



Mathbits

Minnesota Council of Teachers of Mathematics

www.mctm.org

Fall Conference Theme:

Explorations in Mathematics and Science

**Friday,
19 October 2001**

Flyer and
Registration
Information
Inside

Mark your calendar now to attend the MCTM Fall Conference on October 19 at North High School in North St. Paul. The conference, held jointly with the Minnesota Science Teachers Association (MnSTA), begins with registration at 7:30 a.m. and the general session at 8:00 a.m. Four sets of concurrent sessions follow with the door prize award session ending at 2:40 p.m. Textbook and other commercial exhibits will be available throughout the day.

The conference theme, "Explorations in Mathematics and Science," will be addressed in breakout sessions where speakers will share teaching ideas and information about standards based curriculum and assessment. Teacher educator sessions will continue to focus on mentoring new teachers as they make the transition from college students to mathematics teachers. A flyer inside this newsletter contains further information on session topics, conference schedule, registration fees, and directions to North High School.

**Delegate
Assembly**

The 2001 MCTM Delegate Assembly will be held on Friday, October 19, in conjunction with the Fall Conference at North High School in North St. Paul. The Delegate Assembly is one means by which the general membership of MCTM can provide input to the Board of Directors. It is an opportunity to bring issues and concerns before the Board in the form of resolutions. Once the Delegate Assembly passes a resolution, the Board then decides on an appropriate course of action. Resolutions and board action are reported to the membership through the *Mathbits* and the MCTM web site.

The Assembly will have a significantly different format than in the past. In previous years, it was held the Thursday evening before the Fall Conference. This year, the Assembly will take place during and immediately after the conference. Delegates will meet with their District Director over lunch to formulate resolutions. Immediately following the conclusion of the conference, a reception will be held, at which time the resolutions will be presented and voted upon using a form of approval voting.

If you will be attending the Fall Conference, please consider volunteering to be a delegate and representing the membership of MCTM in this important function. Contact your District Director to volunteer. District Directors will also be recruiting delegates. If you are asked to be a delegate, please accept the invitation. It is a great opportunity. Not only will you get to attend a first-rate conference, you will have the opportunity to meet with colleagues from across the state in helping to shape the work of your organization. Delegates traveling 100 miles or more will be reimbursed for one night's lodging. All delegates will receive at least partial reimbursement for mileage and will be guests at the reception.

President's Column

As the new school year begins, we are presented with another opportunity to help *all* students attain a rich and deep understanding of mathematics. It is not easy, and for many of us, the idea of reaching all students with meaningful mathematics is still somewhat unsettling. How do we decide what mathematics is important for all students to learn? How do we go about organizing instruction so that all students will learn mathematics with understanding? How do we go about assessing what students are learning? Whether we are in the first year or the 25th year of our career, these are three questions that we should continually be asking both our colleagues and ourselves.

The National Council of Teachers of Mathematics *Principles and Standards for School Mathematics* provides a framework around which we can hold discussions with each other as we attempt to answer the questions posed above. As Lee Stiff, the President of NCTM stated in the July/August issue of the *NCTM News Bulletin*, “*Principles and Standards for School Mathematics* is a guide to what mathematics students should learn; what teaching practices, approaches, and tools show promise; and the role that assessment plays in judging students’ performance and the effectiveness of mathematics programs.” The content and process standards present a vision of connected and coherent mathematics for students from prekindergarten through 12th grade while the six principles describe important features of a high quality mathematics program.

Two of these principles are the Teaching Principle and the Learning Principle. Teaching and learning are two complex and closely related issues. For too long in education—not just mathematics education—there has been, at the very least, a perceived dichotomy between teaching and learning. For mathematics in particular, research over the past several years has shown that how well students learn mathematics is fundamentally connected to how they are taught the mathematics. At the MCTM Spring Conference in 1998, Glenda Lappan, then the President of NCTM, stated, “Most of us as teachers of mathematics have become very good at explaining our understanding of mathematics to our students.”

National and international assessment studies have repeatedly shown that the instructional approach described by Dr. Lappan has been ineffective in helping most students understand mathematics. Indeed, teachers must know and understand mathematics. The Teaching Principle discusses several different kinds of mathematical knowledge teachers need to possess, including knowledge about the whole domain; deep, flexible knowledge about the important ideas central to their grade level; and knowledge about how these ideas can be represented to teach them effectively. However, we must help students create their own understanding by providing a challenging and supportive learning environment. There is no one way to accomplish this. But, as the Learning Principle proposes, in order for students to learn with understanding, the instruction needs to be structured so as to actively engage students, allowing them to build new knowledge and understanding by connecting to their previous knowledge and experience.

