



Mathbits

PRESIDENTIAL AWARD FOR EXCELLENCE IN MATHEMATICS AND SCIENCE TEACHING MINNESOTA STATE FINALISTS ANNOUNCED

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The National Science Foundation has announced the three state finalists for the 2004 Presidential Award for Excellence in Mathematics and Science Teaching (PAEMST). In mathematics, the Minnesota finalists are:

Mary Kennedy from Fergus Falls

Kathleen Miller from Anoka

Liz Stamson from Eden Prairie

These three outstanding teachers were honored at a banquet in November and will be recognized at the Spring Mathematics Conference in Duluth. The Presidential Award winner will be announced next spring. The 2004 award was open to teachers in grades K – 6.

Nominations and applications are now being accepted for the 2005 PAEMST. The 2005 award is open to teachers in grades 7 – 12. Teachers must be nominated for this award. Applications need to be postmarked by May 2, 2005.

For more information, including nomination forms go to www.paemst.org or contact Tom Muchlinski, the Minnesota PAEMST coordinator for mathematics at tom.muchlinski@state.mn.us or 651-582-8859.

It's not too early to start planning...

2005 MCTM Minnesota Spring Mathematics Conference

Quality Teaching: The Key to Understanding Mathematics

Friday-Saturday, April 29-30, 2005

Participate in the conference as a Speaker or Presider

Speaker proposal forms (including and online submission option) are available on the MCTM website <http://www.mctm.org/conferences.html>. Submit speaker proposals as soon as possible. Presiders may also use the speaker proposal form to submit preferences for times and sessions.

Upcoming Events:

- Future Teacher's Conference
- Spring Conference Registration Form

Pondering by the President

As I was sorting some newspaper articles that I had cut out of the Star Tribune, I came across a Dear Abby column entitled, "Paying tribute to a dad's wisdom". It got my attention because this year I turned the same age that my father was when he died. To give you a little background, I was born and raised on a farm in rural south-eastern South Dakota. I attended a one-room country school for eight years and then went to a very small high school. My mother taught in a one-room country school and my father was a farmer. So what are some of the things I learned from my dad?

- If the weather is nice, bail the hay, pick the corn, etc.
- When it rains, it is time to repair machinery.
- Take time to go fishing.
- The smartest person is not always the one with the degrees or book learning.
- Family is the most important thing.
- If someone needs help, help them. The favor will be returned in the future.
- There is always more than one road that will get you to a destination. We never drove the same road if there was an alternative. Ask me about the Niobrara Ferry sometime.
- Treat people with respect.
- Be honest.

So what do these have to do with what I do now ... teaching.

- Sometimes you just need to throw away that lesson plan and go with a teachable moment.
- In my present assignment at Hopkins, I spend most of my time repairing misconcepts or filling in gaps in my student's knowledge.
- I try to take some time to get to know my students ... to find out what they are interested in ... to build those relationships
- Every once in a while, a student shares a method for doing something that is not what I thought about but works better. I try to celebrate those moments. Ask me about the Odenthal theorem.
- Family is the most important thing; I try to contact parents as often as I can. I am lucky enough to have a grading program that can send email reports. It is great.
- I try to help if someone needs help. I am not as good as I could be about asking for help when I need it.
- I know that when I started teaching, I did a really good job of showing students how to do a process and just expecting all of them to do it just that way. I have matured and learned that there are many ways to get to the same destination. Students may not use the most efficient method, but if they arrive at the destination, who are we to say that it is wrong?
- I know that I can not expect students to respect me if I do not respect them.
- Be honest.

As I reflect back on what I learned from my dad, many of those lessons are still with me today. What did you learn from your dad? (PS. Mom will get equal time, too).

Sue Westegaard
MCTM President

**...some of the things
I learned from my
dad...and what they
have to do
with ...teaching.**

HOW SERIOUS ARE WE ABOUT ALL STUDENTS LEARNING QUALITY MATHEMATICS?

On my way to Rochester for a meeting last month, I stopped for gas in Cannon Falls. Being ahead of schedule for a change, I decided to clean out my car before getting back on the road. When that monumental task was finished I proceeded to pull away from the pump only to realize that I never removed the hose from the car's gas tank causing the hose to disconnect from the pump. After owning up to what I did with the gas station attendant, I began to reflect on the significance of this blunder and eventually got to how this might relate to mathematics instruction.

A few days later I ended up reading the September issue of "Educational Leadership" with its focus on teaching for meaning. Steve Leinwand and Steve Fleischman wrote an article entitled "Research Matters/Teach Mathematics Right the First Time" which talked about a disconnect between research and practice in mathematics education. In particular, they focused on a growing body of research that shows if initial instruction focuses exclusively on procedural skills, then students may have difficulty developing an understanding of concepts.

