

MONTANA MATHEMATICS

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MCTM 7-12 Math Contest

One of the many opportunities that MCTM provides across the state of Montana is to offer math contest for *all* 7-12 students. The goal of the MCTM Math Contest is to have every participating student feel a level of success. The MCTM Math Contest is held at seven sites across the state the last week in February or during the month of March. Last year, almost 5000 students participated.

Students compete at their own mathematical level. However, students who excel at math always have the option of testing at a higher level. Each level of students competes in three individual tests. Sites also have the option of offering a team test. The top 15% of students earn a superior rating. The next 20% of students receive an honorable mention rating. Each student receives a certificate. Each site awards a \$200 scholarship to the top female and top male senior competitor.

State awards of superior and honorable mention are also given. At the state level, the top male and female scorer receives a \$500 scholarship.

The MCTM Math Contest is a wonderful opportunity for students. It also provides teachers from each region an opportunity to discuss their school mathematics program and share concerns and successes.

The math contest is successful due to the work of the site directors and their support teams. All do a phenomenal job of coordinating and ensuring their contests runs smoothly.

More information is available at www.montanamath.org or by contacting your regions' site director: Billings: Jennifer Brackney; Missoula: Chip Rinehart; Glasgow: Marie Mavencamp; Havre: Mary Wagner; Sidney: Yvonne Gebhardt; Forsyth: Jessie Collins; Grass Range: Sherry Horyna; Great Falls: Satinee Lightbourne

Directors for the *Butte, Kalispell* and *Bozeman* sites are needed. *Directors are needed to get a jump start on the 2009 contest!!!!* So.....grab a few of your friends and colleagues and contact Linda Horst. Being a site director is a great resume builder, plus, it's been said that volunteering is good for the soul!

Conducting a regional contest is not meant to be a one-man job. The contest director's real commitment is to be a coordinator for their support team. A team of 3-5 people can each take a task and develop a well-run contest. Experienced directors will tell you that a good team makes this a fun and worthwhile commitment.

Technology has simplified the task of director exponentially. In order to increase the efficiency for site directors, many changes have been implemented in the last five years. These include:

1. On-line registration
2. Scripts to schedule students into rooms
3. Automated data entry.
4. Revised handbook with step-by-step instructions

Assistance is available for all facets of the contest including technology. **Don't let lack of experience keep you from volunteering.**

Contact Linda Horst, immediately, at 406.651.8503 or horstl@billings.k12.mt.us to learn more about this amazing opportunity!!!!

REGIONAL DIRECTORS
NEEDED!
BUTTE, KALISPELL, BOZEMAN

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President's Message

Hello! I hope your holiday break allowed you time to relax and enjoy your families. I traveled to Great Falls to visit my husband's family and then to Helena to visit my family. It was wonderful to see all the people I love during that time. I returned home and unloaded so many boxes that they filled my living room. I spent two days just unpacking the gifts my children had received. We were truly blessed with family and gifts.



The Presidential Award for Excellence in Mathematics and Science Teaching (PAEMST) nomination forms are now available. Please nominate an outstanding K-8 mathematics or science teacher for this award. This year any math or science teacher at the middle school level that is elementary certified qualifies to apply. The nomination form and application can be found at <http://www.mea-mft.org/paemst.htm>. The Montana Association of Presidential Awardees (MAPA) has developed a new mentoring program for the application process. Each nominee will be paired with past PAEMST awardees. This mentor will be in contact with the applicant through the entire process. You will not be alone!

I really need to plead with our members. We no longer have a MCTM Contest Site director for *Kallispell, Butte or Bozeman*. We have been beating the bushes to try and find replacement people to no avail. It would be terrible if this opportunity was no longer available to students in Montana in these regions. We have worked so hard to offer this to our students that it really shouldn't go away. **WE NEED YOU TO HELP US AND THE STUDENTS WE SERVE!!** You will have outstanding support and guidance through the process of managing the contest in your region. **PLEASE, PLEASE CONTACT LINDA HORST (horstl@billings.k12.mt.us) AND TELL HER YOU ARE WILLING TO TAKE ON THIS IMPORTANT RESPONSIBILITY.**

Be sure to read *The Montana Mathematics Enthusiast* (TMME). The current issue for January is out. The articles are written from mathematicians all over the world. Bharath Sriraman has done an outstanding job of designing, editing and creating a world class mathematics on-line journal. See it at www.montanamath.org.

I know summer schedules are filling up. Please make the Professional Development Academies (PDA) part of your plans. Grades 7-12 will be at the Montana Learning Center in Helena learning calculator technology and Grades K-6 will be in Billings learning Problem Based Approach to Learning and Teaching. There are teacher scholarships available to attend and for the first time ever we have a new teacher scholarship for attending. Please check it all out on the MCTM website at www.montanamath.org.

