



Mathbits

Quality Mathematics for ALL Students: Making the Vision a Reality

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10 Great Reasons for MCTM Members to Attend

- The conference is in your own state.
- Support many of your colleagues who have worked hard to prepare fabulous sessions.
- Hear national speakers.
- Choose from more than 300 sessions, workshops, and learning opportunities at all grade levels and content strands.
- Take home materials and resources from sessions and exhibitors.
- Professionally grow in expanding your knowledge and skills.
- Network with educators who share your interests.
- Browse and shop the Exhibit Hall, pick up information, and enter a raffle.
- Get inspired and motivated to continue your teaching of high-quality mathematics with renewed energy.
- Enjoy your visit to Minneapolis.

Upcoming Events:

- NCTM Regional Conference Nov 2004
- MCTM elections

For registration visit <http://www.nctm.org/meetings/minneapolis/>

More regional conference highlights and opportunities on page 5.

Pondering by the President

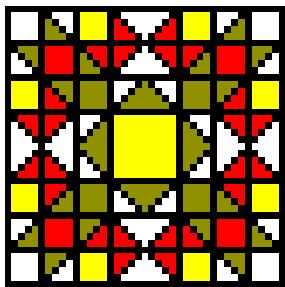
Sue Westegaard

I am hoping that each and every one of you had a WONDERFUL summer! Did you get a chance to “recharge your batteries” ... read a book for either pleasure or education, take a walk, spend time with family, spend time doing something you truly enjoy. I spent some time in July and August reading, quilting, and even just doing nothing. For those of you who know me, that is probably hard to believe. But it is true!

Quite a few years ago, my mother asked me to make her a quilt pattern for an eighteen-inch square. It was a rather easy nine-block pattern consisting of triangles and squares. I used a piece of quarter-inch graph paper and was able to easily enlarge the pattern for Mom. This task turned into a project for my Geometry class on scale factor; then it became an assignment on writing equations for line segments. Finally, it evolved into an article for the *Mathematics Teacher* with several activity pages.

Over the years, I have attended sessions at national and regional conventions on quilts and quilting activities. In San Antonio, I attended a session where we actually sewed, by hand, a small quilt based on the logarithmic spiral. This session led to Susan Moehling and I doing a session on this quilt in Duluth. We are also on the program for a mini-course at the NCTM Regional in November.

This summer I did quite a lot of quilting and started to notice that quilting and quilt blocks have many more mathematical connections that I originally thought about. Consider this block:



- Does it have rotational symmetry? Vertical line symmetry? Horizontal line symmetry?
- What is the minimum number of colors (or fabrics) needed?
- Is a figure translated?
- What fraction or percent of the block is “colored”?
- How many triangles do you see? How many squares?
- Consider the large square in the middle of the quilt block and the small square in the upper left corner. How many small squares will fit into a large square?
- If the area of the small square in the upper left corner is one cubic centimeter, what is the area of the entire block?
- Can you make this quilt block using pattern blocks?

This is only the beginning of what could be done. I have done some exploring on the Web for mathematics and quilts activities. Email me, and I will share the list of what I have found so far.

I bet you thought I was just sewing little pieces together. While I quilting, my mind was thinking about mathematics.

I hope you have had a good start to your school year.

Sue Westegaard
MCTM President

Minnesota Represents United States at ICME-10

The state of Minnesota was well represented at the 10th International Congress on Mathematics Education held in Copenhagen, Denmark, July 4-11. Travel grants from the National Science Foundation were awarded to 45 mathematics educators from a pool of over 600 applicants. Three Minnesota teachers received these awards, demonstrating the strength of mathematics education and the mathematics educators in Minnesota.

Mary B. Moreira, Patrick Henry High School, Minneapolis

Helene Perry, Clara Barton Open School, Minneapolis

Margaret Williams, Riverview Specialty School for Math, Brooklyn Park

More than 3,000 mathematics educators from approximately 100 countries attended the Congress. Attendees had the opportunity to hear world-renowned scholars in mathematics and mathematics education. They also took part in focused discussion groups on a variety of topics concerning current happenings in mathematics education. The participants will work together to prepare and disseminate the information about these topics to the mathematics education community in the United States. A complete list of attendees from the United States is available at www.nctm.org/icme10.