It has been over a year and a half since the legislature adopted the Academic Standards in Mathematics. At the high school level, these standards require all students to earn three credits, which must encompass algebra, geometry and probability and data. In terms of the algebra requirement, historically a significant number students have not been successful in their study of algebra or may never have studied algebra at all. If these students are to be more successful in their study of algebra, not only must we expose them to algebraic concepts throughout all the grades, we must give careful consideration to the instruction they receive. In particular, we must give careful attention to how we can best develop both skill and understanding.

That being the case, are we willing to change practice when research indicates such a change is warranted in terms of improving student achievement? Why is it in education that when programs or practices begin to show promise for improving student achievement, particularly the achievement of students who typically have been under-performers, we discount those programs or practices if they do not fit with what we have always done or with what we have always believed? If we truly are serious about the concept of all students learning useful mathematics, we cannot afford to discount any practice that holds promise for raising student achievement, regardless of how it fits with what we have always done or believed.

Isaiah Benjamin is preparing for his move into the multi-aged classroom with the arrival of his new brother or sister scheduled for mid-January. In the meantime he has been studying transformational geometry at an informal level, particularly reflections. He became intensely interested in the little boy who looked exactly like him in the mirror at the end of one of our hallways. His grandmother found it amusing until he tried to force feed a banana to that other young boy. Again, Isaiah's grandfather was convicted of not monitoring his learning closely enough.

Tom Muchlinski
State Mathematics Specialist

MDE Mathematics Specialist Report

...we cannot afford to discount any practice that holds promise for raising student achievement, regardless of how it fits with what we have always done or believed.

Board of Directors Election

Five offices on the Board of Directors of MCTM will be filled in this current election. The members of the Nominations and Elections Committee have nominated candidates for each office. Please read the descriptions of the nominated candidates on the attached pages and complete the enclosed ballot. All ballots must be postmarked by December 17, 2004.

Typically fewer than 10% of the membership return their election ballots. **YOUR VOTE IS IMPORTANT.** Complete your ballot and drop it in the mail today.

Office Qualifications and Responsibilities:

I. Vice President for Senior High School

The vice-president for senior high school represents senior high school teachers from across the state. A nominee for vice-president must have been a member of the Council continuously during the preceding three years and have participated in the activities of the Council. The vice-president serves a three year term. The vice-presidents plan all conferences sponsored by the Council.

II. Vice President at Large

The vice-president at large is elected from the MCTM membership at large. (Additional for vice-presidents, see above.)

IV. District Directors (districts 1, 4, and 7)

District directors represent the members in their district. It is the responsibility of directors to promote membership in MCTM, to serve as representatives of their district's members in the Delegate Assembly, and to identify and work to solve problems that may be specific to mathematics teaching in their district. Nominees for district directors must have been a member of the Council continuously during the preceding three years and must work in the district that the director is to represent. The directors shall serve a term of three years.

Note: The above information is taken from *Bylaws of the Minnesota Council of Teachers of Mathematics, effective May 1, 2003*.

Candidate Information

Enclosed ballot must be returned by December 17, 2004

Candidates for Vice-President for Senior High School



Current Position:
Mathematics Teacher
Mahtomedi High School

Donna Forbes

Education:

B.S. Math and Education, Widener University, Chester, PA
M.A. Curriculum and Design, University of St Thomas

Professional Affiliations:

Minnesota Council of Teachers of Mathematics
National Council of Teachers of Mathematics
USTA, US Lacrosse Association

Previous Involvement with MCTM and Mathematics

Education:

MCTM District 4 Director
Member of Best Practice
Presenter and Presider at MCTM and MEA conferences
Worked with Education MN on various projects for math
Member of District Curriculum committee

Goals as an MCTM Officer:

MCTM is about supporting educators in their work. It is about promoting quality mathematics for all students. I will encourage teachers to join the organization and participate in the conferences and workshops. Communication among us is key to the success of the organization. I have learned and gained a lot from MCTM and I would like to give back to the organization by being on the board.

(continuation from bottom of next column)

- 2) To represent MCTM members in program and policy discussion and decision making at the state level.
- 3) To study and communicate with MCTM members trends and changes in curriculum and instruction in mathematics education.

