in your minds. But what about your role as members of MCATA? Are you prepared to take an active part, or are you content to pay your annual fee, read some of the literature that is provided and, possibly, attend the annual conference?

If you have not really been an active member, how about making a resolution to become more involved? MCATA needs you as an active participating member. There is much to be done, and the executive can't do it all.

You might ask, "What can I do?" For starters, why not write to the president, or one of the editors, letting him or her know what you appreciate about the benefits of being a member of MCATA, or what you don't like and make recommendations for change? Your suggestions will be appreciated. How about making the MCATA publications available to other teachers who may not be members?

Why not encourage other teachers to become members of MCATA? How about running for a position on the executive, or nominating a fellow teacher who is doing an excellent job? There are many of you out there, and new faces are always welcome.

I know that many of you (and your colleagues) have exciting mathematics activities in your schools. An article, long or short, describing an activity would be a welcome addition to the newsletter or journal. Other teachers would enjoy reading about these activities, and the editors are always wracking their brains for articles.

And, a reminder of the **Mathematics Educator of the Year Award**, which is presented by MCATA. If you know of someone who is doing a superb job teaching children mathematics, nominate him or her for this prestigious award. Nominations can be sent to the president, Louise Frame, at #36, 2323 Oakmoor Drive SW, Calgary, Alberta T2V 4T2.

If you and a group of fellow teachers would like an inservice on a particular area of mathematics education, the executive will do everything possible to provide resource personnel. All you have to do is let your president know and get the group together.

These are just a few of the activities that you can pursue as active members. You can likely think of many more. With your help, we can make MCATA the envy of all the councils.

Sure hope to hear from you.

--Art Jorgensen

What's New at Alberta Education?

Alberta Education is in the process of setting up an "Elementary Diagnostic Methods Committee" under the directorship of May Ann Nissan.

Interested teachers are being sought for this committee. If you are interested, please contact MCATA President Louise Frame at #36, 2323 Oakmoor Drive SW, Calgary, Alberta T2V 4T2.

See You There

* The National Council of Teachers of Mathematics' (NCTM) 66th annual meeting will be held April 6 to 9, 1988, in Chicago. The theme of the meeting is "Mathematics Learning: Linking Today with Tomorrow."

* The 1988 Conference of the Mathematics Council of The Alberta Teachers' Association will be held November 3 to 5, 1988, at the Edmonton Inn in Edmonton. The theme of the conference is "Join the Math Revolution: Make Math Great in '88! A Focus on Understanding."

* While we are on the topic of professionalism, why not give some serious thought to joining NCTM? The benefits are many. The NCTM has an active, growing membership dedicated to improving mathematics instruction and continuing to development professionalism in mathematics education. You will receive either the Arithmetic Teacher or the Mathematics Teacher with your membership. Both are excellent publications that contain many worthwhile articles and ideas. An application to join NCTM appears on page 8.

Breaking New Ground: Education for the Gifted and Talented

by Garnet Millar, D. Scott Macdonald and Alok Singh

Editor's Note: For many years, while the needs of students with learning disabilities were being given special attention, the special needs of our brightest students were being overlooked. The philosophy seemed to be that these students could look after themselves. Unfortunately, this was often not the case. These students not only failed to reach their potential but, in some cases, because of boredom, became discipline problems and dropped out of school. What a waste of talent.

The following article, reprinted from the newsletter of the Gifted and Talented Education Council, does an excellent job of outlining how the problems of these students are now being addressed in Alberta. It should prove to be of particular interest to mathematics educators.

Education for gifted and talented students in Alberta is a new and rapidly developing area, the importance of which is coming increasingly to the fore. Educators recognize that this minority group in the school population has special needs, and, even as the demand for programs gathers momentum, efforts are being made to meet those needs. All six Alberta school zones and more than 150 school jurisdictions now offer various programs and services for gifted and talented students.

To heighten public awareness of the programs and services for gifted and talented students in Alberta, the Education Response Centre (ERC) of Alberta Education has compiled A Directory of Programs and Services for the Gifted and Talented: A Reference Guide. This directory, the first of its kind, was developed with the cooperation of many dedicated individuals throughout the province. It was conceived in the hope that the knowledge and experience of those who have long been involved in educating our youth might be of value to others engaged in breaking new ground--that of educating the gifted and talented students of Alberta.

Data for the directory were compiled from May to August 1987 and reflect the programs and services offered to gifted and talented students in the 1987-88 school year. Initially, a checklist-questionnaire was mailed to each school jurisdiction. Then, in a follow-up telephone interview, more specific questions were asked. Each postsecondary institution in Alberta was contacted to determine its provisions for gifted and talented students, particularly scholarships and challenge examination procedures. The Alberta Association for Bright Children was consulted at the beginning of the project. School jurisdiction personnel and others recommended speakers who would be willing to share their expertise about educating gifted and talented children.