Minnesota MATHCOUNTS

There are 12 MATHCOUNTS chapters in Minnesota. Each chapter has a chapter coordinator who can provide more information about the program, dates and locations of competitions, and school coaching materials. Chapter competitions occur in February, state competition in March, and national competition in May. Register school teams by December 10, 2004. For information about the MATHCOUNTS program in Minnesota, contact: Katie Jamieson Email: kjamieson@mnspe.org 651-457-2347 Suite 206, 20 East Thompson Avenue St. Paul, MN 55118 or visit the Minnesota MATHCOUNTS website at <http://mnspe.org/mathcounts/>

Nominations for 2005 Presidential Award for Excellence

Nominations and applications for the 2005 Presidential Award for Excellence in Mathematics and Science Teaching (PAEMST) are now being accepted. Teachers in grades 7-12 are eligible and must be nominated. The nomination form is available on the PAEMST website at https://www.ehr.nsf.gov/pres_awards/

Please consider nominating an outstanding teacher for this prestigious honor. Contact Tom Muchlinski, the state program coordinator for mathematics at om.muchlinski@state.mn.us or 651-582-8859 if you have any questions. Applications must be completed by May 2, 2005, so early nominations will provide applicants with sufficient time to complete the process.

Even fairly good students, when they have obtained the solution of the problem and written down neatly the argument, shut their books and look for something else. Doing so, they miss an important and instructive phase of the work. ... A good teacher should understand and impress on his students the view that no problem whatever is completely exhausted.

One of the first and foremost duties of the teacher is not to give his students the impression that mathematical problems have little connection with each other, and no connection at all with anything else. We have a natural opportunity to investigate the connections of a problem when looking back at its solution.

George Polya

How to Solve It. Princeton: Princeton University Press. 1945.

Mathematics Education Leadership in Minnesota

Reminder about testing in 2005

The testing window for all MCAs in 2005 is April 25 through May 5. Send questions about BST and MCA tests to Rosemary.Heinitz@state.mn.us

**Report on
Spring 2004
Delegate
Assembly
Resolutions**

Resolution # 1: Be it resolved that MCTM make a contribution to the NCTM Mathematical Educational Trust.

Action Taken: This is tabled until the 2005 budget is created. At that time, a line item will be created to be donate \$100 to the NCTM Mathematical Educational Trust. (9/11/04)

Resolution # 2: Be it resolved that MCTM invite the governor, education commissioner, etc. to MCTM conferences and district meetings.

Action Taken: This is referred to the publicity committee who will provide a recommendation to the board. (9/11/04)

Resolution # 3: Be it resolved that the MCTM investigate incentives to encourage more students to pursue mathematics education, such as reduced rates for first year teachers for conferences and memberships.

Action Taken: This is not assigned a high priority for implementation. The +1/-1 committee is assisting new and future teachers. Students already receive a reduced rate for membership and MCTM conferences. (9/11/04)

Resolution # 4: Be it resolved that MCTM investigate ways of giving information for school districts looking for teachers and teachers looking for jobs.

Action Taken: This is not assigned a high priority for implementation. Actions that will be taken include a link on the MCTM website to MNASA (the Minnesota Association of School Administrators), and a message board at conferences where schools can post job openings. (9/11/04)

Resolution # 5: Be it resolved that MCTM expand the web site to include a) job information, b) family or community involvement, c) research links, d) forum for beginning teachers, and e) practice tests.

Action Taken: This is referred to the technology committee. Our web page will have links to MCA and BST tests. (9/11/04)

Resolution # 6: Be it resolved that MCTM permanently move the Delegate Assembly to the spring conference.

Action Taken: This is referred to the spring conference committee and the district directors. (9/11/04)

Resolution # 7: Be it resolved that MCTM encourage Minnesota colleges to promote MCTM conferences.

Action Taken: MCTM will continue to work with colleges and feels the present alliance has been successful. (9/11/04)

Resolution # 8: Be it resolved that MCTM take a stand on assessment (e.g., open-ended, cost funding, calculator use, length of exams, composition of exams, individual scores, and data feedback).

Action Taken: MCTM will be proactive in recruiting members for assessment panels. (9/11/04)

Resolution # 9: Be it resolved that MCTM propose that the implementation of NCLB should be suspended until federal funding matches expectations.

Action Taken: This is referred to the governmental relations committee. (9/11/04)

Opening and Closing Sessions

“Highly Qualified Teachers Teaching High Quality Mathematics to Every Student” Cathy Seeley, President, NCTM

What does it take for every one of your students to learn high quality mathematics? What does it take for you to be the best teacher possible? President Seeley's opening address focuses on what teachers' behaviors and qualifications it takes to make real access to quality mathematics a reality for every student. The Opening Session will begin with background information on NCTM's new Focus of the Year and give you information on how to get the most out of this exciting new opportunity at regional conferences and the Annual Meeting.