MCTM is now offering a very cool line of apparel. You can order shirts and fleece vests with the MCTM logo for a reasonable price. Again, check it out on our website – or visit page 11 of this newsletter.

~Lisa Scott, MCTM President

Victor Scott –
Christmas 2007



Kari
Stringfield–
Christmas
2007

Lesson Plans

Complete lesson plans are available at www.montanamath.org

K-6

I'm Beading: Northern Cheyenne Bead Work

Created by: Jessica Cox
jessicac@lolo.k12.mt.us
 Grade 4

In this lesson, students connect complex patterns to Northern Cheyenne moccasin beading and see real-world relationships between patterning in class and beaded artwork.

Middle School

Making a Star Quilt

Created by Erin Glennie
eglennie@nemontel.net
 Grade 7-8

Students will use geometric ideas such as parallel and perpendicular lines, parallelograms, symmetry and supplementary angles to create a star quilt.

High School

Beading Project

Created by: Linda Engebretson
 Email: enge@mtintouch.net
 Grade 10

In this lesson, students will use beading patterns to identify lines of symmetry and reflect coordinates through the x-axis or y-axis.

MCTM Membership Form

New Member Renewal
 Elementary MS HS
 College Other

Name _____

Address _____

Phone Number: _____

Email: _____

Annual Dues (September- August)

<input type="checkbox"/> Regular (1 yr)	\$15
<input type="checkbox"/> Regular (2 yrs)	\$25
<input type="checkbox"/> Regular (10 yrs)	\$100
<input type="checkbox"/> Life Time	\$150
<input type="checkbox"/> Student	\$8
<input type="checkbox"/> Retired Educator	FREE
<input type="checkbox"/> MCTM & MSTA	\$30
<input type="checkbox"/> Contribution to Scholarship	Fund \$5 to \$ 8

Send Form with correct amount to:

Pam Koterba, MCTM Membership Chair
 101 Turquoise Drive
 Lewistown, MT 59457
pkoterba@winifred.k12.mt.us



Aunt Sally

Dear Aunt Sally,
What is the secret of life?
Signed,
Grasshopper

*Dear Grasshopper,
There are two secrets to life. The first one is
to never tell anyone everything you know.
Signed,
Your Dear Aunt Sally*

Dear Aunt Sally,
Why is a second degree equation called a
"Quadratic Equation" and a fourth degree
equation is called a "Quartic Equation"?
Doesn't "Quad" generally mean four?
Signed,
Poly Nomial

*Dear Poly,
"Quadratus" is Latin for "square" and the
highest degree term in a second degree
equation (in one variable) is to the second
power (or squared).
Signed,
Your Dear Aunt Sally*

Dear Aunt Sally,
My students get confused because I use the
phrase "cross multiply" when we are solving
proportions and then they want to "cross
multiply" when we are multiplying fractions.
How do I clear up the confusion?
Signed,
Chris Cross

*Dear Chris,
Your students may not get confused you if
you used the phrase "find the cross
products" when you are solving proportions,
instead of "cross multiply". I have had
students in the past tell me the same thing
so I changed the wording that I used when
we solve proportions. I learn a lot from my
students.
Signed,
Your Dear Aunt Sally*

Did you know that the history of the first 29 years of the
MCTM can be found at:
<http://montanamath.org/history.html> ?

Dear Aunt Sally,
I heard that MCTM offers math contests at
several sites around the state for any 7th-12th
grade students.
Signed,
Matt Wiz

*Dear Matt,
MCTM does offer math contests at several
sites around the state and more than 5000
students participate every year. You can find
more information at:
<http://www.montanamath.org/contest.html>
Signed,
Your Dear Aunt Sally*

You can ask questions by emailing Aunt
Sally at: auntsally@bresnan.net. Check out
her website at
www.montanamath.org/auntsally/.

Jokes & Quotes by charlie

**"During a person's lifetime there are only a
couple of opportunities that come your way. If
you possess the courage and self-confidence to
grasp them, they can change your life."
Winning Every Day, Lou Holtz p. 127**

**If there is a 50/50 chance of something going
wrong then nine of ten times it will. –
Paul Harvey**

**A mathematician was weed-eating her yard and
accidentally cut off the tail of her cat who was
hiding in the grass. She rushed her cat along with
the tail over to Walmart!
Why Walmart?
Walmart is the largest retailer in the world!**

**Women and cats will do as they please, and men
and dogs
should relax and get used to the idea.**

**If you have a joke or quote to share, please email
them to deisher6@midrivers.com.**

Deadline for March Newsletter is

March 10, 2008

e-mail articles to
greenleya@billings.k12.mt.us

NCTM Representative Report

Welcome again to the NCTM report. The last two times I have given information how to join NCTM and the benefits, whether it is an e-membership or a full membership. Hopefully, you have given membership some serious thought. There are expenses, but this is our organization. The rewards are many compared to the cost. Each year NCTM is adding new benefits for its members.

