Mathematics Council NEWSLETTER
The Alberta Teachers' Association

Volume 3   Number 5   March 1985

From the Editor's Chair —

In 1984 MCATA recognized for the first time a person making an outstanding contribution to mathematics education in the province of Alberta. The recipient of this award, as indicated in the last issue of the Newsletter, was Marshall Bye. This type of recognition is long overdue.

Each of you is likely aware of more than one educator, whether at the school, administrative or university level, who has made a significant contribution to mathematics education.

The MCATA executive is currently seeking names of people for this prestigious award for the current and future years. If you know someone who you think deserves this recognition, please submit his or her name with related pertinent information to Ron Cammaert, the president of MCATA.

In a similar vein, I wonder how long it is going to be before outstanding mathematics educators are going to be recognized for their contributions at senior government levels. A review of NCTM materials reveals that annually outstanding mathematics educators are recognized formally by the President of the United States.

We are also looking for the names of people who are willing to serve on the executive of MCATA for the up-coming year. If you know of capable and interested people please make vice-president Bob Michie aware of them. For those who are prepared to serve as a director, please let Bob know as well. The Board of Directors is appointed by the executive. We are always looking for people who are interested in serving as directors. These positions provide an excellent opportunity to serve and to become familiar with the operations of MCATA.

Questions?

Marilyn N. Suydam
Ohio State University, Columbus, Ohio 43212

You'd be an unusual teacher if you didn't ask questions. But what kind of questions do you ask?

When large numbers of teachers were observed as they taught mathematics, it was found that they spent up to one-third of the time asking questions. Thus, they seemed to be involving their pupils in an interactive learning process and forcing their pupils to think.

However, 80 percent of the questions asked were at the knowledge and comprehension levels, the lowest cognitive levels, which primarily demand recall of information in a recitation format. Such questions as "What is the formula for finding the area of a rectangle?" and "How do you multiply 62 x 37?" fit into these categories.

Almost no questions at higher cognitive levels--application, analysis, synthesis and evaluation-- were asked in many classrooms. Yet these questions do demand thinking, rather than just recall. These are questions that are involved in real problem solving.   Thus, a question such as "How do you know that the sum of 65 and 48 is less than the sum of 50 and 70 without actually adding?" demands the use of place-value knowledge and estimation skills as the child analyzes the problem.

Effective questioning skills have been linked with pupils' achievement in mathematics. How can you use the following findings from research?

Effective teachers of mathematics ask more questions than do ineffective teachers. They ask more recall questions, and they also ask many more higher-level, process-type questions, calling for explanations rather than only recall.

Moreover, effective teachers ask more follow-up questions after a correct answer is given, to probe pupils understanding and help them build concepts.

Finally, effective teachers encourage pupils to ask questions. This practice leads children to evaluate their own understanding continually.

How to develop effective questioning strategies is one topic considered in Didactics and Mathematics. You might want to check this publication to find out more about using questions to motivate and challenge students; provoke interaction; get students to evaluate and focus on process; guide, diagnose and review; encourage exploration; and enhance transfer.
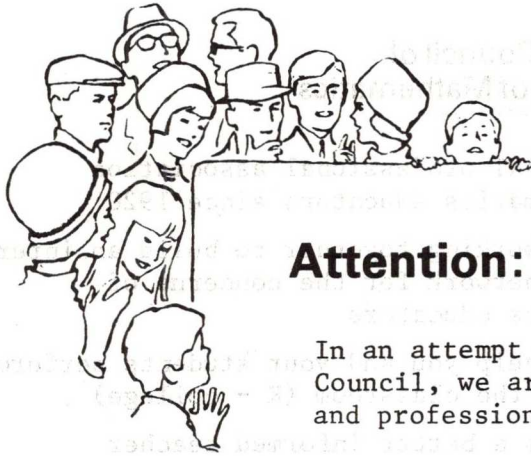
Attention: Math Teachers!

In an attempt to promote the activities of the Mathematics Council, we are willing to provide speakers for conventions and professional development activities.

Speakers are available for all divisions of the following topics:

Problem Solving   Microcomputers in Math
Gifted   Enrichment
Manipulatives   Games
Calculators   Logo
Remedial   All Strands of the Curriculum

For additional information contact:

Dick Kopan   Phone:
23 Lake Crimson Close S.E.   (home)   271-5240
Calgary, Ab.   T2J 3K8   (work)   271-8882

Problems in Verse

The Cow is Out to Pasture

In the center of a field, not touched by a plow,
Was an acre needed to tether a cow;
How long was a rope that reached all around,
To limit the cow's grazing to an acre of ground?

A Count Out

Jim in five minutes a sum can count,
Which Jack can count in seven;
How much more then is the amount,
That they both can count in eleven?

National Council of
Teachers of Mathematics

... professional association
... since 1920

... teachers ... together to build an inter-
... network ... the concerns of ...

... to help ... your students perform
(... in the classroom ... college)

... a better informed teacher

... to NCATA $5.00 for every new
membership processed. Any individual who
... not been a NCTM member for at least
12 months will be considered a new member.
This rebate program will end May 31, 1985.
Annual membership dues: $35.00.

NCTM ORDER FORM

INSTRUCTIONAL MATERIALS	Stock #	Quantity	Unit Price	Total Price
_____	_____		$ _____	$_____
_____	_____		$ _____	$_____
_____	_____		$ _____	$_____
			SUBTOTAL	$_____
			Less 20%	$_____

...dividual members, bookstore ... orders for 10 or more
...gle title shipped to one address ...bject to change without
...a residents add 4% sales tax. Bill- ...s will include shipping
...g charges

MEMBERSHIP — Benefits for one year include five issues of the *NCTM News Bulletin* plus *Arithmetic Teacher & Mathematics Teacher* options—choose one.

