

MONTANA MATHEMATICS

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of Teachers
of Mathematics

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Extolling the Virtues of a National Convention

The NCTM conference was in Washington DC in April. Wow! What an exciting experience that was! There were 828 sectionals all devoted to the teaching of mathematics from the elementary to the college level with over 190 different exhibitors that provided books to peruse, games to experience, activities to explore, and free samples to take home. It is a great place to get ideas for your next textbook adoption and to mingle with approximately 11,000 mathematics educators from around the world. No matter what you teach, there were a cornucopia of sectionals to pick from. Being set in our Nation's capital was a special treat as well. The opening speaker was Pedro Noguera from the Metropolitan Center for Urban Education. His talk concentrated on Challenging Racial Inequality in Our Schools. Pedro's speech was applicable to all students in all schools. He is a powerful advocate for a strong and vibrant education system and his talk was very thought provoking. NCTM entices national speakers as well as classroom teachers to speak at the conference so a wide range of experiences are shared. The sectionals provided by the classroom teachers are rich in ideas of how to impact your classroom in a daily basis. They provide new ideas on how to present material in the classroom as well as activities that introduce or extend a concept. These teachers provide innovative ways to review, they provide new learning strategies, and they reenergize the participants to try something new when they return back to

Continued on page 2

Table of Contents

Article	Page
MCTM Presidents Message	2
Lesson Plans	3
Aunt Sally	4
Project WILD, WET Correlation	5
2009 Math Contest Results	6
MCTM Scholarship Awardee Article	7
Pun Fun	8
January Board Meeting Recap	9
Election Results	9
Mathematics Curriculum Specialist Report	10
Math Writing Contest Application	11
Montana Learning Center Opportunities	12
NCTM Representative Report	13
Assessment in Montana	14
Dean Preble Nomination	16
2009 NCTM Meeting Webcasts	17
MCTM Teacher Scholarship Information	18
MEA/MFT/MCTM/T ³ Conference Hotel Information	18
Teacher Scholarship Application	19

MCTM President's Message

Summertime is soon to be here!! Just a reminder, this summer MCTM is sponsoring two exciting Professional Developments. "Implementing the Algebra Standard K-6" is being presented by Angel Greenley Zickefoose at the Montana Learning Center at Canyon Ferry on July 13-16. Angel is a math coach with the Billings School District. She is knowledgeable, interesting, and will provide you with much you can use in your classrooms. "Update – Invigorate – Integrate Using the Calculator to Enhance Student Learning" is being presented by Todd Morstein at the Lincoln Center in Billings on July 20-23. Todd is currently working with Texas Instrument as a presenter but resides in Kalispell Montana. He is dynamic, interesting, and knowledgeable in the area of technology. For more information on how to apply to attend these exciting workshops visit our website at www.montanamath.org.

The Montana Learning Center is providing a workshop for 8th through 10th grade students entitled Innovations in Math and Science. If you have middle or high school students that you think would be interested in attending please share the information with them. You can find the information on the website. MLC has a busy summer planned. Check out their website at www.montanalearning.org. The Learning Center at Canyon Ferry is a truly special place to host workshops, camps, and meetings. If you are looking for a place to meet with math or science educators keep MLC in mind. If you are interested in donating to this amazing place, contact them through the website. I am sure you could provide a little elbow grease as well as a monetary donation. At Teacher's convention time, a portion of the Silent Auction proceeds are given to MLC. If you have a talent to create or know of a business that would be interested in donating to the silent auction please contact them soon.

Nominations for the Dean Preble award are due June 15th. All the pertinent information is on the MCTM website. Please honor Dean by seriously considering your colleagues and nominating a worthy teacher. They will receive a monetary award, a beautiful plaque and a lifetime membership to MCTM.

In April I attended the NCTM conference in Washington DC with Lisa Scott. We both took a couple of discretionary days and did some sight seeing before the conference. What an awesome place to visit!! It really makes you want to revisit your knowledge of history. My favorites were Mount Vernon and Arlington Cemetery. The changing of the guard at the Tomb of the Unknown Soldier is so impressive. The conference was exciting as well. Check out the feature article regarding the conference. Next year it is in Sunny San Diego. Start making plans to attend!

Enjoy the summer. Use it to regroup, to learn something new, or to do whatever you like doing. Thanks for all you do, both inside and outside the classroom.

-Submitted by Lisa Wood

Convention – cont. from page 1
 their classrooms. The general sessions provide teachers with thought provoking ideas and strive to encourage teachers to expand their knowledge and to share their experiences with people outside the education community. They also reaffirm the importance of our chosen profession and make us proud to be an educator. Exhibitors also provide sectionals so teachers can experience their materials in a more hands on approach or can ask additional questions about their materials. Throughout the conference there were sectionals that provided tables for those interested in actively participating in the materials and chairs for those that preferred to glean the information through watching. Years ago when I attended NCTM conventions many sectionals were so packed that it was difficult to find a session to attend that wasn't either closed due to overcrowding or was strictly lecture. NCTM has changed its format to include ample sectionals at each time period and provided rooms large enough to include tables for a more hands on experience and finding a sectional to attend is much easier. Why am I extolling the virtues of the National Convention? I just wanted to make sure that our Montana teachers knew that the convention has changed. It is more user friendly and teacher oriented.