I would like to encourage everyone, member or not, to attend the NCTM Annual Meeting in Salt Lake City April 9-12. The cost to attend for a member is less than the cost for a non-member, so I hope that everybody joins. Over the past 20 years I have attended many conferences. You literally meet people from all over the world, re-new old friendships from fellow Montanans plus you will hear about cutting edge math procedures and research.

The name of the conference this year is "Becoming Certain about Uncertainty". Personally, because of my love of probability and statistics, I am really looking forward to this one. There will be different kinds of sectionals ranging from the traditional one hour types we see at our fall conference, plus research sessions (60 min) and gallery sections (90 min). The gallery sessions are set up with round tables for hands on work and additional seating around the perimeter of the room. The gallery participants will receive all the print materials and will observe the workshop in a fashion similar to a classroom observer.

The closing event will include an address by Billy Mills, Olympic Gold medalist in the 10K at Mexico City, 1968. I am old enough to remember watching him win, it brings goose bumps yet. Mr. Mills was the feature of a movie entitled "Running Brave". If I am not mistaken, he was at one point a resident of Wolf Point MT. Being an old runner, I view this as a must see sectional.

To register for this conference 1) go to nctm.org 2) click on conferences 3) annual meeting (on the left column) and then 4) registration fees. If you are interested in attending and need a hotel, go to nctm.org/annual. Then follow the leads and you can get an overview of the recommended hotels. Naturally, the prices will have a range.

There are some great math lessons, applets, and teaching ideas that are online at the NCTM Illuminations website:

<http://illuminations.nctm.org>.

Another website is available if you want to contact your national US legislators. Click on this website, enter your zip code and you can send an email to our Senators and Congressman - <http://capwiz.com/nctm/home/>

Another interesting site is for prospective teachers

<http://www.nctm.org/teachmath/>

I always wonder where NCTM stands on issues that are hot topics (mainly because I tend to waffle some and would like some info to back up what I think is right).

http://www.nctm.org/about/position_statements/

Thanks for reading this column, and I'll hopefully see you at the NCTM Conference in Salt Lake City in April.

Jim Hamling

Check out these great websites!!

Enriching Mathematics: This website provides games and activities ranging from counting at the Pre-K level to Calculus. <http://nrich.maths.org/public/leg.php>

BBC Education: This website provides games and print off activities for the following strands: Numbers, Data Handling, Shape Space and Measure, and Algebra. Within each game, you can also choose the level of activity. <http://www.bbc.co.uk/education/mathsfiler/gameswheel.html>

Nick's Mathematical Puzzles: Welcome to a selection of mathematical puzzles. The site aims to add one new puzzle each week, so stop by frequently. The math puzzles presented here are selected for the deceptive simplicity of their statement, or the elegance of their solution. They range over geometry, probability, number theory, algebra, calculus, trigonometry, and logic. All require a certain ingenuity, but usually only pre-college math. Some puzzles are original. <http://www.qbyte.org/puzzles/>

If you have a favorite website you'd like to share, please e-mail it to Angel Greenley at greenleya@billings.k12.mt.us

Student Purpose in Mathematics

Submitted by Dr. Marlow Ediger

A very important factor in student learning is perceived purpose. Students then need to understand reasons for pursuing what is being taught. If they believe that what is being studied is busy work or unimportant, learner achievement will tend to go downhill. It behooves the mathematics teacher to assist students to realize that lessons and units of study have purpose. Establishing purpose for each lesson may not take long. The teacher may state the purpose clearly to primary grade pupils, such as, "The reason for studying subtraction is that you will want to know how much of allowance money is left if certain items are bought." Language used here must be developmentally appropriate and the example being used is relevant. The example can be clearly demonstrated with coins or other concrete objects. It becomes increasingly difficult to develop purpose within older students with the goal being to ascertain the area of a circle, for example, and why the computation is used in the teacher devised demonstration. Concrete and semi-concrete materials should be used for meaningful learning. Purpose in learning here is indicated by looking at illustrations of circular drives and circular windows in buildings. The circles here take up space and the area must be ascertained to secure correct window size as well as materials necessary for completing a circular drive.