The directory is divided into three major parts, the first of which describes the nature of the programs already in place in school jurisdictions. It identi-

fies the grades served and how long the programs have been in operation. Also, a section entitled "Changes Planned for September 1987" summarizes program activities and possible changes. The final section, "Unique Features," covers other important aspects of the program and expands on some of the general points made in previous sections. Features considered unique are the identification procedures (particularly the cutoff scores that vary from the standard IQ score of 130), special extracurricular activities planned for the gifted and talented, resource materials created to help the teachers of gifted and talented pupils, inservices and public awareness techniques.

The second part of the directory lists more than 100 speakers who are knowledgeable about the characteristics, special needs and interests of gifted and talented children; the third section--the appendices--lists the broad spectrum of services available.

With the information contained in the directory, educators can choose, from an array of Alberta programs and approaches, those that match their philosophies, needs and resources.

Gifted and talented students differ individually and collectively from their peers. The diversity of their needs adds to the complexities of identifying them. The directory devotes a section to explaining the identification process and several of the measures used: group intellectual and achievement tests, individual tests (intellectual, achievement and creative), rating scales, nominations, achievement scores and teacher-assigned grades.

The talent areas served in the individual programs fall into six categories: general intellectual ability, specific academic aptitude, creative or productive thinking, visual and performing arts, leadership ability and psychomotor ability.

Alberta Education has identified eight different methods of program delivery used to serve gifted and talented students. These are: enrichment in the regular classroom, grade acceleration, advanced placement in university, mentorship opportunities, special schools, summer programs, special talent opportunities, and honors and International Baccalaureate programs. Often, a combination of these delivery methods is used within a school jurisdiction.

The Alberta Education resource manual Educating Our Gifted and Talented Students in Alberta served as the reference document for defining the terms used in the directory.

The Education Response Centre, which is responsible for creating and disseminating the directory, can provide copies on request. Direct enquiries to Dr. Garnet Millar, Assistant Director, Education Response Centre, 6240 - 113 Street, Edmonton, Alberta T6H 3L2 (telephone 434-1481).

Garnet Millar is the assistant director and D. Scott MacDonald and Alok Singh are research assistants at the Education Response Centre.

Using a Hundreds Chart to Count Money

by Gloria Hooper

This article is reprinted from The Illinois Mathematics Teacher, *Vol. 36, No. 4, November 1985.* *Gloria Hooper is a teacher at Brentwood School in Arlington Heights, Illinois.*

First graders can benefit from attaching paper coins to a hundreds chart when learning to count.

Over the past few years, I have tried many methods of teaching first graders the value of coins and how to count money. I found the most success with a simple method: attaching paper coins, found in the back of most primary math texts, to a large hundreds chart to demonstrate coin values and give practice in counting money.

A demonstration chart, as shown below, can be made of dense styrofoam or heavy cardboard or a bulletin board. The coins are attached with push pins.

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

Teachers introduce coins, one at a time, and ask students to describe and identify each one. The value of the coin is demonstrated on the hundreds chart: e.g., the penny has a value of one square, the nickel has a value of five squares, etc. The students are given time to practise placing the coins on the chart and to count the amount of money shown, by saying the numbers under the coins.

The real value of the hundreds chart as a teaching tool becomes apparent when students can count coins of various values. The teacher asks appropriate questions: "Which coin has the greatest value? We start with that coin first." The teacher demonstrates on the large chart, stressing the importance of counting the value of the next coin beginning with the square that comes just after the one already placed on the chart. (Some children want to go back to five when adding a nickel.) When all coins being counted are on the chart, the amount of money is shown by the number under the last coin. The children then say the numbers under the coins to practise and get the pattern of counting money: "Ten, fifteen, sixteen, seventeen. Seventeen cents."

After sufficient practice with the large hundreds chart, students make their own charts from graph paper. They keep these charts to use whenever they have to count money. Each student also has an envelope of paper coins.

I found that some students needed this manipulative for a very short time, while a few were still unable to count money without it at the end of the year. All students could count money with the aid of the hundreds chart. Some students discovered how many quarters, dimes, nickels and pennies are in a dollar with the use of the hundreds chart.

What's New?

Intervention Programs in Math, Science and Computer Science for Minority and Female Students in Grades 4 to 8 is a directory that may be useful to teachers who work with students who are poor in math. It was prepared by the Educational Testing Service with support from the Ford Foundation. It describes intervention programs in middle schools. Such programs have been proven necessary because students' achievement in middle school influences their perceptions of their abilities and dictates their high school academic paths.

To obtain a copy, send $6 to Educational Testing Service, Publication Order Service, CN 6736, Princeton, New Jersey 08541-6736. Be sure to specify no. P/J798-99.