Next year's convention is in Sunny San Diego California from April 21st to the 24th. I would like to encourage you to consider pursuing an avenue to attend. Make a formal proposal to your administration, your school board, your local PTA, or business community to sponsor your trip to the National convention. Also, MCTM sponsors a trip to the National convention for one of

Continued on page 17

Lesson Plans

Complete lesson plans are available at www.montanamath.org

K-6

How Big Is a Foot?

Submitted by Laurie Enebo

Mathematics and Children's Literature Connection

Objectives: Introduce units of measurements, use problem solving strategies, compare and contrast, and explore the need for standard units of measurement.

In this lesson, appropriate for grades 3-6, students and/or teachers read the book *How Big Is a Foot?*, by Rolf Myller. They create non-standard units (using their own footprints). They then use them to measure themselves, various objects in the classroom, and they also use them to make "beds". As a result, students realize the importance of a standard unit of measure.

Middle School

Graphing Calculator Investigation

Submitted by Kathy Hill

This is a beginning experience with graphing equations on a calculator. Students will investigate different sets of equations looking for similarities/differences in the appearance of the equations' graphs.

High School

Math Games

Submitted by Lisa Wood

Games: Search For Gold; Math Bingo and Hot Seat

At the NCTM convention in Washington DC I attended a workshop titled "Using Games as Review", targeting the high school level. These games, however, could be used at any level. They may provide a little twist to a game that you already play. The MCTM website provides a description of each.



Aunt Sally

Dear Aunt Sally,
I am looking for ways to improve my math teaching skills and earn credit this summer. Do you have any great ideas?
Signed,
Eager Tolearn

Dear Eager,
What a great question! I always have great ideas. There are two Professional Development Academies offered by MCTM. The k-6 academy will be at the Montana Learning Center and the 7-12 will be in Billings. MCTM also needs test writers for the MCTM Math Contest for next year. The test writing will be in Billings. All three of these opportunities offer college credit or OPI renewal credit and all three are excellent opportunities to grow professionally. For more information and application forms go to: www.montanamath.org.
Signed,
Your Dear Aunt Sally

Dear Aunt Sally,
I heard there was going to be a T-Cubed conference during the MEA/MFT/MCTM conference in October. Won't that distract from both conferences?
Signed,
Ice Cubed

Dear Ice,
The T-Cubed and the MEA/MFT/MCTM conferences are completely integrated and seamless. If you register for one, you are registered for the other. The cost of registration for the MEA/MFT/MCTM conference is unaffected by the additional attraction. If you regularly

attend the fall conference, the main difference that you will notice is more emphasis on technology and more TI workshops. We have several speakers demonstrating the TI-Nspire and the TI Navigator, as well as multiple activities using the TI-84.

For more information continue to visit the MCTM website at:
www.montanamath.org.

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/.

Traveled - cont. from page 15

Speakers selected for different reasons reiterated messages about of the power of assessment to improve student achievement. Daily the phantom voices of Haycock, Leinwand, Nelson, and the Hardin professionals prompt my instructional habits. Did I assess what students knew before starting the lesson? Did I ask students to tell me what they understood at the end of a lesson? And when I collected information, did I adjust the direction I'd planned? Assuming students learned is inadequate. I must assess to seek student levels of understanding and act on that knowledge. Formative assessment is a teaching tool I intend to fully test, hone, and share.

For more information
The Education Trust at www.edtrust.org
Steven Leinwand, SLeinwand@air.org
Hardin Schools albert.peterson@hardin.k12.mt.us,
Annette.moody@hardin.k12.mt.us,
Roxanne.notafraid@hardin.k12.mt.us, or
karmanelson@theglobal.net

Submitted by Sue Harding

Correlations to Project Wild, Project Learning Tree, and Project Wet.

Project Learning Tree, WET, and WILD lessons have been correlated to the Montana Academic Content Standards for science, math, and reading.

The website is: <http://www.msuextension.org/plt/>

This project is a joint effort of Montana State University, Extension Forestry, primary sponsors of MT Project Learning Tree (PLT) Coordinator; Montana Fish Wildlife & Parks, sponsors of MT Project WILD (WILD); and Montana Watercourse, sponsors of Project Wet (WET).



Correlations to Montana's Model Content Standards



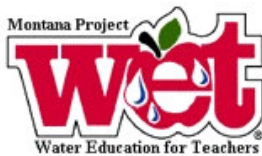
Welcome to this interactive website for **Project Learning Tree, Project WET, Project WILD and Aquatic WILD** activities and their correlations to the Montana science, reading and math academic standards.

These award winning programs provide hands-on, interdisciplinary learning opportunities that investigate natural resource issues and encourage young people to make informed responsible decisions.



Joining Stewardship of Water Resources

Please note: Currently the activity guides for Project Learning Tree, WILD and Aquatic WILD are correlated to Montana's science, reading and math academic standards. Project WET activities have also been correlated to the reading, social studies, literature, information literacy/library media, technology and writing and a pdf of these content standards can be accessed by visiting the [Mt. Watercourse web site](#).