Purposeful Experiences

Purposeful experiences emphasize what is relevant to the involved learner. Relevancy means that subject matter in mathematics is useful in school and in society. Thus, for example, counting experiences for young children may stress the following purposeful activities:

- * counting the number of children who want milk today in the school milk program
- * counting the raised hands for those wanting menu one, two, or three in school lunches at noon
- * counting the number of children seated in each row in the classroom
- * counting the number of plates, plastic utensils, and cups for four children in a role playing activity seated at the kitchen center

Creative teachers use every day lifelike experiences to involve children in mathematical activities. These experiences are seized upon as the necessary situation arises. With practical uses for counting, the child's growth in enumeration provides situations for sequential growth. It also makes children more aware of

relevant uses in mathematics. They love to count objects intrinsically when opportunities arise. Each experience provides occasions for increasingly more complex uses of number. Thus, seeing the abstract numeral for each ordered set of objects might well bring in addition as in joining two sets together to make for one set, 3 plus 2 equals 5, or subtraction with $5-2=3$ as well as $5-3=2$. The commutative property for addition is learned as well as subtraction undoing addition. Perceiving purpose in number relationships is highly important. With quality sequence, the learner is able to perceive purpose in increasingly complex uses of number in mathematics (Ediger, 2006).

Interest Factors and Relevancy

Interest is a powerful ingredient in achievement. With developed interest, the student is able to hurdle more complex learnings. If interest is not there to begin instruction in a new process, the teacher must develop it within learners. There are several ways of doing this, such as

- * varying the kinds of materials used involving concrete (using objects and items), semi-concrete (illustrations, drawings, graphic items, pictorial representations, and diverse charts), and abstract materials as in (mathematical symbols, numerals, as well as textbook content).

- * varying the methodologies used in instruction (using implicit, explicit, guided practice, learning by discovery, authentic learning, and demonstrations).

The human voice is a powerful means of expressing facts, concepts, and generalizations in mathematics. It can be modulated to engage students in learning. Words may be pitched higher or lower, as well as varied pauses between words and sentences might well be used for effective teaching. Stress of words may also be varied for improved communication. Thus, stressing a word more than others might help students to realize what is salient in a given learning experience.

Mediated action provides a learner with relevant tools of instruction. Thus, the teacher assists students to use cultural tools such as a compass, protractor, ruler, number line, and technology, among others, to find solutions to problems. Interactive means of learning, here, are important (Wertsch, 1998).

Continued on page 7

Student Purpose in Mathematics (cont.)

Students grow more proficient in learning as they use what has been initially acquired. Adult assistance is needed in mediation between the learner and the cultural tool.

Vygotsky (1934/78), believed strongly that ideas are mediated within a group. As subject matter is discussed and analyzed, it is synthesized and becomes more meaningful through interaction with others. There are diverse procedures involved in arranging a discussion as in understanding a new process in mathematics. Dyads, committees, small groups, and the class as a whole, for example, might then discuss finding the volume of a cylinder by using what has been learned previously. The background information acquired previously will then be used to ascertain volume in a purposeful activity. With interaction between and among learners occurs, modification of ideas occurs with critical and creative thinking in a problem solving situation. Mediation is a salient concept in these interactions.

Quality oral communication skills assist in presenting ideas clearly. They are developed sequentially in group settings. In an atmosphere of respect, students feel free to present needed ideas. Communication skills in securing ideas may also come from abstract, written materials in print. Thus, reading of mathematical content becomes important. In a specific reading experience from the basal textbook, the teacher may determine the purpose, after readiness has been established, in saying "Lets read to find out how to determine the area of a right triangle." Or, "Lets read to determine the meaning of a rhombus." It is good if students raise a question and then reading is done to secure an answer. The purpose then is student centered. The latter approach increases student perceived purpose (Ediger and Rao, 2007).

References

- Ediger, Marlow (2005), "Teaching Mathematics in the High Setting," *College Student Journal*, 39 (4), 711- 715.
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- Ediger, Marlow, and d. Bhaskara Rao (2007), *Reading Curriculum and Instruction*. New Delhi, India: Discovery Publishing House, Chapter Six.

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The Development of Psychological Processes. Cambridge, Massachusetts: Harvard University Press.

Wertch, J. V. (1998), *Mind as Action*. New York: Oxford University Press.

MCTM Board News

The MCTM board met on January 31st in Bozeman. We currently have 654 members; 140 of the members were registered for the annual NCTM Conference give-away. The winner of the contest was Susie Bollinger from Hardin.

The STARs (Student Teacher Assessment Resources) committee has been hard at work refining the STARs materials with the hope of getting the materials published and sold as an MCTM publication.

OPI is continuing the search for a math specialist. Anyone interested in this position should contact Linda Peterson at OPI. Also, the standards revision process will be starting soon. MCTM will be in charge of recruiting teachers to help with this project. Anyone interested in this project should contact their regional MCTM representative.

MCTM is also considering supporting the following projects: Math Coach Retreat (contact Angel Greenley at greenleya@billings.k12.mt.us if interested),

Pre-service/New Teacher Retreat (contact Lisa Wood at woodl@billings.k12.mt.us if interested)

Also a T.I. 'Nspire workshop is being pursued as well. (contact Terri Dahl at terri_dahl@gfps.k12.mt.us if interested).

If you want more details on any of the information above, visit www.montanamath.org to view the complete minutes.