Other Information:

Presidential Award for Excellence in Science and Mathematics Teaching, 1992



Current Position:
Teaching and Learning Specialist for Secondary Mathematics
Anoka-Hennepin School District 11

Dennis M. Holt

Education:

B.S. Mathematics Education, Univ. of Minnesota
M.Ed. Mathematics Education, Univ. of Minnesota
Additional Coursework at the Univ. of Minnesota

Professional Affiliations:

National Council of Teachers of Mathematics
Minnesota Council of Teachers of Mathematics
National Council of Supervisors of Mathematics
Association for Supervisors of Curriculum Development
Anoka-Hennepin Education Association, Education Minnesota, National Education Association

Previous Involvement with MCTM and Mathematics

Education:

Hospitality Committee Co-chair, 2004 NCTM Regional Conference; NSF Grant Co-Principal Investigator - AH High School Mathematics Leadership Development Program; Speaker at numerous local, state and regional MCTM and NCTM conferences; Site Coordinator, 2003 MCTM Fall Conference, 1993 and 1994 MCTM Fall Conferences; MCTM Board of Directors member, 1990-1998, 2001-2002; Registration Chair, MCTM Spring Conference, 1995-1999; Co-Editor of *Math Times* and *MathBits*, MCTM publications, 1995-1998; Educational Materials Committee Co-chair, 1997 NCTM National Conference; MCTM Representative to NCTM, 1990-1994; Educational Materials Committee Chair, 1992 NCTM Regional Conference; Numerous Anoka-Hennepin District 11 study and steering committees

Goals as an MCTM Officer:

- 1) To work for the improvement of mathematics education by providing opportunities for educational professionals to learn from each other and communicate with each other regarding mathematics instruction.

(continued at bottom of previous column)

Candidate Information

Enclosed ballot must be returned by December 17, 2003

Candidates for Vice President at Large



Lisa Conzemius

Current Position:

Senior High Mathematics
Teacher
Detroit Lakes Senior High
School

Education:

B.A. Mathematics Education, Concordia College,
Moorhead, MN
M.A. Curriculum and Instruction, South Dakota State Univer-
sity, Brookings, SD

Professional Affiliations:

Minnesota Council of Teachers of Mathematics
National Council of Teachers of Mathematics
Education Minnesota

Previous Involvement with MCTM and Mathematics

Education:

MCTM District 7 Director (2002-2005), Presenter and presider
at MCTM fall and spring conferences, Frequent Delegate to
MCTM Delegate Assembly, Member of the evaluation team
for the 11th grade MCA test (2001-2003), Core Plus trainer
(1998-2004), Member of Mathematics Best Practice Network
(1994-2002), Member of Quality Teaching Network for Mathe-
matics (2004) Minnesota Mathematics Frameworks reviewer
and trainer, Chance and Data Academy trainer, Facilitator for
Mathematics Phase II training

Goals as an MCTM Officer:

I will continue to promote improved communication and
awareness of MCTM and other mathematics activities. I will
promote fall and spring math conferences so that teachers and
pre-service teachers can continue to grow by learning new and
improved teaching strategies. I will encourage teachers to be-
come more involved in MCTM and NCTM. I will also work to
increase membership of MCTM.

Other Information:

This is my 16th year of teaching. I love math education. I get
excited every day to be in the classroom. I welcome the oppor-
tunity to continue to be involved with MCTM. I truly enjoy
sharing ideas with others about math education.

Current Position:

Math Specialist, K-12
Duluth Public Schools



Jo Ann Luhtala

Education:

B.A. Elementary Education, College of St. Scholastica
M.Ed. University of Minnesota, Duluth

Professional Affiliations:

Minnesota Council of Teachers of Mathematics
National Council of Teachers of Mathematics
WME, QTN Mathematics Team, Arrowhead Reading Council

Previous Involvement with MCTM and Mathematics

Education:

MCTM Board District 8 Director, 1994-1997; VP Junior High,
1998-2001; Presenter at MCTM Fall and Spring Conferences,
MCTM Spring Conference Co-Chair and Member of the Pro-
gram Committee; MN Mathematics Frameworks committee,
Member of Mathematics Best Practice and QTN Team

Goals as an MCTM Officer:

I intend to continue the hard work to make MCTM accessible
to all math educators in Minnesota. We need a professional
organization that is committed to math education for all, in-
cluding math educators. The power and effectiveness of
MCTM is its membership.

Other Information:

I am married and have two daughters. On October 22, my first
grandchild was born—a boy, Noah Christian.

Candidate Information

Enclosed ballot must be returned by December 17, 2004

Candidates for Candidates for District 1 Director



Michelle Bacon

Current Position:

8th grade math teacher
Willow Creek Middle School,
Rochester

Education:

B.S. Mathematics and German Education, Winona State Univ.
M.Ed. Curriculum and Instruction, University of Minnesota
Doctorate work at University of Minnesota in Ed Policy

Professional Affiliations:

Minnesota Council of Teachers of Mathematics
National Council of Teachers of Mathematics
National Middle School Association
National Staff Development Council, and ASCD
I am also active in my local Ed MN unit.