Problems or questions about using the [Montana Correlations Search?](#)

2009 MCTM MATH CONTEST – Overview & Results

Final results for the 2009 MCTM Math contest are posted on the MCTM website: <http://www.montanamath.org/contest/state/index.html>. This year's competition involved over 4000s students and countless teachers and volunteers who helped to make the competitions successful. Thank you for encouraging your students to participate and for your involvement in the contest. If you weren't able to participate this year, please consider participating next year.

Kathje Dalton will be the State Contest Director beginning in 2010. Kathje currently teaches at Billing Central High School and has been involved with MCTM for many years.

I would like to thank the Regional Directors and Tony Riehl the contests "data man" for his work crunching the data and supporting the directors as they conduct their contests.

Congratulations to the regional scholarship winners and the state scholarship recipients.

2009 Scholarship Awards

The following two individuals are the MCTM State Scholarship winners. The sum of their raw scores on the Senior Test, Finite Test and Scholarship Test were the highest for the 12C category. They will each receive a \$500 Scholarship.

Top Female: V. Hall, Big Sky HS

Top Male: C. Windorski, Park HS

The following are the MCTM Regional Scholarship winners. They will each receive a \$200 Scholarship.

Billings Site – Jennifer Brackney

K. Pellinen, Billings Senior
G. Landgren, Billings Skyview

Bozeman Site – Dawn Rowling

L. Grubich, Manhattan HS
C. Windorski, Park HS

Glasgow Site – Marie Mavencamp

C. Morgan, Hinsdale
J. Miller, Glasgow HS

Grass Range Site – Sherry Horyna

J. Noland, Geyser
J. King, Winnett HS

Great Falls Site – Satinee Lightbourne

H. Morrison, CMR - Great Falls
C. Peck, Great Falls HS

Havre Site- Mary Wagner

A. Headstrom, Havre HS
J. Frydenlund, Shelby HS

Missoula Site – Chip Rinehart

Co-winners: V. Hall, Big Sky HS and Rachel Lee, Loyola
K. Doyle, Missoula Catholic HS

Sidney Site – Yvonne Gebhardt

K. Lindblom, Plentywood HS
S. Sainju, Sidney HS

Southeast Site – Jessie Collins

J. Kary, Baker HS
K. Tusler, Terry HS

Southwest Site – Lindsey Johnson & Kerry Sacry

R. Swenson, Helena Capital
S. Haag, Helena Capital

- Submitted by Linda Horst

Convention – cont. from page 1

Next year's convention is in Sunny San Diego California from April 21st to the 24th. I would like to encourage you to consider pursuing an avenue to attend. Make a formal proposal to your administration, your school board, your local PTA, or business community to sponsor your trip to the National convention. Also, MCTM sponsors a trip to the National convention for one of our members. Lifetime and ten year members are automatically included in the drawing and each member that renews is as well. New members and those people encouraging them to join are also entered. At the Leadership conference in January or February a member from this list is drawn and awarded the trip. MCTM also provides teacher scholarships for both in state and out of state conventions. The in state scholarships are for \$250 and the out of state are for \$400. Your only responsibility to MCTM is to write a brief article about the conference for the newsletter. Please seriously consider attending the National conference and start looking for assistance now. Have a great summer!

-Submitted by Lisa Wood

Deadline for September Newsletter is
September 10, 2009

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

MCTM Scholarship Article

My MCTM Scholarship was used to attend the 2009 NCTM conference in Washington DC (in the springtime so I could see the cherry blossoms). The experience of a national conference is immeasurable; the outstanding cadre of speakers and sectionals leaves not enough time to experience it all. Which leads me to my next dilemma – how to summarize the new ideas and old ideas rejuvenated. Here is my summary; however, please visit <http://montanamath.org> for handouts, webcasts of the keynote speakers, and worksheets to download and view.

One of my favorite sectionals showed the Singapore Math Bar Model Drawing by Char Forsten. This is powerful problem solving tool that opens new pathways to learning mathematical story problems at every level. Model drawing is exactly what the name implies: drawing simple visual models to represent word problems. I am presenting a similar sectional in Billings at the MEA-MFT conference in October.

Every Picture Tells a Story had a great idea about matching a graph, equation, and word problem. You have 24 cards: 8 with the equation in $y=$ form, 8 with the graph drawn, and 8 with a description of a situation that would fit the graph. The students working individually or with a group would sort to match the 8 sets of 3 cards. The handout is available at <http://montanamath.org>.

Dr. Monica Neagoy, <http://monicaneagoy.com>, presented *A Journey Through the Awesome World of Mathematics*. Her passion for math just explodes as she talks. We are missing passion for math – and the appreciation for its fundamental beauty, elegance, and artistry.

Digital Divide: Web 2.0 to Teach Math by Robin Angotti had several ah-ha! moments for me. She described our students as Digital Natives, where many of us are Digital Emigrants. Our students grew up with technology, not knowing anything else. We have learned it, but we have known non-digital. Technology is their world; they process information differently. Journaling with blogger.com or edublog.com using an RSS feed with Google reader or feedraider.com will meet the students in their comfort zone. They may know how to get to your website, but they are more likely to blog. Robin said that to reach your students, you must go to their neighborhood; a social network site like Facebook is where our students spend their time. Once you make your Facebook account, form a group and name it Algebra I. Invite your students into your group. You do not need to make them your friends to have them in your group. That maintains both the teacher and student's privacy. You can have problems discussed, post assignments, make announcements, or whatever comes up. You will be reaching them on their turf. The handout and an article are available at <http://montanamath.org>.