Comments, questions or concerns, are always welcome – contact your regional representative via e-mail. The information is on the back of this newsletter.

Submitted by Angel Greenley, Secretary



Professional Development Academy
 Sponsored by
 Montana Council of Teachers of Mathematics



A Problem-Based Approach to Teaching and Learning

Presenter: Kathy Hill, 3rd-8th grade Mathematics teacher,
 Bissell School, Whitefish, Montana

Designed to enhance K-6 Math Education

July 14-17, 2008 at Lincoln Center, Billings, MT

Monday – Wednesday 8a.m. to 4 p.m.; Thursday 8a.m. until noon

“Most, if not all important mathematics concepts and procedures can best be taught through problem solving.” John A. Van de Walle

This workshop is designed to explore problem solving as an approach to teaching mathematics. Participants will experience sample tasks and design/adapt tasks for use in their own classrooms. They will learn a lesson format that includes discussion techniques and addresses student communication. Assessment will be examined as well as using problem solving to meet the needs of a differentiated classroom.

NOTE: Please bring your current textbook or curriculum.

The \$325 registration fee includes:

- A 1-year MCTM membership or a 1-year MCTM membership renewal
- Three and one-half days of quality in-service
- 30 Renewal Units through OPI or 2 semester credits (P/F) through MSU-Bozeman (Estimated tuition cost is an additional \$220)
- Bring your current textbook or curriculum

Registration is due by **May 25, 2008** with your **non-refundable** \$100 deposit made payable to **MCTM**. The balance must be paid by check or PO before beginning the workshop.

Return or email your registration:

Linda Horst
 2221 Lyndale Lane OR Email: horstl@billings.k12.mt.us
 Billings, MT 59102

Scholarship applications are available at www.montanamath.org.

.....

Name _____ Grade Level _____

School District _____ School _____

School Address _____ Phone _____

Home Address _____ Phone _____

Email _____ Summer email _____

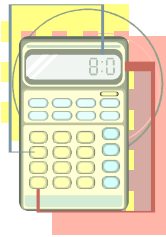
Deposit: Date _____
Check or PO # _____
Balance Paid Date: _____
Check or PO # _____

Professional Development Academy
 Sponsored by Montana Council of Teachers of Mathematics

Update - Invigorate – Integrate
Using the Calculator to Enhance Student Learning

Designed to enhance 7–12 Math Education

July 21-24, 2008 at Montana Learning Center, Canyon Ferry, Helena, MT
 Monday – Wednesday 8a.m. to 4 p.m.; Thursday 8a.m. until noon



This workshop will ALSO be offered in Billings, July 20-23, 2009

Whether you are new to the classroom or thinking forward to retirement days, this workshop promises to be challenging and invigorating. Exploration of cutting-edge developments and the interface of technology and student learning will be the focus of the three and a half day workshop. Join Todd Morstein, Texas Instrument certified instructor, in exploring these latest developments and a variety of lessons developed by Texas Instruments; he will share activities and calculator integration tips from Pre-Algebra through Calculus. While the workshop will focus on the use of TI 84's in the classroom and will introduce you to the new Inspire technology, feel free to bring the calculator your students are most apt to use. If you have questions, Todd can provide assistance with all TI equipment. Also, if you have a favorite activity, please bring it along. Sharing ideas and activities in the evening, as the Mountain Bluebirds tend their hatchlings and the Osprey's fish the lake, is always a great finish to each day. Tennis and basketball courts, hiking, and boating are also available for you evening entertainment.

Updates regarding the workshop and **scholarship applications** will be available in upcoming MCTM newsletters or at the MCTM website: <http://www.montanamath.org>.

The \$585 registration fee includes:

- A 1-year MCTM membership or a 1-year MCTM membership renewal
- Meals and lodging at Montana Learning Center
 (Individuals who do **not** plan to stay at MLC can deduct \$150 for lodging.)

Also offered:

- 30 OPI Renewal Units
OR
- 2 semester credits (P/F) through MSU-Bozeman (Estimated tuition cost is an additional \$220)

Registration is due by **May 25, 2008** with your **non-refundable** \$100 deposit made payable to **MCTM**. The balance must be paid by check or PO before the workshop.

Return or email your registration:

Linda Horst
 2221 Lyndale Lane OR Email: horstl@billings.k12.mt.us
 Billings, MT 59102

Name _____ Grade Level _____

School District _____ School _____

School Address _____ Phone _____

Home Address _____ Phone _____

Email _____ (Updates thru the year and summer.)

Deposit: Date _____ Check or PO # _____ Balance Paid Date: _____ Check or PO # _____

**Nominations Sought for the 2008
Dean Preble Memorial
Award for an Outstanding Teacher
of Mathematics**

The Dean Preble Memorial is awarded annually to a Montana educator who has made significant contributions to the teaching and learning of mathematics, and who has consistently assumed a leadership role among math educators. Teacher-leaders at all levels, kindergarten through university, are eligible.