Previous Involvement with MCTM and Mathematics

Education:

I became involved with MCTM in the mid 1990's and have presented and/or presided at the annual Spring conference since 1997. This last year I also presented at the symposium prior to the conference. I am a current member of the Quality Teaching Network for math in Minnesota. I worked on the MathBits committee during the 2002-2004 school years.

Goals as an MCTM Officer:

- 1) To continue the spread of excellent mathematics teaching and learning throughout the state.
- 2) To improve information exchanges among District 1 members, perhaps using an electronic medium for collaboration.
- 3) I would like to see us focus providing professional development on assessment techniques in the upcoming years.



Bill Putnam

Current Position:

Math Teacher and Department
Chair, AP Calculus and Year of
Integrated Math, Math League
Coach
John Marshall High School,
Rochester

Education:

B.S. Math Education, Winona State University
M.S. Math Education, Winona State University
Ed. Specialist Equivalency from Winona State University and the University of Minnesota

Professional Affiliations:

National Council of Teachers of Mathematics
Minnesota Council of Teachers of Mathematics
Quality Teacher Network in Mathematics for the Department of Education

Previous Involvement with MCTM and Mathematics

Education:

I have been both speaker and presider at state MCTM conventions. I have been a speaker at regional NCTM Conferences. I am a current member of the endowment committee for MCTM. I have been on the review panel for "The Mathematics Teacher" published by NCTM. I have helped train math teachers in various parts of the United States and Minnesota on implementation of Mathematics: Modeling My World developed by Comap.

Goals as an MCTM Officer:

- 1) Listen to the concerns of math teachers in District 1 relay those concerns to MCTM Board of Directors.
- 2) To be an active member of MCTM and in the process to help enhance math education in Minnesota.

Candidate Information

Enclosed ballot must be returned by December 17, 2004

Candidates for District 4 Director



Deb Guthrie

Current Position:

Multi-age Teacher (Gr. 1-2)
Valentine Hills Elementary
School, Mounds View School
District

Education:

B.A. Psychology, Hamline University
M.A.Ed. Educational Psychology, Arizona State University

Professional Affiliations:

National Council of Teachers of Mathematics
Minnesota Council of Teachers of Mathematics
Education Minnesota

Previous Involvement with MCTM and Mathematics

Education:

Presenter and Presider at MCTM and NCTM Conferences
MCTM Delegate Assembly
Facilitator - Dynamic Classroom Assessment (Gr. 5-12)
Facilitator - MDE Algebra Institutes (K-6)
Member - Mathematics Quality Teaching Network
Participant - CGI Facilitator Institutes
Facilitator - SciMath Regional Frameworks Workshops
Christa McAuliffe Fellowship (2001-2002)
Participant - Leadership Institute in Discrete Mathematics for K-8
Teachers, Rutgers University
National Board Certified Teacher

Goals as an MCTM Officer:

- 1) Increase membership by promoting awareness of MCTM and all it has to offer its members.
- 2) Develop and support opportunities to improve math education.
- 3) Encourage networking among math educators in our state.

Other Information:

I enjoy being part of the dynamic professional development environment provided by MCTM. I would appreciate the opportunity to give back to the organization by serving on the MCTM Board of Directors.



Karen Hyers

Current Position:

Mathematics Teacher
Tartan High School, ISD 622

Education:

M.Ed. Mathematics Education, University of Minnesota, College of Education
M.S. Mathematics, University of Minnesota, Graduate School
B.A. Mathematics, The College of Wooster, Wooster, Ohio,

Professional Affiliations:

National Council of Teachers of Mathematics
Minnesota Council of Teachers of Mathematics
Delta Kappa Gamma
Phi Beta Kappa
Education Minnesota

Previous Involvement with MCTM and Mathematics

Education:

NCTM Publicity Committee for 2004 Minneapolis Regional Conference, MCTM Publicity Committee 2003-present, NCTM Speaker for National Conference 2002, 2003, 2004, NCTM Speaker for Minneapolis Regional Conference 2004, MCTM Speaker for Fall and Spring Conferences 1996-present, NCTM Technology Committee for 1997 National Conference, Math League Coach and Division Coordinator, Data Recognition Corporation, Educator-in-Residence, COMAP curriculum trainer, Mentor for new teachers, Building Blocks Volunteer Tutor 3rd grade, St Paul's West Side, Summer Program

Goals as an MCTM Officer:

MCTM should continue to be an organization focused on the exchange of professional ideas. Our conferences, website, and Mathbits provide multiple opportunities for communication regarding best instructional practices and connections across K-16 levels. As a Board member, I will work to promote these opportunities with the teachers in District 4 and to increase our teacher participation in MCTM. These activities have helped me to develop professionally. I would like to give back to the organization.