Along the same line, Dr. David Ewing had an introduction to Podcasting. Using all free and open source applications: CamStudio 2.0, Audacity, and iTunes U to create your own podcasts. Audacity is a free software to record with your computer's speaker and convert to MP3s. CamStudio will take a video of your desktop in .avi form. Itune U is part of iTunes, but it is completely free. You can get videos or podcasts on almost any topic. He also stressed that our students learn differently that we do; meet them in their comfort zone.

Continued on page 8

MCTM Membership Form

New Member Renewal
 Elementary MS HS
 College Other
 Name _____
 Address _____

 Phone Number: _____
 Email: _____

Annual Dues (September- August)	
_____ Regular (1 yr)	\$15
_____ Regular (2 yrs)	\$25
_____ Regular (10 yrs)	\$100
_____ Life Time	\$150
_____ Student	\$8
_____ Retired Educator	FREE
_____ MCTM & MSTA	\$30
_____ 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

Pun Fun

People with math background seem to groan rather well.

Do you think these a bit odd ?

Have pun!

1. The roundest knight at King Arthur's round table was Sir Cumference. He acquired his size from too much pi.

3. I thought I saw an eye doctor on an Alaskan island, but it turned out to be an optical Aleutian.

5. She was a moonshiner's daughter, but he loved her still.

7. A rubber band pistol was confiscated from algebra class because it was a weapon of math disruption.

9. No matter how much you push the envelope, it'll still be stationery.

11. A dog gave birth to puppies near the road and was cited for littering.

13. A grenade thrown into a kitchen in France would result in Linoleum Blownapart.

15. Two silk worms had a race. They ended up in a tie.

17. Time flies like an arrow. Fruit flies like a banana.

19. A hole has been found in the nudist camp wall. The police are looking into it.

21. Atheism is a non-prophet organization.

23. A sign on the lawn at a drug rehab center said: 'Keep off the Grass.'

25. A chicken crossing the road is poultry in motion.

27. The short fortune-teller who escaped from prison was a small medium at large.

29. The man who survived mustard gas and pepper spray is now a seasoned veteran.

31. A backward poet writes inverse.

33. In democracy it's your vote that counts. In feudalism it's your count that votes.

35. When space men land, they normally say, "Take me to your leader."
When they land in Las Vegas, they say, "Lead me to your taker."

37. Don't join dangerous cults: Practice safe sects!

If someone called you odd, would you try to get even ?

Jerry P. Becker

MCTM Scholarship Article – cont. from page 7

Susan Mercer spoke about Order of Operations Without Rules. She sets up a four part table to describe a problem using “in words”, “representation”, “expression with addition only”, and “answer”. With the four representations of the problem, the students see the problem rather than seeing the numbers. This handout is available at <http://montanamath.org>.

My thanks to MCTM for allowing me to have this most awesome journey through mathematics!

Submitted by Kathie Daviau

MCTM January, 2009 Board Meeting Minutes

The MCTM Board met in January before the Leadership Conference in Bozeman. The Leadership Conference was a great success, and we hope to see more of you there next year!

The Dean Preble Award nominations are due June 15th, so please start thinking about a colleague or other professional you may know who has made a difference in the teaching and learning of mathematics in our state. See the website for details on award criteria and the nomination procedure. Remember: Board members cannot be nominated. Along the same note, there are also Early Career Scholarships available for \$500 in order to attend a conference/PDA; for more information, check out the website.

We have been exploring ideas that will increase K-8 membership in our organization. Originally, we used to offer a combination membership with Math/Science (MCTM/NSTA). We are now checking out options and researching the idea of a joint-membership for K-8 teachers that would include Math, Science, and a choice of Reading or Social Studies, in order to attract more elementary teachers into professional organizations – namely ours. More information will be coming soon!

Professional Development Academy Offerings
This Summer:

- Implementing the Algebra Strand K-6: July 13-16, 2009
- Using Calculator to Enhance Student Learning 7-12: July 20-23, 2009
- Numerous Math and Science camps at Montana Learning Center (www.montanalearning.org)

For more information about the PDA, see our website (www.montanamath.org).

October 2009 MEA-MFT: The inimitable Dr. Maurice Burke from Montana State University, Bozeman will be featured as our Keynote Speaker as we host a **T³ Regional Conference** at this year's upcoming MEA-MFT and MCTM conference in Billings. The **T³ Regional Conference** will be included in your MEA-MFT conference fee. A **T³** speaker will be featured at MCTM conference in addition to Dr. Burke. Make plans to attend! If you want more details on any of the information above, visit www.montanamath.org.

OPI Math Standards Revision: The team has finished with creating the first draft of the new standards, benchmarks, and performance indicators! Jean will be taking these to the first meeting with the SBOE committee in March.

