

JOURNAL OF THE MATHEMATICS COUNCIL OF THE ALBERTA TEACHERS' ASSOCIATION



3456789 12389 123456789 123456789 123456789 123456789 123456789 123456789 123

Volume 35, Number 1

February 1998



GUIDELINES FOR MANUSCRIPTS

- delta-K is a professional journal for mathematics teachers in Alberta. It is published to
- promote the professional development of mathematics educators, and
- stimulate thinking, explore new ideas and offer various viewpoints.

Submissions are requested that have a classroom as well as a scholarly focus. They may include

- personal explorations of significant classroom experiences;
- descriptions of innovative classroom and school practices;
- reviews or evaluations of instructional and curricular methods, programs or materials;
- · discussions of trends, issues or policies;
- a specific focus on technology in the classroom; and
- a focus on the curriculum, professional and assessment standards of the NCTM.

Manuscript Guidelines

- 1. All manuscripts should be typewritten, double-spaced and properly referenced.
- 2. Preference will be given to manuscripts submitted on 3.5-inch disks using WordPerfect 5.1 or 6.0 or a generic ASCII file. Microsoft Word and AmiPro are also acceptable formats.
- 3. Pictures or illustrations should be clearly labeled and placed where you want them to appear in the article. A caption and photo credit should accompany each photograph.
- 4. If any student sample work is included, please provide a release letter from the student's parent allowing publication in the journal.
- 5. Limit your manuscripts to no more than eight pages double-spaced.
- 6. Letters to the editor or reviews of curriculum materials are welcome.
- 7. delta-K is not refereed. Contributions are reviewed by the editor(s) who reserve the right to edit for clarity and space. The editor shall have the final decision to publish any article. Send manuscripts to Klaus Puhlmann, Editor, PO Box 6482, Edson, Alberta T7E 1T9; fax 723-2414, e-mail klaupuhl@gyrd.ab.ca.

Submission Deadlines

delta-K is published twice a year. Submissions must be received by August 31 for the fall issue and December 15 for the spring issue.

MCATA Mission Statement

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

oelta-k

Volume 35, Number 1

February 1998

CONTENTS	\$	
Comments on Contributors Editorial	3 4	Klaus Puhlmann
FROM YOUR COUNCIL		
From the President's Pen	5	Florence Glanfield
The Right Angle	6	Kay Melville
READER REFLECTIONS		
Editor's Comments	7	
STUDENT CORNER		
Editor's Comments	7	
NATIONAL COUNCIL OF TEACHERS OF MATH	EMA	TICS
NCTM Standards in Action	8	Klaus Puhlmann
The Pyramid Question: A Problem-Solving Adventure	10	Ruth M. McClintock
Increasing Mathematics Confidence by Using Worked Examples	17	William M. Carroll
Let's Solve the Problem Before We Find the Answer	20	Carolyn F. Talton
TEACHING IDEAS		
Western Canadian Protocol: The Common Curriculum Framework (K–12 Mathematics)	25	Hugh Sanders and Gina Vivone-Vernon
A Collection of Connections for Junior High Western Canadian Protocol Mathematics	29	Sol E. Sigurdson, Thomas E. Kieren, Terri-Lynn McLeod and Brenda Healing

Copyright © 1998 by The Alberta Teachers' Association (ATA), 11010 142 Street NW, Edmonton, Alberta T5N 2R1. Permission to use or to reproduce any part of this publication for classroom purposes, except for articles published with permission of the author and noted as "not for reproduction," is hereby granted. *delta-K* is published by the ATA for the Mathematics Council (MCATA). EDITOR: Klaus Puhlmann, PO Box 6482, Edson, Alberta T7E 179. EDITORIAL AND PRODUCTION SERVICES: Central Word Services staff, ATA. Opinions expressed herein are not necessarily those of MCATA or of the ATA. Address correspondence regarding this publication to the editor. *delta-K* is indexed in the Canadian Education Index. ISSN 0319-8367

delta-K, Volume 35, Number 1, February 1998

Calendar Math
Problem Solving Strategies
Problem Solving—A Part of Everyday Thinking
Cube Coloring Problem
Assessing Cooperative Problem Solving

FEATURE ARTICLES

Of the Fourth Dimension

Algorithms and Technology

Reflections on an Extracurricular Parent-Child Mathematics Program

- 38 Art Jorgensen
- 40 Michael Richards
- 41 Octaviano Garcia
- 44 Linda Dickerson-Frilot
- 45 Joanna O. Masingila
- 50 Sandra M. Pulver
- 52 Lynn Gordon Calvert
- 56 Elaine Simmt

COMMENTS ON CONTRIBUTORS

Lynn Gordon Calvert is an assistant professor in the Faculty of Education, Department of Elementary Education, University of Alberta, Edmonton.

William M. Carroll is involved in the research and development of assessment at the University of Chicago School Mathematics Project—Elementary Materials. This article is based on his work at Roosevelt High School in Chicago.

Linda Dickerson-Frilot teaches in an alternative education program at Obsidian Middle School, Redmond, Oregon.

Octaviano Garcia teaches at Cuba Middle School, Cuba, New Mexico.

Brenda Healing teaches at Bentley High School in Bentley.

Art Jorgensen, from Edson, is a retired junior high school principal and a member of the Mathematics Council of The Alberta Teachers' Association.

Thomas E. Kieren is a professor of education (emeritus) in the Faculty of Education, Department of Secondary Education, University of Alberta, Edmonton.

Joanna O. Masingila is an assistant professor of mathematics and mathematics education at Syracuse University, Syracuse, New York.

Ruth M. McClintock has taught at the secondary and collegiate levels and is now at MacMurray College in Jacksonville, Illinois. Her interests include geometry and discrete mathematics.

Terri-Lynn McLeod teaches at Calling Lake High School in Calling Lake.

Kay Melville is a mathematics assessment specialist with the Achievement Testing Unit, Student Evaluation Branch, Alberta Education.

Sandra M. Pulver is a professor of mathematics at Pace University in New York.

Michael Richards is coordinator of the Problem Solving Task Centre Network—a worldwide support group of primary, secondary and tertiary teachers interested in establishing problem solving task centres or incorporating mathematical problem solving into their teaching. Michael also coordinates staff development at Mordialloc-Chelsea Secondary College, Mordialloc, Australia.

Hugh Sanders is acting assistant director, mathematics and science programs, with the Curriculum Standards Branch, Alberta Education.

Sol E. Sigurdson is professor of education (emeritus) in the Faculty of Education, Department of Secondary Education, University of Alberta, Edmonton.

Elaine Simmt is an assistant professor in the Faculty of Education, Department of Secondary Education, University of Alberta, Edmonton.

Carolyn F. Talton teaches graduate and undergraduate courses in elementary mathematics methods at Louisiana Tech University, Ruston. She is especially interested in promoting the thinking and language development necessary for problem solving.

Gina Vivone-Vernon is an assistant director with the Curriculum Standards Branch, Alberta Education.