Candidate Information

Enclosed ballot must be returned by December 17, 2004

Candidates for District 7 Director



Sonja L. Goerd

Current Position:

Research Assistant at Univ. of Minnesota
On leave from Sauk Centre High School

Education:

B.A. Mathematics, Secondary Educ., College of St. Scholastica
M.S. Mathematics, St. Cloud State University
Currently enrolled in Ph.D. program, Curriculum and Instruction, Mathematics Education, University of Minnesota

Professional Affiliations:

National Council of Teachers of Mathematics
Minnesota Council of Teachers of Mathematics
Mathematical Association of America, Pi Mu Epsilon

Previous Involvement with MCTM and Mathematics

Education:

I am currently on leave from Sauk Centre High School where I taught for 8 years, as I am now enrolled in the doctoral program in Curriculum and Instruction—Mathematics Education at the University of Minnesota. At Sauk Centre High School I was active in helping to continuously review and revise our district's mathematics curriculum. I also regularly attended and presented at the state MCTM conferences. I was also recently invited to represent high school teachers on the national advisory team to Educational Testing Service for the revision of the Mathematics Praxis Exams.

Goals as an MCTM Officer:

If selected as the District 7 Director, I will continue to promote attendance at the fall and spring MCTM conferences, as I consider these great opportunities for teachers to connect and share ideas with others in our profession. I will also encourage more members in District 7 to become actively involved in both MCTM and NCTM by not only attending conferences, but also by serving on committees, presenting or presiding at conferences, and/or serving as mentors to others. I will also encourage teachers in training to become members of MCTM. Also, in representing District 7, I will welcome input from those in the district so that MCTM may continue to recognize the needs of all members.



Linda Zsedeny

Current Position:

7th grade math teacher
Fergus Falls Public Schools
District 544

Education:

B.S. degree from Concordia College, Moorhead
Master's Degree in Education from St. Thomas
National Board Certification

Professional Affiliations:

Minnesota Council of Teachers of Mathematics
National Council of Teachers of Mathematics

Previous Involvement with MCTM and Mathematics

Education:

Worked with a team that presented Frameworks sessions; Presenter and presider at past MCTM conventions; Part of a TIMMS study team; Part of a team selected to attend the Presidential Awardees Academy for Excellence; Participated in an e-session set up through NCTM; Part of former Best Practice Organization; Worked on MCA's and BST's – Item review and data review as well as earlier standards work.

Goals as an MCTM Officer:

As a MCTM Officer I would like to continue working with "NO MATH TEACHER LEFT BEHIND" (i.e. establishing contacts in every school across the district). I would also like to collect more data on what materials are being used in which school districts. (We did this a few years ago.) We could put this information out there to see if there is an interest in some local user groups getting together and sharing ideas. I would like to somehow include the special education and English as a second language teachers in a dialogue about math curriculum choices and modifications to best meet their students needs.

Other information:

I feel I could contribute enthusiasm as well as creative ideas to the board. I would look forward to working with any of the great people active in the mathematics community. We all have the same goal: to give our best to the students. We want to leave a mark, not about ourselves, but about instilling in students a passion for understanding mathematics.

AP STATISTICS AND MORE....

A SPECIAL OPPORTUNITY FOR AP STAT TEACHERS IN THE MIDWEST
Are your AP Statistics Students excited about statistics and ready for **MORE?**

You are cordially invited to be our guest for a one-day conference featuring:

- Fresh ideas for classroom activities
- New topics for your AP Stat class
- Fun stuff to do in your AP Stat class after the AP Stat exam in May
- Insights into statistical opportunities for your students in college and careers

GOAL: To enrich AP Statistics' teachers understanding and teaching of statistics, while also enabling them to better prepare their students for further studies.