The Award

This award is given in memory of our colleague Dean Preble, who passed away from cancer in the fall of 1998. Dean was recognized for his unflinching support for mathematics education in the state of Montana. His dedication to the mathematics teaching profession, his love of his students, his involvement in state and national mathematics organizations, and his devotion to the improvement of mathematics education for all were unparalleled.

One of Dean's wishes was to establish an annual award to recognize outstanding teachers and leaders of mathematics in Montana. In keeping with his wish, MCTM created the Dean Preble Memorial Award. The award consists of an inscribed plaque, a \$300 stipend, and a lifetime membership in MCTM. The award is presented at the MCTM annual meeting in October.

Award Criteria

- Any member of MCTM may submit a nomination. Current members of the MCTM Board of Directors may not be nominated for this award.
- The nominee must be a current MCTM member.
- The nominee must have taught mathematics in Montana.
- The nominee must have a record of significant and consistent contributions to the teaching and learning of mathematics.
- The nominee must have a substantial record of participation and leadership in professional activities involving mathematics education.

Nomination Procedure

Nominations should consist of a maximum of two, double-spaced, typewritten pages and should directly address the criteria outlined above. The name, address, telephone number, and present position of both the nominee and the nominator must be included.

Deadline for submissions for the Dean Preble Memorial Award is June 15 annually. Nominations may be sent or e-mailed to:

Cliff Bara
PO Box 610
Troy - MT - 59935-0610
cliffbara@hotmail.com



Leadership Conference

While listening to Mike Jetty at the Math/ Science Leadership conference on Indian Education for All, I kept thinking to myself.....how am I going to do this? Mike provided us with the Essential Understandings of Montana Indians, and we sat in groups and brainstormed how to include these ideas into our math classrooms. Frankly, we struggled. How are we going to add this into an already jam-packed curriculum? Where are the natural fits?

Unfortunately, I don't have any answers for you or myself. I did, however, learn a lot about our own Montana tribes that I didn't know before. My main realization was that in order for me to incorporate Indian Education for All into my classroom I need to learn more. As I look for professional development classes, I need to attend sectionals and classes that offer Montana Indian history.

I thought about the test I wrote last week for one of my math classes. I carefully wrote a word problem using my current students' names and a local landmark. Like many of you, I do this because giving students familiar context helps bring the application of the math concept into their lives. While adding traditional Indian names, events, foods, customs into my examples and assessments is not truly getting at the intent of Indian Education for All, it is where I can start.

For mathematics teachers, I believe that the key for us will be to work cross-curricular. Trying to make this fit into our classrooms daily will not be natural at first because our curriculums haven't looked for this connection. We do, however, need to try. It is for the benefit of all students – especially for those who Indian background and culture has been largely ignored.

Submitted by Jenny Combs
Recipient of MCTM Teacher Scholarship



Lisa Scott modeling an MCTM vest - more pictures are available on the website.

MCTM Clothing Order Form

Item	Quantity	Color	Size	Cost

Shipping:
1-item.....\$4.00
2* items: Please add
\$1/each additional item

Total Order	
--------------------	--

VESTS: Men's Sizing: S, M, L, XL..... \$33.00
2XL.....\$35.00
3XL.....\$40.00

Colors: Red, Royal Blue, Navy

SHIRTS: Men's Sizing

Short Sleeved (100% polyester).....\$30
Long Sleeved (60/40 Poly/Cotton).....\$33

Colors: Black, White, Grey or Red

Please include a check with your order payable to MCTM.

Orders will be processed on the following dates: Nov. 15th, Feb. 15th, and Aug. 15th so please send them prior to those dates to:
Deanna Reynolds
1209 3rd Ave. South
Glasgow, MT 59230

Orders cannot be processed without payment.

Ship to:
Name _____
Address _____
City, State, Zip _____

Go to <http://mea-mft.net> to apply to present a workshop in Missoula October 16-17,2008

***Mathematics Education:
From Words to Action***

***Taking it to the next level
For our students, our communities, and ourselves***

Call For Presenters

We need workshop presenters! A wonderful variety of excellent workshops, presented by math educators for math educators, is what makes the MEA-MFT and MCTM conference the best.

Words to Action in Research and Pedagogy: spreading the word on research based instruction and applying what we've learned to create more effective programs and lessons. Interpreting and using research results to promote math education and our own programs. Learning from each other's successes; collaborating with universities, organizations, foundations, etc.; assessment; using research and results to get grants and funding for programs.

Words to Action in Teaching: making lessons more than words - making them active, hands-on, minds-on, memorable, fun, effective, and relevant to students. Getting students from words to actions - creating mathematically responsible citizenry through learning experiences - what is working? Action projects for students.