Submitted by Renee Floyd, Secretary

2009 Election Results

Congratulations to our new MCTM Board members. The board would like to welcome David Erickson as our new President Elect. He hails from Missoula. Our new board members are Jim Hirstein from Missoula, Marcia Anderson from Great Falls, and Beth Burroughs from Bozeman. Thanks to everyone that ran, we hope that you will run again! We would also like to say a big thank you to Terri Dahl from Great Falls and Carl Anderberg from Helena. They will be leaving the board in June. We appreciate all they have done to enrich MCTM for all of us. Thanks for voting and have a wonderful summer!



Denise Juneau, Superintendent
Montana Office of Public Instruction
www.opi.mt.gov

Article for Summer MCTM Newsletter from Jean Howard

CHECK IT OUT WWW.OPI.MT.GOV/MATH/INDEX.HTML OPI MATH PAGE

It includes lots of information, starting with a link to the revised Montana K-12 Mathematics Content Standards and Performance Descriptors and a fabulous document you will want to read, "A Vision of Montana Mathematics" thanks to the dedicated revision team of teachers from across the state.

The Montana K-12 Mathematics Content Standards and Performance Descriptors are in the process of being approved by the Board of Public Education. The public hearing date is June 22 at 10:30 in the 1300 Eleventh Avenue OPI conference room. Effective date of Rules is June 29, 2009.

A group of K-12 mathematics educators will write Mathematics Essential Learning Expectations (ELE) for each grade level, K-12 August 9-14, 2009, at the Montana Learning Center, Canyon Ferry Lake. The ELE will list the essential knowledge and skills a proficient student will be able to do at each grade level. Educators can utilize the ELE to build curriculum and daily instruction for students to meet the proficient level for mathematics benchmarks and content standards.

Summer will be exciting with all the work I am planning to accomplish or at least start to support Montana Standards-Based Education. Some projects involve creating a matrix comparing the current standards with the revised standards; comparing revised standards with Achieve and ACT; working with Katie Burke, science curriculum specialist, in creating a Toolkit to assist districts in designing curriculum and selecting texts and resources that align with standards; and a document that aligns the math and science standards.

Don't forget to **CHECK OUT** WWW.OPI.MT.GOV/MATH/INDEX.HTML

For summer opportunities and great resources, lessons, activities and tools.

Please contact me if you have any comments or questions. Also remember to take time to relax and renew this summer.

A handwritten signature in blue ink that reads "Jean Howard".

Jean Howard
Mathematics Curriculum Specialist
jhoward@mt.gov
406-444-0706

**Please share this information with ALL members of your math department!
Thank you!**

**MCTM Math Contest Writing Course
Billings, MT
June 29-30, 2009
Registration Deadline: June 10, 2009**

___ **YES**, I want to help write the 2010 Math Contest Tests (15 OPI renewal units or 1 graduate credit available – about \$125)

___ **NO**, I cannot help write this year, but would like to help by proof-reading completed tests. Tests will be mailed out by July 10th and will need to be returned by August 10, 2009.

Name _____

Address (after June 1) _____

City/State/Zip _____

Phone number(s) _____

E-mail (after June 1) _____

Current Teaching Assignment (2007-2008)

Class(es) _____ Grade levels _____

Hotel stay will be paid directly by MCTM. Sunday night meal (BBQ) will be provided. The course runs from noon-9pm on Sunday, and 8 am - 5pm (with an hour lunch-on your own) on Monday. Sign-up for college (MSU) or OPI credit will be Sunday afternoon. A \$250 stipend will be mailed to each writer upon completion of the course. Mileage and per diem will also be reimbursed. Carpooling will be required when possible.

___ Yes, I would like to stay at a hotel on Sunday night at no charge to me.

___ No, I will make other accommodations with the understanding that any charges will be my responsibility.

THANK YOU FOR YOUR INTEREST IN HELPING!

Return forms by June 10, 2009 to:

Kathje Dalton
3534 Pebble Brook Drive
Billings, MT 59101
406.231.5657

OR

kdalton@billingscatholicschools.org

Opportunities for Your Students

Montana Learning Center at Canyon Ferry Lake (MLC)

Outstanding Montana teachers, including Presidential award winners, will be instructors at MLC camps this summer: Beth Thomas (Great Falls), Dick Seitz (Helena), Carter Eash (Kalispell), Chris Ralph (Helena). You can *honor one or more of your students by nominating them* to experience a science and mathematics camp at MLC this summer. Just send us your name, the student's name, and the parent's contact information to CBock@MontanaLearning.org

2009 Student Programs

Innovations in Math & Science

Students entering grades 8-10

Students will engage in a full day hike in the mountains surrounding Canyon Ferry, collect, interpret data, and make conclusions about the water quality of two tributaries to the Missouri River, explore the properties of motion. Ideas from the world of fractals, computer technology, and applications of science will also be explored.

Date: July 19 - 25, 2009

Outdoor Adventures in Math and Science

Students entering grades 9-11

Students will take an overnight hike and one day river float. We will look at the world through the eyes of a scientist and a mathematician. We will generate questions, discuss, and seek answers to Montana related challenges such as water management, resource management, wildlife preservation, and weed management.