Three 90 minute sessions:

- Doing MORE with Simulations to Teach Introductory Statistics
Beth Chance, CalPoly
- Adding MORE on Multiple Regression, ANOVA and Experimental Design to your Repertoire
Paul Roback, St. Olaf College
- Providing MORE Information to your Students about Statistics in College and Careers
Julie Legler, St. Olaf College; St. Olaf College statistics students; and practicing statisticians in the area

Who: AP Statistics teachers

How: **The costs of lunch, your substitute teachers, and registration will be covered by NSF grant #0354308**

When: Thursday, February 24, 2005, 8:30 am - 3:30 pm

Where: St. Olaf College, Northfield, Minnesota 30 miles south of the Twin Cities on 1-35

Register on line at www.stolaf.edu/depts/statistics/apstatworkshop2.htm

Questions? Call Julie Legler (507-646-3573 or legler@stolaf.edu), Paul Roback (507-646-3861 or robback@stolaf.edu) or Randy Bailey (952-432-6421 or Randy.Bailey@district196.org) for more information.

Parents: How to Help When You Don't Know How (ENC Focus)

This Eisenhower National Clearinghouse for Mathematics and Science Education Focus Issue addresses the concerns of many parents that they don't recognize the mathematics their children are being asked to do. The article "That's Not the Way I Learned It!" is from a parents point of view. Information and resources for parents and for educators trying to help address parents' concerns is provided. What follows is directly from the ENC website at www.enc.org/features/focus/archive/howtohelp/

As educators, you know that parents and other family members are invaluable partners when it comes to student learning. They help students with homework, with projects, even with staying motivated to learn. And yet, sometimes these "helpers" need help in these areas--sometimes they don't understand the content, or the learning process, or the expectations placed on students by the national standards.

Here's where you come in. This issue of *ENC Focus* is all about helping parents help their kids. To make parents aware of how this issue can be useful to them, we've created a printable flyer that you can hand out at back-to-school night, open house, or during parent-teacher conferences. Or you could send it home with progress reports or report cards. You could also email it to parents if you have access to parental email addresses, or put it on a class web site.

Be equipped to help your students' parents understand what and why you are teaching the mathematics they see their children doing.

Professional Development Opportunity

It's not the classroom you students' parents knew anymore.

Resources for Math Educators

The Shodor Education Foundation, Inc

The Shodor Foundation is a non-profit research and education organization dedicated to the advancement of science and math education, specifically through the use of modeling and simulation technologies. The Shodor Foundation (www.shodor.org) operates projects in three areas: curriculum materials, faculty development, and student enrichment. The goal of one of the current projects, *Project Interactivate*, is the creation, evaluation, and dissemination of interactive Java-based courseware for exploration in mathematics. The lessons and modules based on the activities have been developed to correspond with middle grades curricula and are compliant with NCTM standards and materials. The emphasis is on the authentic use of technology. Below is the Shodor Foundation's statement of purpose regarding *Project Inveractivate*. www.shodor.org/interactivate/

The middle school mathematics texts currently in use by DoDDS, DDESS, and other school systems across the country are a significant step toward implementation of the national standards set forth by the National Council of Teachers of Mathematics (NCTM). Both subject matter and presentation are designed to address a wide range of learning styles, embrace diversity, and generate true interest in mathematics rather than a fleeting familiarity with a few computational algorithms.

A critical element that is largely missing from these texts is the authentic application of modern technology, especially but not limited to computers. However, because the authors of the new middle school curricula have made such an effort to provide examples of how mathematics is applied in the workplace and in the real world in general, there are a wealth of opportunities already embedded in the current texts for implementation of numerical models and explorations.

These technology-enhanced materials could really allow the students to see that the mathematics is applicable to real world. To *their* world. Furthermore, by using technology in authentic ways to explore a variety of situations, students and teachers actually use simple versions of the kinds of mathematical modeling tools that are used in the real world beyond the school walls. In short, by taking advantage of the good work that has already been done by the publisher, we have implemented a set of well written, authentic modeling tools and activities that will truly make the mathematics interactive.

These are not "drill and kill" practice modules attempting to build keyboard skills and mousing dexterity; nor are they a collection of computerized word problems to be solved in some linear fashion. Our goal is to provide significant computer-enhanced, supplemental activities throughout the middle school mathematics curriculum that would extend the learning styles and objectives now employed.

The primary focus is to enhance the teaching and learning experience in middle school mathematics. The project materials are easily adapted to many different middle school texts. Listed below are the texts currently supported directly through *Project Interactivate*. For links to tables of contents for each of the texts, go to www.shodor.org/interactivate/texts/index.html.