The vision of a quality mathematics education for all students cannot be realized overnight. It will take time and cooperative effort. The philosophy of an elderly lion may be helpful in this effort. The elderly lion was sitting on a hill beside a young lion when they spotted a herd of zebra grazing in the valley below. The young lion said excitedly, “Let’s run down there and scare one.” The older lion replied, “Let’s walk down and scare them all.” For some, this “walk” towards reaching all students needs to begin. For others, the “walk” is underway. In either case, may this school year be a time when several steps are taken to move closer to reaching all students.

Tom Muchlinski
MCTM President

A Message from the State Mathematics Specialist

GREETINGS FROM THE MINNESOTA DEPARTMENT OF CHILDREN, FAMILIES & LEARNING! And at the same time, farewell. After eleven years as state mathematics specialist, I will be retiring in September. A search is underway to find the next math specialist, and if it goes well there should be a minimal gap.

The past eleven years have been a remarkable time in mathematics education in Minnesota. As I began work for the state, the NCTM Curriculum and Evaluation standards were just over a year old, and we were in the process of spreading the message they contained throughout the state. As I end my work for the state, the second edition of the standards, *The Principles and Standards for School Mathematics*, is a little more than a year old. They continue the direction set by the 1989 standards, refining and clarifying the message, based on feedback and ten more years of experience and research.

At the state level, we have also defined standards over the course of the last decade. A standards-based system moves the focus from what we teach to what students learn. In the mathematics learning area, our standards define new expectations. At the elementary level, we now call for a broader curriculum, moving beyond the study of number to include more geometry, measurement, patterns, statistics, and probability. At the middle level, we concentrate on the study of rational numbers (fractions) and proportionality, as well as more algebra, geometry, statistics, and probability. At the high school level, we now include all students in the serious study of mathematics. The content includes not only algebra and geometry, but also statistics, probability, discrete mathematics, and many more applications of mathematics.

At the same time that we have changed what we teach and to whom, the evaluation of learning has changed in major ways. When I came to work for the state in 1990 the only

law governing assessment stated that there would be no assessment given to all students in Minnesota. Now, we have testing for all students in mathematics in Grades 3, 5, and 8, with a high school mathematics assessment for all eleventh graders starting in the 2001-2002 school year, and a seventh grade test to follow in a couple of years.

In 1990 when I started, most members of the public paid little attention to mathematics and mathematics education. Parents, the public, the higher education community, and the legislature were all content to leave to teachers and other educators the decisions about who should learn mathematics, what mathematics they should learn, what instruction should look like, whether technology should be part of learning mathematics, and how learning should be assessed. As I leave, all of these facets of mathematics education are part of a public discussion, at times a heated one. While it is exciting to have so much interest in mathematics teaching and learning, it raises challenges we never imagined.

This is just one of many challenges that lie ahead for my successor and all of you. We must find better ways to support all teachers in ongoing learning. Another challenge is ensuring access to technology for all students and preparing teachers to use it effectively. Yet another challenge is the growing scarcity of well-qualified mathematics teachers. Meeting this last challenge will require careful and broad-based strategic planning by all those involved. MCTM, as a strong and widely respected organization, must continue to work tirelessly to meet these and other challenges that present themselves.

Personally, I want to thank each of you for all your enthusiasm and support during my time as state mathematics specialist. It has been great. And let's keep in touch!

Warmly,
Sharon Stenglein

Interested in mathematics reform? Visit <http://www.MathematicallySane.com> for issues and analysis related to the "Math Wars."

Mathbits

Making Mathematics

When Jean Benson finished her secondary mathematics teaching certification at St. Olaf College and worked as an administrative assistant for the Minnesota Mathematics Mobilization, she sparked a lifelong interest in mathematics education. Now, working near Boston for Education Development Center, Inc., she has another opportunity to work with mathematics students and teachers in Minnesota by involving them in the Making Mathematics project.

Funded by the National Science Foundation, Making Mathematics is a national, online mentoring program designed to provide high school students and teachers with the materials and mentoring necessary to engage in a

mathematical research experience. Mentors and their partners begin at EDC's web site (<http://www2.edc.org/makingmath>) by choosing a project or research setting in which to work. Warm up problems, hints, and teaching notes support the process. Advice on problem posing helps the mentors and their partners move in their own directions—emailing each other once a week with questions, results, and advice.

While this research may not answer big questions, and sometimes does not answer new questions in mathematics, it is still a true research experience that gives students and teachers the opportunity and the support to actively *do* mathematics. Interested mentors, teachers, and students can apply online at EDC's web site or email Jean at jbenson@edc.org.