Words to Action in Diversity: Reaching ALL populations, ALL students. How do we get there from here? Focusing more on a plan for what is next, not just a critique of what has been. Action plans and practical solutions for reaching diverse audiences (race/ethnicity, religion, physical and mental ability, socio-economic strata, urban and rural, etc), and creating a more diverse group of educators.

Words to Action in Math Standards: Most programs and lessons state they are "aligned with standards" today. *Examples* of great lessons to help achieve mastery of Montana math standards; *Information* on math topics to help us teach more effectively; *Doing* real research and long-term studies with students; *Incorporating* the standards into lessons.

Words to Action in the Classroom: Using math to teach standards and improve achievement across the curriculum, creating buy-in from administrators, parents and school boards. Ways to follow up mathematical experiences in the classroom and take the lessons home. Incorporating technology and math education; teaching across the curriculum; using math as an integrating framework; closing the achievement gap; teaching math to English language learners; accommodating and celebrating differences in the mathematics classroom.

The MEA-MFT website is now accepting "Applications To Present" at <http://mea-mft.net/>.

- * All registration will be done online.
- * You will need to register or login to access the form.
- * Please submit your application by April 1,2008 for the best selection of your preferred time to present.
- * The final application deadline for the conference is May 15, 2008.
- * There are no exceptions to the May 11 deadline.
- * After submitting your application, you will receive a confirmation email within a couple weeks from MEA-MFT.

If you have any difficulty with the on-line registration, contact Kathie Daviau at daviauk@billings.k12.mt.us or Rose Steiner at steinerr@billings.k12.mt.us for assistance.

Presidential Award for Excellence in Mathematics and Science Teaching

The Presidential Award for Excellence in Mathematics and Science Teaching (PAEMST) is the highest recognition that a kindergarten through 12th-grade mathematics or science teacher may receive for outstanding teaching in the United States. Enacted by Congress in 1983, this program authorizes the President to bestow up to 108 awards each year. The National Science Foundation administers PAEMST on behalf of The White House Office of Science and Technology Policy. Awards are given to mathematics and science teachers from each of the 50 states and four U.S. jurisdictions. The jurisdictions are Washington, D.C.; Puerto Rico; Department of Defense Schools; and the U.S. territories as a group (American Samoa, Guam, the Commonwealth of the Northern Mariana Islands, and the U.S. Virgin Islands). The teachers are recognized for their contributions to teaching and learning and their ability to help students make progress in mathematics and science.

In addition to honoring individual achievement, the goal of the award program is to exemplify the highest standards of mathematics and science teaching. Awardees serve as models for their colleagues, inspiration to their communities, and leaders in the improvement of mathematics and science education.

The application process involves four phases:

- * Nomination
- * Completion of an application
- * State and national competition
- * FBI background check (for finalists)

Completed applications are due by May 1, 2008.

Why Apply?

Recipients of the award receive the following:

- A citation signed by the President of the United States.
- A paid trip for two to Washington, D.C., to attend a weeklong series of recognition events and professional development opportunities.
- Gifts from program sponsors from around the country.

- A \$10,000 award from the National Science Foundation.

In addition to recognizing outstanding teaching in mathematics or science, the program provides teachers with an opportunity to build lasting partnerships with colleagues across the nation. This growing network of award-winning teachers serves as a vital resource for improving science, technology, engineering, and mathematics education and keeping America globally competitive.

Who Is Eligible?

The following are eligibility criteria for nominees:

- They must be highly qualified teachers, as deemed by their States, districts, or schools; or, in the case of private schools, in the spirit of the principles and provisions of the No Child Left Behind Act of 2002, Public Law 107-110, as defined by State and local standards.
- They must hold a degree or appropriate credentials in the category for which they are applying. They must be teachers in 1 of the 50 states or 4 U.S. jurisdictions. The jurisdictions are Washington, DC; Puerto Rico; Department of Defense Schools; and the U.S. territories (American Samoa, Guam, the Commonwealth of the Northern Mariana Islands, and the U.S. Virgin Islands).
- They must be full-time employees of the school or school district as determined by State and district policies.
- They must have at least 5 years of mathematics or science teaching experience prior to application.
- They must teach mathematics or science at the kindergarten–6th grade level in a public or private school.
- They must not have received the PAEMST award at the national level in any prior competition or category.

NCTM in the News

Media Update for NCTM Public Relations Contacts

A Positive Report Card for Math from NAEP

There is much to be happy about in the just released National Assessment of Educational Progress (NAEP) report, which shows continued improvement in math for all students in grades 4 and 8.

The 2007 results show an incremental and sustained improvement in mathematics learning by students in both grades 4 and 8. This year's record high scores are an affirmation that much of what we're doing is working.

Nationally, results for most racial and ethnic groups showed improvement. Hispanic students posted their highest scores yet, an outcome that is noteworthy given that the percentage of Hispanic students in public schools has more than doubled since 1990.