“Does the ‘A’ in ‘Quality ‘ Mathematics Stand for Algebra? Responding Positively to Parents, Teachers, and the Public”

James M. Rubillo, Exec. Director, NCTM

There is a great deal of discussion and confusion around the teaching of algebraic thinking throughout grades K–12. Algebraic thinking gets confused with Algebra 1. This session will present a wide variety of specific examples designed to help adults see that the learning of useful algebraic techniques can be a "gentle slope" for students, rather than a "steep wall" at Algebra 1.

Professional Development Focus of the Year

The NCTM Professional Development Focus of the Year for the 2004-05 school year is “Developing Algebraic Thinking: A Journey from Preschool to High School.” The Central Regional Conference in Minneapolis will be the pilot for the Learn↔Reflect Strand which will start with a kickoff session Friday, November 12, continue with selected sessions throughout the day dedicated to the “Developing Algebraic Thinking Theme” and end with a final reflection session. For more information on this new event and a list of the focus sessions see <http://www.nctm.org/meetings/minneapolis/attractions.htm>

A Reception for Beginning and Future Teachers of Mathematics

WELCOME TO THE PROFESSION!

You can do it, we can help!

WHAT: An informal gathering for mathematics teachers in their first few years and for pre-service mathematics teachers to help make your new teaching career a successful one.

WHY: We'll have teaching resources, ideas, inspiration, opportunities for networking, socializing, FREE soft drinks, FREE food and FREE stuff.

WHEN: Thursday, November 11, 2004 from 5:30-7:00 p.m. This session will begin right after the Keynote Address by NCTM President Cathy Seeley during the NCTM Regional Meeting.

WHERE: Room 101A at the Minneapolis Convention Center.

- Meet NCTM and MCTM leaders up close!
- Find out teaching applications of peacock feathers!
- Get suggestions about useful conference sessions to attend!
- Meet other teachers with similar interests!
- It'll be over early so you won't miss dinner!

Sponsored by the Minnesota Council of Teachers of Mathematics (MCTM)

Save Time! Use the Online Conference Planner

Explore and select from among more than 300 sessions, workshops, and minicourses by using the Online Conference Planner to electronically search by speaker name, topic, grade level, presentation type, day, and location. Save and print out your personal schedule. See <http://www.nctm.org/meetings/minneapolis/sessions.htm>

Regional Conference Highlights and Opportunities

*We are usually
convinced more easily by
reasons we have found
ourselves than by those
which have occurred to
others.*

*Blaise Pascal
Pensees, 1670*

Professional Development Opportunities

If you have information about professional development opportunities, please submit announcements for the next issue of Mathbits.

MET (Mathematics Education Trust) Opportunities

The Mathematics Education Trust has been established by the National Council of Teachers of Mathematics to support the improvement of teaching and learning mathematics through awards, grants, and other projects. The focus is on channeling generously contributed funds into classroom-based efforts benefiting all students. More than a dozen different grants and awards involving teachers of all grade levels, future teachers, and teachers who have given distinguished service are available. Two main categories of funding include improvement of classroom practice and increasing teachers' mathematical knowledge. Some of the opportunities are open to the public and others are available exclusively to NCTM members.

Applications for most of the 2005-2006 grants and scholarships must be submitted by December 3, 2004. To find out more information about the MET grants and awards along with application procedures visit <http://www.nctm.org/about/met/>

The 2005-2006 FLAMeS (Future Leaders Annual Meeting Support) Awards will provide funding (up to \$1200) to attend the NCTM annual meeting in Anaheim, California for K-12 classroom teachers who have been teaching from three to ten years, are NCTM members, and have never attended an NCTM annual meeting.

The 2005-2006 CAPE (Conference Attendance for Prospective Educators) Awards will provide funding (up to \$1200) for full-time undergraduate or graduate students to attend an NCTM national or regional meeting. Visit the NCTM website for further details.

22nd Minnesota Math Mobilization Workshop

The 22nd Minnesota Math Mobilization Workshop will be Monday, November 1, 2004 from 4:15 to 7:00 at the Peter Engel Science Center at St. Johns University. There will be a K - 4 session, presented by Joyce Bauman, topic to be announced. The 5 - 8 speaker will be Roozbeh Vakil. The 9 - 12 workshop will prepare materials designed to use the history of mathematics as a tool for the teaching of math. Registration and refreshments start at 4:15. The 3 sessions run concurrently from 4:45 to 6:15, followed by dinner. Additional information is posted at <http://www.csbsju.edu/math> or Liola Dold (ladold@csbsju.edu).