Who's Who?

I would like to introduce you to Michael Cassidy, who is the Canadian representative on the Regional Services Committee of the NCTM. He is a great guy to know.

His responsibilities are (1) to ensure that the complete services and support of the NCTM reach Canadian members, (2) to help the affiliated groups grow as professional organizations and (3) to serve as a channel to NCTM through which you can transmit your concerns, questions or recommendations and be assured that they will receive prompt attention.

By the way, Michael's address is 104 Stillview Avenue, Pointe Claire, Quebec H9R 2X8.

Problem Corner

A chicken farmer with a basket of eggs finds that if he removes the eggs 2, 3, 4, 5 or 6 at a time, one egg is always left. However, if he removes the eggs 7 at a time, no eggs are left. What is the fewest number of eggs that can be in the basket?

The solution will be in the next newsletter. Hope you have the answer by then!

Mathematics is undoubtedly one of the greatest achievements of man's mind. In addition to the knowledge that the subject possesses, its language gives science its organization and power. Mathematical calculations dictate engineering design. The methods of mathematics have inspired social and economic thought. Mathematical thinking has fashioned styles in painting, architecture and music. Even national survival depends today upon progress in mathematics. Finally, mathematics has been a major force in molding our views of the universe and of man's place and purpose in it.

Something for Parents

In a recent letter to NCTM members, Joseph Caravella, director of Membership Services, made the statement, "It's never too late to stress the importance of mathematics." To emphasize and promote this idea, the NCTM has designed some very attractive "Count on Math" bookplates. The NCTM is distributing these bookplates, free to all parents who request them with the "Parent Gift Certificate" below.

Math teachers are encouraged to cut out the certificate, photocopy it and send one copy home with each of their students. The certificate entitles parents to one free set of bookplates and tells them how they can obtain it. It also tells them of three brochures that they can get for $2.00 Canadian.

This certificate entitles you to one free set of

"NCTM Book Cover Name Plates"

compliments of your child's math teacher and the NCTM.

To receive your **free** set of seven red, white and blue book cover name plates to help indentify all your child's textbooks at home and in school, just return this certificate in a stamped, self-addressed envelope - - the same size as this certificate - - to the Council. (Offer valid through 2-29-88)

Help Your Child Learn Math
Family Math Awareness Activities
Using Calculators to Improve Your Child's Math Skills

Three NCTM parent brochures still available in the United States for only $1.00.
Canadians, please forward CAN$2.00 and a self-addressed envelope to receive a set of name plates and the brochures.

Nationai Council of Teachers of Mathematics • 1906 Association Drive • Reston, VA 22091

Membership Form

I'd like to join the National Council of Teachers of Mathematics. I understand that the annual dues are $35.00 (U.S.) for all membership services, including the publication(s) I have checked:

☐ ARITHMETIC TEACHER (AT) ☐ MATHEMATICS TEACHER (MT) ☐ Both AT and MT (for $13.00 more)

I would also like the following special publications:

☐ 1988 YEARBOOK: ALGEBRAIC CONCEPTS IN THE CURRICULUM, K-12 (Spring '88 delivery)
[ ] Individual Members $12.80 [ ] Others $16.00

☐ JOURNAL FOR RESEARCH IN MATHEMATICS EDUCATION (JRME)
[ ] Individual Members $12.00 [ ] Others $17.00

NOTE: Full-time student dues are one-half of regular membership dues. For mailing outside the U.S., add $5.00 for the first AT or MT per membership and $2.50 for each additional AT or MT; add $1.50 for JRME.

Name _____

Address _____

City _____ Province _____

Postal Code _____ Phone No. (___) _____

Payments to NCTM in U.S. funds enclosed $ _____

☐ Mastercard ☐ Visa

Expires _____

Card No. _____

Signature _____

Send this form to:

National Council of Teachers of Mathematics
1906 Association Drive
Reston, Virginia 22091

Memorandum

The Alberta Teachers' Association

Date 1988 01 11

To Members of the Early Childhood Education Council and the Mathematics Council

From Marion Pawlivsky, ECEC President
Robert Michie, MC President

Re Joint publication

The Early Childhood Education Council and the Mathematics Council share an interest in teaching mathematics in the early childhood classroom. For this reason, the Councils decided to collaborate on the production of a publication devoted to this topic. Enclosed is the product of that collaboration.

We hope that practising teachers in the field of early childhood education will benefit from the ideas and activities described in this publication.

Please note that this publication replaces the following regular issues, neither of which will be published:

Early Childhood Education, Volume 20, Number 2, Summer 1987
delta-K, Volume 26, Number 3, August 1987

11010 142 Street, Edmonton, Alberta T5N 2R1
453-2411 in Edmonton, 263-4774 from Calgary, 1-800-232-7208 from elsewhere in Alberta