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MCTM Fall Conference

Minnesota Council of Teachers of Mathematics

Explorations in Mathematics and Science

Friday, October 19, 2001

North High School • 2416 E. 11th Avenue • North St. Paul, MN 55109

Schedule Highlights

- 7:30 • Registration
- 7:30 – 1:30 • Exhibits Open
- 8:00 – 9:15 • General Meeting
and Keynote Address
- 9:30 – 10:15 • First Session
- 10:30 – 11:15 • Second Session
- 11:30 – 12:15 • Lunch or Third
Session
- 12:30 – 1:15 • Third Session or
Lunch
- 1:30 – 2:15 • Fourth Session
- 2:20 – 2:40 • Door Prizes

Registration Fees

	By <u>Oct. 10</u>	<u>On-Site</u>
Members:		
Regular	\$25.00	\$30.00
Students	\$12.50	\$15.00
Non-Members:		
Regular:	\$40.00	\$45.00
Students:	\$20.00	\$22.50

Selected Session Topics

- Preparing students for the MCA's
- Mathematics for students with special needs
- Celebrating mathematics with PI day
- Reading mathematics
- Fraction sense
- Exploring data with technology
- Transition from college student to math teacher



Directions to North High School

From the east: From I-694/494 take Hwy 36 west. At Margaret Street (3rd stop light) take a right. Go one block to 11th Avenue and take a left. Continue past the “old North High” past Polar Arena to the “New North High.”

From the west: From I-35E go east on Hwy 36 to McKnight Road. At the stoplight on McKnight, turn left. Go one block to the stop light at 11th Avenue and turn right. The high school is about 3 blocks ahead.

Register by mail or at www.mctm.org by October 10 for early registration fees.

For more information, visit www.mctm.org or contact:

Cathy Wick, Program Chair
320-255-4964
CathyW@stcloudstate.edu

Emily Larsen, Conference Chair
651-653-2600 x 1072
ealars@wbl.whitebear.k12.mn.us

Arnie Cutler, Registration
612-626-8326
cutler@tc.umn.edu

Minnesota Council of Teachers of Mathematics

FALL CONFERENCE EARLY REGISTRATION

North High School, North St Paul

Friday, October 19, 2001

Name _____

Mailing Address _____

City _____ State _____ Zip Code _____

Home phone (____)_____ Work phone (____)_____

Fax number (____)_____ E-Mail address _____

School building/Institution _____

Check appropriate designations:

Table with 4 columns: Position, Level, Early registration fee, mailed by 10/10/01. Rows include Teacher, Supervisor, Student/Aide, Retired, Other and Elementary, Jr. Hi/M.S., High School, Post Secondary, Other.

All registrations include lunch.

* (Group from same college with one payment-individual forms attached-includes 1 year of membership dues)

Dues for MCTM and/or NCTM:

MCTM Dues

Table with 2 columns: Dues type, Amount. Rows: One year regular (\$15.00), Two year regular (\$25.00), Student (\$7.50), Retired (\$7.50).

NCTM Dues*

Table with 2 columns: Dues type, Amount. Rows: Membership with 1 teaching journal (\$65.00), Additional teaching journals @\$28.00, Journal for Research in Mathematics Ed \$50.00.

*(Student dues are one-half regular dues)

Teaching Journal Choice(s):

- Teaching Children Mathematics (K-6)
Mathematics Teaching Middle School (5-9)
Mathematics Teacher (8-up)

Amount Due:

Registration Fee: _____

Membership MCTM: _____

Membership NCTM: _____

Total Due: _____

Payment Method: (Check one)

___ Cash

___ Check payable to MCTM (enclosed)

___ Visa or Mastercard # _____ Exp Date _____

Signature _____

Mail to: MCTM, P.O. Box 120418, New Brighton, MN 55112. Mail by Oct. 10, 2001 to qualify for early registration fees. On-site registrations \$5 higher.

**Minnesota Spring
Mathematics
Conference
March 22-23, 2002**

Catch the Excitement! Give a Talk!

MCTM is very excited to be returning to Duluth for our Spring Conference. An exciting program is developing. The Friday keynote speaker will be Lee Stiff, NCTM President, and Saturday's keynote speaker will be Dr. Humor. There will also be over 150 sessions to attend. We hope you can attend and bring a team from your school. The Program Committee is in the process of

selecting speakers to present at the conference. If you are interested, please complete the form on the back of this page and send it to the address at the bottom. You will be notified by mid-December if your proposal has been accepted. The deadline of October 1, 2001, will be strictly adhered to. We are hoping to post the program on our web site before the conference. In order to do this, speakers must be selected by late fall. Thank you and see you in Duluth.