Public attention to math instruction and professional development of teachers is having a positive impact. The movement for stronger standards, which dates back to the 1980s, has brought math and reading to the forefront of attention.

Talking Points for 2007 NAEP Nation's Report Card

Signs of Improvement

Math scores increased in both grades 4 and 8. The average score of both fourth and eighth graders was 2 points higher in 2007 than in 2005, on a scale of 1 to 500 points.

The average score in grade 4 increased from 238 in 2005 to 240 in 2007. The 1990 score was 213.

The average score in grade 8 increased from 279 in 2005 to 281 in 2007. The 1990 score for eighth graders was 263.

Between 1990 and 2007, the percentage of fourth graders performing at or above Basic increased by 32 points, from 50 to 82 percent. In 2005, 80 percent scored at or above Basic.

The percentage of fourth graders performing at or above Proficient increased from 13 to 39 percent between 1990 and 2007. Since 2005, the increase was 3 percent.

The percentage of eighth graders performing at or above Basic was 19 percentage points higher in 2007 (71 percent) than in 1990 (52 percent). In 2005, 69 percent scored at or above Basic.

The percentage of eighth graders performing at or above Proficient increased from 15 to 32 percent between 1990 and 2007. Since 2005, the increase was 2 percent.

Overall, 22 states and the District of Columbia saw higher math scores in fourth grade than they did in 2005, with no states showing a decline. For eighth grade math, 25 states and the District of Columbia saw higher math scores than in 2005, with no states showing a decline.

Students at all three achievement levels-basic, proficient, and advanced-made statistically significant gains.

NAEP Results are at www.nationsreportcard.gov.

Mathematics Opportunities

Conference on CAS in Secondary Mathematics

Computer algebra systems (CAS) have the potential to revolutionize mathematics education at the secondary level. They do for algebra & calculus what calculators do for arithmetic: simplifying expressions, solving equations, factoring, taking derivatives, and much more!

WHEN: Saturday, June 28, 2008 8:15 AM – 4:15
Sunday, June 29, 2008 8:00 AM - 1:00 PM

WHERE: New Trier High School (Northfield Campus)
7 Happ Road Northfield, IL 60093

COST: Registration: \$195 (before May 2, 2008) \$250 (after May 2, 2008)
(Fee includes continental breakfast, box lunch, snack, & conference shirt)

HOTEL: Renaissance Chicago North Shore Hotel, Northbrook IL.
Book directly online at <http://cwp.marriott.com/chinb/meecas/>
1-800-468-3571 Mention group code "USACAS" or "MEECAS"

HOW: On-line registration, updates, & hotel info available at <http://meecas.org>

A SummerMath for Teachers Institute for Teachers of Grades K-8

Integrating the Teaching of Mathematics and Science Using an Inquiry Approach

Often, the teaching of science receives too little attention in the elementary schools. When math and science programs are "integrated", students use math they know but do not learn new mathematics in the process. If you want to avoid both of these pitfalls-and engage in helping students develop their own thinking in mathematics and science-consider attending the 2008 SummerMath for Teachers institute, "Integrating the Teaching of Mathematics and Science Using an Inquiry Approach." This institute will feature two highly-regarded sets of materials: the Developing Mathematical Ideas module **Working with Data**, and the Foss science kit, **Variables**.

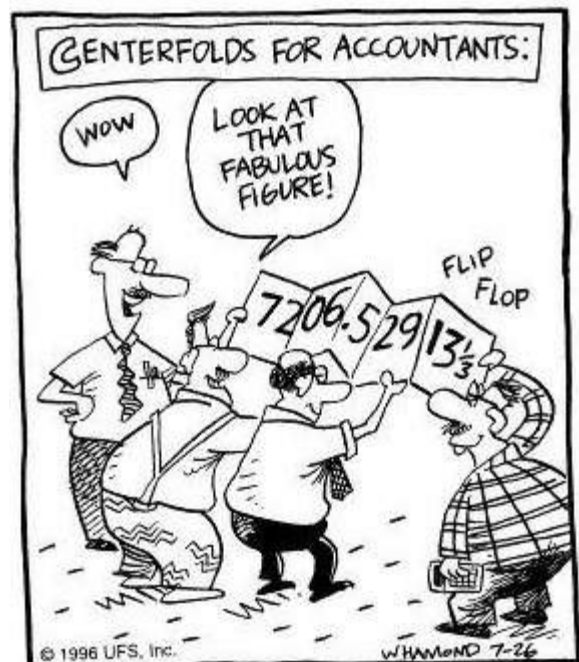
For more information and to request an application, check this website:

www.mtholyoke.edu/proj/smt or call 413-538-2063

For information on the Mathematics Leadership Program, check www.edc.org/MLP



Jim Hamling being recognized as an outgoing MCTM president. October, 2007



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