[Math Thematics](#), published by McDougal Littell

[Interactive Math](#), published by the Glencoe Division of McGraw-Hill

[Mathematics in Action](#), published by Macmillian/McGraw-Hill

[Mathematics in Context](#), published by Encyclopedia Britannica Educational Corporation

[MathScape](#), published by Creative Publishing

[Middle Grade Mathematics](#), published by Prentice Hall

[Connected Mathematics](#), published by Prentice Hall

For additional information on how technology can support teachers and students in getting students ready for algebra, including standards-based classroom examples, visit *Mission: Algebra for grades 6, 7, 8* at <http://neirtec.terc.edu/ma/home.cfm>

**Keep in mind the
NCTM Professional
Development Focus of
the Year: Developing
Algebraic Thinking**

Problems for All Grade Levels

Miguel and Shantel were eating their lunch in the school lunchroom when Miguel said, "How many times do the clock hands pass each other in 24 hours?" Sounds easy, but Shantel didn't know. Do you?



The number 45 has some curious properties. One property is that it may be divided into four parts in such a way that if you add two to the first, subtract two from the second, multiply the third by two, and divide the fourth by two, the results will be the same. What are the four parts?

Arrange ten pennies, four pennies in a row, in only five rows.



A riddle:

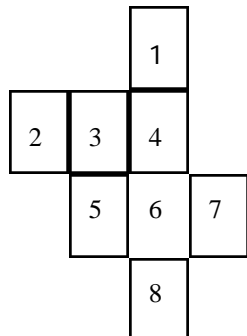
I am a geometric figure
A solid answer you can claim
I have a different face
For each letter in my name.

Who am I?

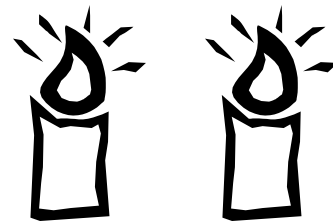
Eight numbers cards lie face down on a table in the relative positions shown in the diagram. Of the eight cards:

- Every Ace borders on a King
- Every King borders on a Queen
- Every Queen borders on a Jack
- No two cards of the same kind border on each other
- There are two Aces, two Kings, two Queens, and two Jacks

Which kind of card is card number six?



Two candles of equal length are lit and start burning at the same time. One of the candles will burn in 4 hours and the other in 5 hours. How long will they have to burn before one candle is 3 times the length of the other?



Assuming that the Earth is a sphere, at what latitude is the distance around the Earth half of what it is at the equator?



Call for Manuscripts, Problems, Activities, and More

MCTM is a membership organization and relies on the many efforts of all its members. As a member you are invited to contribute to the organization and to the development of your colleagues by sharing your successes in the classroom with the rest of the membership. We are asking that you seriously consider sharing your successes by submitting article manuscripts, mathematics lesson activities, challenging and interesting problems, book and materials reviews, and other items that would benefit the membership. We are interested in all grade bands and all topic areas. Also useful would be your best tips for beginning teachers and your favorite strategies for classroom management, encouragement of the reluctant learner, managing papers and assignments, effectively using cooperative learning, and incorporating literature and technology into mathematics lessons. As well as fully-developed activities and articles, we will welcome short tidbits that could be inserted into an inch of extra space on a page of the newsletter or grouped together with other members' ideas under a common theme. As we approach the end of the calendar year (and the middle of our school year) think creatively about how you might contribute and have the opportunity to see your name in print! Send your ideas electronically to the editor at tlgonske@nwc.edu.

Share your ideas

One of the big misapprehensions about mathematics that we perpetrate in our classrooms is that the teacher always seems to know the answer to any problem that is discussed. This gives students the idea that there is a book somewhere with all the right answers to all of the interesting questions, and that teachers know those answers. And if one could get hold of the book, one would have everything settled. That's so unlike the true nature of mathematics.

—Leon Henkin

Teaching Teachers, Teaching Students, Boston: Birkhäuser, 1981, p89
L.A. Steen and D.J. Albers (eds.)

Numbers written on restaurant bills within the confines of restaurants do not follow the same mathematical laws as numbers written on any other pieces of paper in any other parts of the Universe. This single statement took the scientific world by storm. It completely revolutionized it. So many mathematical conferences got held in such good restaurants that many of the finest minds of a generation died of obesity and heart failure and the science of math was put back by years.

—Douglas Adams (1952 - 2001)

Life, the Universe and Everything. New York: Harmony Books, 1982.

Mathematics Quotes

Solutions to Problems

1. 23 times. They pass each your until the last.
 2. The four numbers in order are: 8, 12, 5, and 20
 3. Think of the five line segments used to draw a five-pointed star. The pennies lie at the intersections of those lines.
 4. A dodecahedron
 5. Card number six is a King
 6. 40/11 hours
 7. 60 degrees N (or for all the penguins, 60 degrees S)
-

Insert **Feb 26, 2005 Future Teachers' Conference flyer**—Word doc—no page header

Insert **2005 MCTM Minnesota Spring Mathematics Conference Registration Form**—Word doc—no page header

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Mission Statement:

The MCTM is an organization of professionals dedicated to promoting the teaching and learning of meaningful mathematics for all students by supporting educators in their efforts to improve mathematics education.