Dates: Session 1: July 5 - 11, 2009; Session 2: July 26 - Aug 1, 2009

Young Naturalist Adventures

Students entering grades 4-7

Students spend 4 days and 3 nights exploring earth science and water habitats. Swim, hike and observe the night sky.

Date: July 20 - 23, 2009 (4th - 5th graders), July 27 - 30 (6th - 7th graders)

Camp Discovery

Students Entering Grades 1-3

Students are picked up and delivered back to Helena each day for this 4-day camp where they participate in science experiments, create crafts, and listen to fun stories.

Date: July 20 - 23, 2009

For more information go to

<http://www.montanalearning.org> and “click” on Programs.

Happenings:

- MCTM Academy “**Implementing the Algebra Standards K - 6**”, July 13 - 16, at MLC.
- The MLC Board has added three outstanding members: **Mary Larsen**, long-time teacher who is currently a science and mathematics instructional coach for Helena Schools; **Shirley Greene**, MT Presidential Award winning Billings middle school science teacher and MSTA Board member; **Marie Vanisko**, Professor Emeritus, Carroll College, former SIMMS financial manager and recently chaired the College Board Committee for SAT Subject Tests in mathematics.
- MLC received a **Qwest grant** to assist ten grades 7 - 12 mathematics and science teachers in becoming “ambassadors” who educate community members, businesses and educators about the importance of science and mathematics. Dick Seitz is working with Qwest of Montana CEO, David Gibson, to create this program.
- Other programs which **MLC hosts** this spring and summer include: Water Summit, MAPA, A Forrest for Every Classroom, OPI, Youth Forrest Monitoring, Broadwater to Bozeman (B & B), Before It’s Too Late (BITL) and AmeriCorp.
- MLC is looking for a **responsible person or family** to perform limited clerical and/or maintenance duties in exchange for partial or full subsidies for housing, utilities, phone and Internet access. If interested, contact Glenn Allinger at allinger@montana.edu.
- **MLC is scheduled to receive Qwest DSL connection** by September replacing the slower, less efficient satellite Internet connection.

Submitted by Glenn Allinger

NCTM Information

Lisa Wood, MCTM President, and I attended the NCTM Annual Conference and Delegate Assembly in Washington D. C. The site seeing was amazing and so was the assembly and conference!

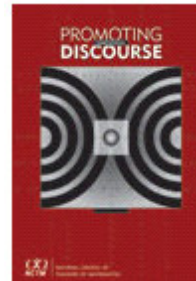
The most exciting news for me was the release of new books written to the *Curriculum Focal Points for Prekindergarten through Grade 8 Mathematics*. These books are designed to show



teachers and other educators how to organize mathematics instruction around the Focal Points. These books are titled: *Focus in Grades 3-5: Teaching with Curriculum Focal Points*, *Focus in Grade 3: Teaching with Curriculum Focal Points*, *Focus in Grade 4: Teaching with Curriculum Focal Points*, *Focus in Grade 5: Teaching with Curriculum Focal Points*, *Focus in Grades 6-8: Teaching with Curriculum Focal Points*. You can order the books from www.nctm.org/catalog.

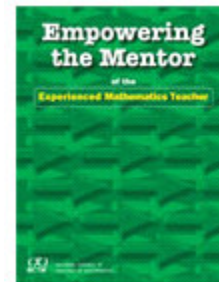
September 2009 the *Focus in High School Mathematics: Reasoning and Sense Making* will be available. This publication was adopted by the Board of Directors as an official NCTM position and provides an outline for how reasoning and sense making can develop in core content areas. There will be supporting volumes for Algebra, Geometry, and Statistics and Probability. These books will provide a detailed

picture of what reasoning and sense making might look like and how they might develop in those areas of the high school mathematics curriculum. Watch www.nctm.org/catalog for these books in September.



The book *Promoting Purposeful Discourse: Teacher Research in Secondary Math Classrooms* was another must buy!

This book presents portraits of teaching by secondary school teachers who have closely observed classroom communication, conversation, and discourse and have sought to use them to improve the quality of their teaching and their students' learning.



One last book to mention is *Empowering the Mentor of the Experienced Mathematics*

Teacher. This book recognizes the importance of mentoring and how it can give teachers the support and encouragement they need not only to survive the challenges of teaching mathematics but also to develop as dedicated professionals. If you are a mathematics coach or mentor these are must reads!

I hope you find these resources useful and uplifting. Thanks for all the great teaching you do to the students in Montana!

Submitted by Lisa Scott, NCTM Representative

Traveled three thousand miles to learn about assessment in Montana

I am haunted by the messages on assessment and student achievement I heard from speakers in Washington DC at two conferences, the National Council of Supervisors of Mathematics (NCSM) and the National Teachers of Mathematics (NCTM).

Daunted by a thousand sessions, I initially selected sessions with enticing titles, recognized speakers, and content focus. Sometimes a single offering decided for me. NCSM opening speaker, Kati Haycock, president of The Education Trust, set the stage with graphic displays of educational data to evidence why America education needs to change. Data from National Assessment of Educational Progress (NAEP) showed elementary and middle schools improved since 1990, but at the same time high school achievement remained flat. The gap between African American and white students widened; the achievement of white 8th grade students was about the same as African American 12th grade students.