**Presidential Award for Excellence in Mathematics and Science
Teaching (PAEMST)**

**PAEMST
2002 Finalists**

Congratulations to the five teachers who have been selected as Minnesota's state finalists for the Presidential Award for Excellence in Mathematics Teaching. The two finalists for the secondary mathematics award are Carol Borne of Henry High School in Minneapolis and Don Karlgaard of Brainerd High School. The three elementary finalists are Jim Brickwedde of Meadowbrook Elementary

in Golden Valley, part of the Hopkins School District, Mary Kennedy of McKinley Elementary in Fergus Falls, and Leslie Kronk of Southview Elementary in Waconia. All five finalists will be honored in Minnesota this fall. One person from each level will be selected to represent Minnesota at festivities in Washington, D.C. in spring of 2002.

**Reflections of a 2001
Awardee**

It was while standing outside the Eisenhower Office Building, waiting in line to go through security for entry into the White House compound that the uniqueness of the entire experience struck me. The sun was shining on a brisk March day, and people from the southern states huddled together to get warmth, while the folks from northern states reveled in the sunshine and, for them, relatively warm temperatures at the end of a long winter. We were colleagues from across the country, sharing the experience of having been recognized and awarded by our peers at the just completed awards ceremony at the National Academy of Sciences, and now we were to meet the president for a group picture outside the west wing of the White House. Amazing.

The entire stay in Washington was punctuated by experience after impression after surprise: dinner at the State Department dining room with the head of the genome project as speaker, reception at the Smithsonian with a premiere viewing of a not-yet-released Imax film, dinner cruise on the Potomac, an impromptu tour of the Senate floor during lunch recess with Paul Wellstone as guide—and the list goes on. But the highlight, which ran throughout the days in D.C., was the chance to meet and exchange ideas with inventive and excited colleagues. It is especially for that opportunity that I would like to thank the NSF and the people involved with the PAEMST at both the state and national levels.

Rich Enderton

SPEAKER PROPOSAL FORM – MCTM SPRING CONFERENCE

March 22-23, 2002 DULUTH ENTERTAINMENT CONVENTION CENTER- DULUTH, MN

- I am submitting a proposal to participate in the conference as a speaker. Please complete Sections I and II.
- I wish to participate in the conference as a presider. Please complete Sections I and III.
- I am submitting a speaker proposal and also wish to participate as a presider. Please complete Sections I ,II, and III.

SECTION I.

PREFERRED MAILING ADDRESS (Will be used for all correspondence with you)

NAME _____

STREET/PO BOX _____

CITY/STATE/ZIP _____

HOME PHONE _____ WORK PHONE _____

FAX _____ E-MAIL ADDRESS _____

YOUR NAME AND SCHOOL OR PROFESSIONAL AFFILIATION AND ADDRESS AS THEY SHOULD APPEAR IN THE CONFERENCE PROGRAM

NAME (if different from above) _____

AFFILIATION _____

CITY/STATE _____

NCTM Publications, which you may reference during your presentation, can be made available for sale at the NCTM booth. Please list the titles, authors: _____

SECTION II.

PLEASE CIRCLE THE APPROPRIATE GRADE LEVELS FOR YOUR PRESENTATION

K 1 2 3 4 5 6 7 8 9 10 11 12 College General Interest

PLEASE CHECK THE APPROPRIATE CATEGORY FOR YOUR PRESENTATION

Regular Session (60 Minutes) Workshop (90 Minutes) Poster Session

PLEASE CHECK THE APPROPRIATE STRAND FOR YOUR PRESENTATION (if applicable)

Learning Principle Curriculum Principle Standards Geometry Problem Solving Reasoning & Proof

TITLE OF PRESENTATION (Two lines maximum, 36 spaces per line maximum)

ADDITIONAL DESCRIPTION FOR PROGRAM –Optional (20 words maximum)

EQUIPMENT OR FACILITIES NEEDS

Second Overhead Calculators-Model TI - ___ VCR/Monitor

Other needs: _____

SECTION III.

I WOULD BE WILLING TO SERVE AS A PRESIDER (please check any preferences for times or sessions)

__ Friday AM __ Friday PM __ Saturday AM Level _____ Topic/Speaker _____

PLEASE RETURN BY 10/01/01 TO:

Karen Coblenz 23649 727th Ave.
 Dassel, MN 55325
 FAX: (320) 286-4151 E-mail: karen@de.dc.k12.mn.us

Grants Available to Teachers

NCTM Mathematics Education Trust (MET) Grants

The Mathematics Education Trust (MET) was established by the National Council of Teachers of Mathematics (NCTM) to fund special projects that enhance the teaching and learning of mathematics. All 2002-2003 applications (except Toyota TIME) must be postmarked by 5 December 2001. The deadline for Toyota TIME is 10 January 2002.