**Mark Your Calendar
for 2005**

Feb 26	Future Teachers' Conference
Apr 6 – 9	NCTM Annual Meeting, Anaheim, California
Apr 28 – 30	MCTM Spring Conference, Duluth
May 2	PAEMST nomination deadline

**Do we have your
correct address?**

MCTM strives to provide membership with current information regarding mathematics education in the state of Minnesota. To accomplish this goal, we need an accurate, permanent address for each member. Is your correct address printed on the label of this issue of *Mathbits*? If not, please contact Executive Director Arnie Cutler at 612-626-8326 or cutler@tc.umn.edu or visit the MCTM web site (www.mctm.org) and go to the membership page to make your change. Student MCTM members and members in transition are especially encouraged to provide us with a permanent address. Thank you for helping us stay in touch!

**Check the mailing label
for your membership
renewal date.
Renew online at
www.mctm.org**

Please submit items for the February issue of *Mathbits* to tlgonske@nwc.edu by January 17, 2005. Email or call 651-631-5228 if you have questions. - Teresa Gonske, Editor

Minnesota's Future Teachers



Hold the Key to Tomorrow!

Coming February 26, 2005

**Minnesota Council of Teachers of Mathematics & Minnesota
Science Teachers Association**

Proudly Present:

**Minnesota's 2nd Annual
Future Teachers Conference**

Saturday, February 26, 2005

8am-5pm

Metro State University; St. Paul, MN

All potential teachers and new teachers are invited!

Selection of Events to Include:

Information sessions and workshops for new and potential K-14 teachers of all grade levels and subject areas

Exhibits featuring educational resources for new and potential teachers

Keynote speaker

Door Prizes

And more!

Registration Fee is \$25

Conference location, additional details, and registration application can be found on the following website in Fall 2004:

www.mnfutureteacher.org

2005 MCTM Minnesota Spring Mathematics Conference Registration Form

Quality Teaching: The Key to Understanding Mathematics

*Teaching Principle * Learning Principle *Standards
*Algebra *Number and Operations *Problem Solving *Reasoning

DECC, Duluth, MN • Friday-Saturday, April 29-30, 2005

Name _____

Mailing Address _____

City _____ State _____ Zip _____

If you are a new member OR if any of the following has changed, fill in the information requested below.

Home phone (include area code) (_____) _____ Work Phone (_____) _____

Fax (_____) _____ E-mail _____

School District Name _____ School Building _____

Circle one: teacher supervisor student retired other _____

Circle one: elementary jr. high/middle high school post secondary other _____

Spring Conference Registration Fees

Regular Friday & Saturday registration fee includes 3 meals. Regular Saturday only registration fee includes 1 meal.

NOTE: Registrations on-site or those postmarked or sent after April 8, 2005 will be charged a \$15 late fee.

	Fri.&Sat.	Sat. only	
MCTM Member	_____ \$140.00	_____ \$ 90.00	Special Meal Requests Meal Tickets for Speakers or Non-registered Guests: _____ tickets for Friday lunch @\$16.50 = _____ _____ tickets for Friday banquet @\$27.00 = _____ _____ tickets for Saturday lunch @\$16.50 = _____ _____ vegetarian meals preferred
Non-member	_____ \$165.00	_____ \$ 115.00	
Student Member	_____ \$ 70.00	_____ \$ 45.00	
Student non-member	_____ \$ 82.50	_____ \$ 57.50	
Speaker	Registration fee waived – select and pay for meals using the table at the right		

There is no Friday only registration.

MCTM Dues

Circle one: new renewal do not need to renew

Indicate membership category:

_____ One year regular \$25.00
_____ Two year regular \$40.00
_____ One year undergrad student \$12.50
_____ One year retired \$12.50

I do not wish to have directory info published

Individuals should make their own lodging arrangements

I am willing to be a president.

Amount Due & Method of Payment: ___credit card ___check ___ p.o. # _____ (copy attached)

Conference Registration/Meal Fee _____

Credit card number _____

Membership MCTM _____

Expiration date _____

Total Due _____

Type of card _____ Master Card _____ Visa

Signature if using credit card _____

Mail to: MCTM, P.O. Box 120418, New Brighton, MN 55112 or register online at www.mctm.org
For information about lodging and events in Duluth call 1.800.438.5884 or visit www.visitduluth.com