Of 24-years olds who graduated from college seventy-five percent came from household with incomes of more than \$80,000; nine percent came from households with less than \$25,000. Haycock's data supported the statement, "America gives less to those who arrive at school with less: less money, less experienced teachers, less access to highly demanding classes, and less well-equipped schools." Ms. Haycock shared stories and lessons learned from schools with populations considered "arriving with less," but who rank as high achieving:

1) High achieving schools focus on things they CAN DO instead of what they can't do.

- Schools can't change low birth rates, children born to single moms...
- Schools need to attend to what they can control.

2) High achieving schools don't leave anything about teaching and learning to chance

* Set clear and specific goals for what students should learn in every grade,

- Don't leave "good enough" decisions to individual teachers because expectations very widely teacher to teacher
- Students can do no better than the assignments they are given
- Assignment gaps lead to achievement gaps

* Provide teachers with common curriculum assignments and order of presentation

* Assure common marking standards

* Assess students every 4-8 weeks to measure progress

* Act immediately on the results of those assessments

3) High achieving school set their goals higher. If you focus on Advanced, Proficient takes care of itself.

4) High achieving schools put all kids into high quality, rigorous curriculums. Curriculum is the most accurate indicator of college success.

5) High achieving schools believe principals are hugely important, ever present, but not the only leaders in a school. Teachers observe other teachers to improve their craft

6) High achieving schools know how much teachers matter, and they act on that knowledge

- Work hard to attract and hold good teachers
- Make sure their best are assigned to the most needy students
- Chase out teachers who are not "good enough" for their kids

7) High achieving schools' leaders work with community leaders to close the gap.

Sometimes a speaker's reputation steered me to a session. Steven Leinwand, NCSM Past President, guaranteed stimulating thoughts about mathematics and its instruction. Leinwand's language distinguished formative and summative assessments.

Assessment *for* learning informed instructional decisions while also monitoring student progress.

Assessment data was formative only if it caused the instructor to make a change in the instruction for that group of students. If no change in instruction stemmed from the assessment, then it cannot be formative. Assessment *of* learning evaluated student achievement and overall progress. The NAEP data Haycock described was assessment of learning, or summative assessment.

Leinwand reported research proved formative assessment increased learning. His list of adjectives to describe formative assessment was: intentional; informative; seamless with quality instruction; used to monitor as early as possible student understanding; needs to make student thinking visible; the control resides closest to the classroom; deliberate; ongoing; and involves cumulative review. Leinwand stated, "The most effective mastery and retention of skills comes from on-going, daily review at the beginning of a class." Leinwand modeled a formative assessment strategy when he asked, "Tell me 5 things you see," and then revealed $f(x) = x^2 + 3x - 5$. He explained, this "brain dump" reviewed the lesson vocabulary. The instructor flexed the lesson based on what the students supplied. Good questions were part of formative assessment, "Ready, set. Show me 20 centimeters. How did you know?" The justification for the length

indicated required thought; a learner could not be passive. "Formative assessment is a teaching tool! Stop and collect information—before you do one more thing. Let your actions be informed by data," Leinwand admonished.

Sometimes fellow conference-goers influenced my decision. Jean Howard, Montana's OPI Math Specialist, brought to my attention a session. Professionals from Hardin, Montana elaborated their assessment journey. Superintendent Al Peterson highlighted the demographics of the rural district and how No Child Left Behind data triggered the project. Karma Nelson, an outside consultant, facilitated the development three project goals with Hardin staff: 1. Form grade level professional learning communities, 2. Make instructional/assessment decisions based on the data, and 3. Use common assessment as formative assessments. Nelson and Annette Moody, district assessment and curriculum specialist quoted researchers who informed the project's direction and actions. They outlined the timeline of activities. The language of formative assessment Leinwand articulated in his session flowed through the Hardin presentation. Finally, teacher Roxanne NotAfraid spoke with passion, dedication, and pride about the success of students taught by teachers who came together, wrote and administered common formative assessments, and then developed lessons to teach what the data said students lacked. Traveling to the nation's capital I learned Hardin School District exhibited characteristics of the highly successful schools described by the president of the Education Trust.

Nominations Sought for the 2009 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 unfailing 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 2009 Dean Preble Memorial Award is June 15. Nominations may be sent or e-mailed to:

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

2009 Annual Meeting Webcasts

Below are a few of the webcasts available at <http://www.nctm.org/conferences>. They are from the recent NCTM Annual Meeting in Washington D.C.

- [Washington, DC Opening Session](#)
Pedro Noguera, a leader in education reform, offers a dynamic, profound perspective on the challenges of racial inequality and diversity. He tackles the problems of race relations, desegregation, vouchers, and violence within schools and gives some solutions that you can use to bring equal opportunity in education to our schools.
- [Equity: the Most Important and Challenging Issue Facing Our Schools](#)
Changing inequitable practices and policies can be challenging since they can be subtle or blatant, personal or institutionalized, aware or unaware. Julian Weissglass discusses some insights that will increase the likelihood that discussions will be meaningful and productive and asks you to reflect on and talk about your experiences with inequity.
- [With an Eye on the Mathematical Horizon: Knowing Mathematics for Teaching](#)
What "horizon knowledge" of mathematics is involved in making

wise pedagogical judgements about what is mathematically important? Three core tasks of teaching are investigated: making connections, taking care with definitions and language, and attending to the necessary features of mathematical explanations and proofs at a given level.