Eye to the Future Career Conference is for 4-8th grade Girls

Opportunities for Students

The Eye to the Future Career Conference is for 4-8th grade girls who are interested in exploring careers in mathematics, science and technology. This year's conference will be on Saturday, November 13, 2004, from 8:00 a.m.-12:45 p.m. at Augsburg College, Minneapolis, MN. Dr. Kristi Curry Rogers, Director of Paleontology for the Science Museum of Minnesota will keynote the event with a special presentation on dinosaur discoveries. Girls will get to "try on" 2 of 16 different hands on activities presented by professional women in mathematics, science, engineering and technology fields. Separate adult sessions are available on ways to encourage young women in science and mathematics study. Conference registration for students and accompanying adults is \$8.00/each. This fee includes workshops, workshop packet, a conference t-shirt, registration for various prizes, and a small snack. Registration scholarships are available for both adults and girls. Call (612) 330-1253 for registration information and leave your name, a phone number, mailing address and the number of brochures requested.

The Mathematical Association of America, with the cooperation of the National Council of Teachers of Mathematics and the financial support of the National Science Foundation, announces the launching of a new online magazine and resource in the history of mathematics and its use in teaching, entitled ***Convergence: Where Mathematics, History and Teaching Interact***. The target audience is teachers of grades 9-14 mathematics including secondary teachers, two- or four-year college teachers, or college teachers preparing secondary teachers. The magazine includes articles dealing with the history of various topics in the curriculum, classroom suggestions designed for immediate use, historical problems, a “what happened today in history” feature giving mathematical events that happened on that date in history, interesting mathematical quotations changing daily, reviews of books and teaching materials, and a calendar of upcoming meetings and other events in the history of mathematics and its use in teaching. To visit the magazine, point your browser to <http://convergence.mathdl.org>. For more information, or to contribute, write to the editors: Victor J. Katz: vkatz@udc.edu; Frank J. Swetz: fjs2@psu.edu.

The Mathematics Educator (TME) is a student-produced journal published semiannually by the Mathematics Education Student Association (MESA) at the University of Georgia. *TME* provides a forum for the collaboration of mathematics educators at varying levels of professional experience. Its purpose is to promote an interchange of ideas within the mathematics education community, locally, nationally, and internationally. *TME* invites submissions from all members of the mathematics education community and is available online at <http://jwilson.coe.uga.edu/DEPT/TME/TMEOnline.html>

The Montana Council of Teachers of Mathematics shares their e-journal ***The Montana Mathematics Enthusiast***. The second issue, with the theme of contemporary and historical topics in geometry, has just been released. The journal can be accessed at <http://www.montanamath.org/TMME/>

Math Tools is a project of The Math Forum @ Drexel, funded in part by the National Science Foundation. Its goal is to create a community digital library that supports the use and development of software for mathematics education. The project has a rich resource center of tools, activities, stories, lesson plans, and problems for all levels from pre-K on. Tools and resources are searchable by math topic, level, and technology type. There are also numerous discussion threads regarding the implementation of technology in mathematics education. One of the newer features at *Math Tools* is the Technology PoW (Problem of the Week). *Math Tools* can be accessed at <http://mathforum.org/mathtools/>

Excuses for not doing homework:

- *I accidentally divided by zero and my paper burst into flames.*
 - *I could only get arbitrarily close to my textbook. I couldn't actually reach it.*
 - *I have the proof, but there isn't room to write it in this margin.*
 - *I was watching the World Series and got tied up trying to prove that it converged.*
 - *I have a solar powered calculator and it was cloudy.*
 - *I couldn't figure out whether i am the square of negative one or i is the square root of negative one.*
 - *I took time out to snack on a doughnut and a cup of coffee. I spent the rest of the night trying to figure which one to dunk.*
-

Resources for Math Educators

Do you have a favorite resource that you would like to share with the MCTM membership? Email editor with your contribution.

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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 2004-2005**

Nov. 11 – 13 NCTM Regional Conference, Minneapolis Convention Center
December MCTM Elections—remember to return ballots sent in next issue.
Apr. 6 – 9 NCTM Annual Meeting, Anaheim, California
Apr 28 – 30 MCTM Spring Conference, Duluth

**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 next issue of *Mathbits* to tlgonske@nwc.edu by November 8, 2004. Thank You. You may also call 651-631-5228 if you have questions. - Teresa Gonske, Editor