Clarence Olander Grants for In-Service Training for Elementary Schools:

Elementary schools receive up to \$2000 for support of in-service programs. Costs may include honoraria and expenses for consultants, materials, substitute time, and conference registrations.

Ernest Duncan Grants for Grades Pre-K-6

Teachers: Grants of up to \$2000 are provided to persons currently working at the grades Pre-K-6 level to improve their own professional competence as classroom teachers of mathematics.

John and Stacey Wahl Grants for Grades Pre-K-8 Teachers: Grants of up to \$2000 are awarded to Pre-K-8 teachers to develop a project that will enable students to better appreciate and understand some aspect of geometry that is consistent with the NCTM *Standards*.

E. Glenadine Gibb Grants for Implementing the NCTM Standards:

Grants of up to \$2000 are provided to grades Pre-K-12 teachers to carry out a plan that implements some aspect of the NCTM *Standards* in their own classrooms.

Dale Seymour Scholarships for Grades Pre-K-12 Teachers:

Scholarships of up to \$2000 are provided to grades Pre-K-12 teachers to improve their own professional competence as classroom teachers of mathematics.

Edward G. Begle Grant for Classroom-Based Research: Provides up to \$8000 to support collaborative classroom-based research in precollege mathematics education.

Future Leaders Annual Meeting Support

(FLAMeS) Project Awards: Up to \$1000 is provided for travel, subsistence expenses, and substitute teacher costs of full-time mathematics teachers in grades K-12 who have never attended an NCTM annual meeting, are NCTM members, and have taught three to ten years.

Toyota's Investment in Mathematics Excellence (Toyota TIME) Grants for

Grades K-12 Teachers: Toyota TIME grants of up to \$10 000 each will be awarded to up to thirty-five U.S. teachers in grades K-12. Grants are made possible by Toyota Motor Sales, U.S.A., Inc., and the Mathematics Education Trust. For more information on Toyota TIME, call toll-free (888) 573-TIME or e-mail toyotatime@nctm.org.

Mary Dolciani Grants for Grades 7-12

Teachers: Grants of up to \$2000 are provided to persons currently working at the grades 7-12 level to improve their own professional competence as classroom teachers of mathematics.

Theoni Pappas Incentive Grants for Grades 9-12 Teachers:

Grants of up to \$2000 are provided to grades 9-12 teachers to develop mathematical enrichment materials or lessons detailing an innovative teaching unit they have implemented in their own classroom.

Isabelle P. Rucker Awards for Future

Teachers: Up to \$1000 is provided for travel and subsistence expenses to help support attendance at an NCTM annual or regional meeting by full-time students who are preparing to be precollege mathematics teachers.

Kenneth B. Cummins Grant for Affiliates:

This grant is one of several awards offered through the Affiliates Services Committee for Affiliates in good standing to initiate professional activities and programs that might otherwise not be possible. For more information on Affiliate grants call (703) 620-9840, ext. 2104 or e-mail affiliates@nctm.org.

For additional information see the NCTM website (www.nctm.org).

Mark Your Calendar

	<u>2001</u>	
10/11 – 10/13		NCTM Regional Meeting, Madison, Wisconsin
10/19		MCTM Fall Conference, North High School, North St. Paul, Minnesota
	<u>2002</u>	
3/22 – 3/23		MCTM Spring Conference, Duluth, Minnesota
4/21 – 4/24		NCTM Annual Meeting, Las Vegas, Nevada
4/26		World's Largest Math Event 8, "Entertaining Mathematics"

With Appreciation

At the Spring Conference in Duluth this past spring, three MCTM board members completed their terms of service. Susan Johnson, Vice-President for Mathematics Education; Sandy Katkov, District 3 Director; and Michele Luke, District 6 Director. All three made many contributions to the work of the council. Among these contributions were Susan Johnson's work in helping to plan and organize the Fall Conference, Sandy Katkov's work with Math Day at the State Fair, and Michele Luke's work as the liaison to Math Counts. Past-President Martha Wallace presented the outgoing board members with plaques in appreciation for their work in these and several other areas. New board members installed at the same time are: Kathleen Cramer, Vice-President for Mathematics Education; Judy Pflingsten, District 3 Director; and Dennis Holt, District 6 Director.

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Published by

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