- [Engaging Students in Significant Mathematics](#)
Henry "Hank" Kepner's update on the Council's promotion of mathematics teaching through its focus on curriculum, the dissemination of teachers' and researchers' reflective professional experiences, professional development, and the creation of community and policy support for change.
- [Coherence, Connections and Communication and Fraction Sense](#)
What about fractions? What do we mean by fraction sense? What is it about these a/b , 0.007, and 2% kinds of numbers? This session examined issues about learning fractions, decimals, and percent and considered issues around curricular coherence and the processes of connection and communications.
- [Washington, DC Closing Session](#)
This clip features Arne Duncan, with an introduction by Hank Kepner.

Convention – cont. from page 2

our members. Lifetime and ten year members are automatically included in the drawing and each member that renews is as well. New members and those people encouraging them to join are also entered. At the Leadership conference in January or February a member from this list is drawn and awarded the trip. MCTM also provides teacher scholarships for both in state and out of state conventions. The in state scholarships are for \$250 and the out of state are for \$400. Your only responsibility to MCTM is to write a brief article about the conference for the newsletter. Please seriously consider attending the National conference and start looking for assistance now. Have a great summer!

-Submitted by Lisa Wood

MCTM TEACHER SCHOLARSHIP

The MCTM teacher scholarship was established by the MCTM board in 1992 to award teacher scholarships, \$100 for instate conferences or \$250 for out of state conferences, to help defray the costs of attending conferences and workshops. The amounts were increased to \$200 for instate, and \$400 for out of state conferences by the MCTM board in 2006. The intent is to encourage our membership to participate in conferences and to help defray some of the expenses in attending conferences.

Any teacher who is an MCTM member is eligible to receive the scholarship except for current MCTM Board members. The application for a scholarship must be submitted at least **thirty** calendar days prior to the starting date of the conference. The recipient(s) must also write an article for the newsletter on a useful idea acquired at the conference. This article should be mailed to the Chairperson of the Scholarship Committee within **thirty** calendar days of the end of the conference. The chair will then submit the article to the newsletter and authorize the issuance of a check to the scholarship recipient. Scholarships will be limited to the applicants each calendar year that:

1. Submit a completed application to Jim Hamling, scholarship chairman.
2. Receive confirmation that the scholarship has been awarded.
2. Attend the conference.
3. Submit an article to the scholarship chair for the newsletter.

The scholarship chairperson / committee will screen the applications as necessary. Incomplete or late applications will not be considered. After the chairperson / committee has approved an application, a letter should be sent out to the applicant restating the above requirements and timelines. When the newsletter article is received by the scholarship chair, it will be submitted to the newsletter editor. The chair will then authorize the treasurer to issue a check for the appropriate amount.

The Chairperson may obligate up to \$2000 per calendar year.

So far this year only \$600 of the \$2000 has been allocated. This is basically “free” money. There is very little commitment on the recipient’s part. If you are interested, please fill out the application that appears in this newsletter or log onto : montanamath.org for an app. You may either send a completed application to Jim Hamling 1110 W Water Lewistown MT 59457 or email at hamling.midrivers.com Jim’s phone is 406-535-3263

The MEA/MFT/MCTM/T³ conference will be held in Billings, Montana on October 15-16, 2009 at Billings Skyview High School

The following motels have rooms reserved under MCTM for the conference. Tell them you are with the MCTM group.

Super 8

5400 Southgate Dr. (west end)
\$46 double/ \$41 single

Country Inn Suites

231 Main St. (heights) – includes breakfast & newspaper
\$81 double or single

Boothill Inn

Main & Airport Rd. (heights) - includes breakfast and shuttle service
\$98 double/\$91 single

MCTM Teacher Scholarship Application

Name: _____

Email: _____

Mailing Address: _____

City: _____ State: _____ Zip Code: _____

Home Phone: _____

School: _____

School Address: _____

City: _____ State: _____ Zip Code: _____

Work Phone: _____

Grade level(s) taught: _____ Subjects: _____

Have you been a recipient of this scholarship before? _____

If so when? _____

What conference or class are you planning to attend? _____

Location: _____

Date(s): _____

Why do you want to attend this conference or class?

What other conferences have you attended in the last five years?

How will you share the information gained from this conference or class?

MCTM NEWSLETTER
c/o Angel Zickefoose
18 S. Santa Fe Drive
Billings, MT 59102

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Editor: Angel Zickefoose

Montana Mathematics is a newsletter published for all members of the Montana Council of Teachers of Mathematics. The publication comes out 5 times/ year and is free to all members of the MCTM. Any information pertaining to MCTM can be sent to Angel Zickefoose at 18 S. Santa Fe Drive; Billings, MT 59102 or e-mailed to zickefoosea@billings.k12.mt.us. All entries will be reviewed.