Arithmetic Teacher (AT) • 9 issues, September-May, for elementary school teachers, parents, and teacher educators. Individuals $35, Institutions $40.*
* Additional *AT* copies for institutions mailed to the same address $13/ORDER/YEAR. $_____

Mathematics Teacher (MT) • 9 issues, September-May, for secondary school and two-year college mathematics teachers, and teacher educators.
Individuals $35, Institutions $40. $_____

Both *AT* & *MT* for individuals only $48. $_____

Full-time student dues are ½ regular membership dues. For mailing outside the U.S. add $5 for the first *AT* or *MT* per membership and $2.50 for each additional *AT* or *MT*.

TOTAL $_____

Member # _____   ☐ Payment to NCTM in U.S. funds enclosed

Name _____   ☐ MasterCard   ☐ VISA   Expires _____

Address _____   Credit Card # _____

City _____ State or _____ ZIP or _____   Signature _____
Province   Postal Code

684A1

1906 Association Drive • Reston, VA 22091 • (703) 620-9840

4

Problem Parade

(Dale Seymour. 1984. Set of 16 posters and problem book, $23.95; posters, $16.95; problem book, $8.95. Dale Seymour Publications, P.O. Box 10888, Palo Alto, CA 94303.)

This set of colorful posters provides problems suitable for students in grade 4 - 6. They furnish practice in solving problems involving place value, choice of operation, logic, number thoery, geometry, number patterns and fractions. However, these are not the typical textbook word problems that many children find boring and unrealistic. These problems stir one's imagination and require more than typical algorithmic methods to solve them. The book, which may be purchased with the posters or separately, gives introductory and preliminary problems that can be used to help teach children strategies for solving the more difficult problems on the posters.

The forty-eight problems appear on separate reproducible worksheets that allow the necessary space for the students to work their solutions. The author provides solutions, as well as teaching strategies, for each problem. Although these problems are suggested for students in grades 4 - 6, many students in grades 7 - 8 would find them challenging as well.

Recommended Reading

How to Choose and Create Good Problems for Primary Children by Doyal Nelson and Joan Worth. With problem solving the focus of school mathematics in the 1980s, this is a booklet for the decade. It helps the teacher to make very young children think about problem solving. 40 pages. $3.00. See the NCTM Materials Order form on page 4 of this issue.

SOLUTIONS TO PROBLEMS IN VERSE   (from page 3)

The Cow is Out to Pasture   117.7 feet (1 acre = 43,560 sq. ft.; use pi = 3.1416.)

A Count Out   About 3.8 the amount that Jim can count in 5 minutes or Jack can count in 7 minutes; or 2.2 the amount that both can count in 5 minutes.

Mathematics Educator of the Year Award: Guidelines and Criteria

A. Award

   (1) This award may be given annually and is to be presented at the annual conference of the Mathematics Council.

   (2) The award shall be a plaque, inscribed with the title, year and name of recipient.

   (3) The recipient shall also receive an honary life membership in MCATA and a lapel pin.

B. Qualifications for Candidates

   (1) The candidate shall have contributed distinguished, meritorious service in the field of mathematics education. The criteria may include curriculum development, in-service, outstanding classroom teaching and exemplary leadership.

   (2) Executive officers of the Mathematics Council may not be eligible during their term of office.

C. Nominations

   (1) The Award Selection Committee shall secure nominations by advertising in the Newsletter and Delta-k.

   (2) Nominations to be received by the committee six weeks before the Conference.

   (3) Nominations received after the advertised deadline shall not be considered for that year.

D. Award Selection Committee

   (1) The past president shall act as chairman of the Award Selection Committee.

   (2) The Award Selection Committee shall be the Table Officers of the Mathematics Council.

   (3) After nomination forms are received, additional information may be requested from nominators.

   (4) Members of the committee shall receive copies of all nomination forms and supporting information.

E. Additional Considerations

   (1) The Mathematics Council shall assume all expenses for recipients, and banquet expenses for spouses of recipients.

   (2) Extensive coverage of the award should be given through the press.

   (3) An article describing the recipient's contribution should appear in Delta-k.

Mathematics Educator of the Year Nomination Form

Nominee's Name: _____ Phone: _____

Home Address: _____

School Address: _____

Present Position: _____

Professional Involvements and Significant Contributions (attach resume)

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

Nominated by: _____ Phone: _____

Address: _____

Date: _____

Award to be presented at the Annual Conference of MCATA.

Mail before: September 13, 1985 to: Ron Cammaert
                                      Chairman, Award Selection Committee
                                      Alberta Education
                                      200 - 5 Avenue S.
                                      LETHBRIDGE, Alberta   T1J 4C7

Math Council Executive Nomination Form

Nominations of candidates for the following offices for the 1985-86 school year are now being solicited:

President   Secretary
Vice-President   Treasurer

If you wish to nominate a candidate, please complete the form below and mail it by April 19, 1985, to: Gary R. Hill, 310 Laval Blvd. LETHBRIDGE, Alberta T1K 3W5.

If necessary, the election will be conducted by mail. Ballots will be sent to all members on or about May 15, 1985.

Ensure an active council by nominating people who will take an active part in making the Mathematics Council a benefit to all mathematics teachers.

This form may be duplicated if additional nomination forms are required.

Gary Hill
for the Election Committee
MCATA

WE, the undersigned members of the MCATA, nominate:

Name: _____ Address: _____

_____ as a candidate for the office of _____

in the MCATA for the year 1985-86.

Signatures and addresses of two nominators:

Name: _____ Address: _____

Name: _____ Address: _____

(Please include a brief resume of the nominee's qualifications for the position.)

I accept this nomination: _____
                                    (signature of nominee)