

MONTANA MATHEMATICS

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of Teachers
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MCTM/MSTA Leadership Conference 2009

Building a better future for Montana’s children

The topic of this year’s conference is a continuation of Indian Education for All. The presenter, Bill Hayne, is a member of the Assiniboine/Sioux Indian Nation - Fort Peck, MT and a faculty member of Lewis-Clark State College. Hayne has a vast array of experiences working with educators about issues of diversity. His presentation is titled, “Learning Differences and the Challenge of Reaching All Learners”. Hayne will lead participants through understanding limitations, including learning and teaching disabilities, issues of identification and examining instructional skills, and examining room environment and communication.

In addition, members of the Montana math and science community will be presenting on a variety of topics addressing Indian Education for All. There will also be sessions about leadership opportunities for Montana educators. The topics will be appropriate for all grade levels. Opportunities will be available for teachers to discuss ideas for presentations at local, state, and national levels. The “State of the State” address for both math and science is always a highlight.

The goals for the 2008 Math and Science Leadership Conference are:

- To encourage leadership by fostering partnerships between math/science teachers, students, and university faculty
- To continue to build a network of colleagues within the K-16 math and science community
- To enhance professionalism by bringing new teachers into math and science leadership roles in Montana.

Registration will begin at 7:45 am on Friday, January 30, 2009. The conference will start at 8:15 and conclude by 12:00 PM on Saturday January 31. The conference will be held at the Comfort Inn located at 1370 N. 7th Avenue in Bozeman. Please contact the Comfort Inn at 587-2322 to reserve a room in your name. The reservations must be made by January 1, 2009 to assure the conference rate of \$76.

The cost of the conference is \$125 for MTCM/MSTA members. Registration for non-members is \$150 and includes a two-year membership in either MCTM or MSTa. The registration price includes meals.

Renewal units through OPI will be offered.

MCTM Board News

The MCTM board met on October 15th in Missoula during the MEA/MFT Conference. Outgoing and new MCTM Board members were recognized. New board members are Laurie Enebo (Region V), Verne Schlepp (Region V), and Renee Floyd (Region I). The Dean Preble award was given to Jim Hirstein for his outstanding contribution and work with MCTM. The winner of the annual PAEMST give-away was Anne Keith from Bozeman. 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. As of now, Kathy Hill is discussing how much Jennie Luebeck might want for writing the initial proposal package that the publishers have suggested – as well as a figure for writing the rest of the book, so the board can make further decisions. The board is also pleased to announce that OPI has hired Jean Howard as the new Math Specialist, and she has just finished creating a Standards Revision Committee. This committee will begin the arduous task of bringing up-to-date, rigorous, and relevant changes to our state’s mathematics standards. MCTM helped with the process of recruiting teachers for this project.

Great new upcoming events to look forward to:

MCTM will host a **T³ Regional Conference** at next year’s MEA/MFT and MCTM Conference in Billings, October 15-16, 2009! Make plans to attend! 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 Renee Floyd, Secretary

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MCTM President's Message

Greetings from Billings Montana!! It was great to see all of you in Missoula at the teachers' convention. For those of you that weren't able to make the convention this year, next year's convention is going to be very exciting for math teachers in Montana. MCTM was awarded a grant to put on a T^3 conference at next year's MEA/MFT conference in Billings. You will register like you normally would for the MEA/MFT convention and you will automatically be registered for the T^3 conference. We definitely need presenters for the convention, both and non-. Not all worthwhile activities include technology so sign up to present to your peers in either category. Elementary teachers we definitely need more presenters in your area. Your expertise in pedagogy and hands on activities is envied by this high school teacher. There are many pre-service teachers and new teachers out there that could definitely benefit from your experience.

Coming in January, actually January 30 and 31, the MCTM-MSTA Leadership Conference will be held in Bozeman. Contact Angel Greenley-Zickefoose for details at greenleya@billings.k12.mt.us. There are a limited number of participants and the conference is filling up fast. We are continuing with the Indian Education for All theme again this year. It looks to be an exciting conference!

Be thinking of people that you would like to nominate for the Dean Preble Award again this year. Nominations are due in June but can be sent in any time. Nominate now while you are thinking about it. All the pertinent information is on the MCTM website at www.montanamath.org. You will also find information about the Professional Development workshops that will be offered this summer as well as the first ever MCTM Sponsored Math Coach Retreat that will be held on February 20 and 21 at Canyon Ferry. The presenters have much combined experience as coaches and are pretty entertaining as well.

Don't forget about the upcoming elections in March and April. It may not be as exciting as what we experienced these last few months, and the candidates may not have the financial backing or the colorful rhetoric as those in the November election, but they are an impressive group of people. Please honor their willingness to run by voting! I suppose it is a little early to talk about the election but I thought I would bring it up while voting is on your mind!

A heartfelt thank you to all the teachers involved in the Standards Revision. I know that it is difficult to give up the time in your classroom and with your family but this revision is incredibly important to all of us. We appreciate your hard work and commitment to excellence in math education for the state of Montana.

With Thanksgiving in a week or so and Christmas right around the corner I would like to wish you all Happy Holidays!! Enjoy your classrooms, your family, and each other.

Submitted by Lisa Wood, MCTM President



Aunt Sally

Dear Aunt Sally,

I am solving inequalities and got to the part where we are multiplying both sides of the inequality by a negative number. I am having trouble coming up with a good explanation why the sign flips (reverses). "Just because it works" is not a good reason for me. Do you have a better explanation?

Signed,
Mrs. B.

Dear Mrs.,

When I explain inequalities such as " $2 < 4$ ", I say that two is less than four because two is on the left side of four on the number line, therefore " $x < 4$ " means x is some number on the left side of four on the number line. When I explain multiplying by negative one I explain that when we multiply a number by negative one the result is the opposite of the original number. Opposites are the same distance from zero on the number line but on opposite sides of zero. When we multiply a number by negative one it translates the number to the opposite side of zero but remains the same distance from zero.

If " $x < 4$ ", then x is on the left side of four on the number line and when we multiply both sides of the inequality by negative 1, both the x and the four translate to the opposite side of zero (the same distance). If x was on the left side of four, it is now on the right side of four. Therefore the opposite of x is greater than negative four ($-x > -4$). This entire explanation can be made using "absolute value" instead of distance from zero but the first explanation is more visual for a younger group of students. Try doing this with several examples on a number line and you should see how this works. You can extend this explanation to multiplying both sides by other negative numbers.

*Signed,
Your Dear Aunt Sally*

Dear Aunt Sally,

I was just minding my own business and teaching my math classes when I got promoted to the "Math Coach" for my school. There is not a description for my new position but I do want to do a good job. Where can I get more information on what a "math mentor" or "math coach" does to improve their school?

Signed,
Coach Matty Mattix

(Continued on page 5)

Lesson Plans

Complete lesson plans are available at www.montanamath.org

K-6

Mathematics Lesson Plan Grade 1

Book: *Her Seven Brothers*

by Paul Goble

Created by Samantha Grant

Students will listen and discuss the book *Her Seven Brothers* by Paul Goble. As a group we will count how many shirts and moccasins the girl makes for her brothers in the north. As a group we will do examples of one digit addition and see if we can do addition with the book. Students will draw a picture of the girl and her seven brothers' shirts and moccasins. The students will show how to count by 2's and do one digit addition on how many shirts and moccasins each brother got.

Middle School

Mathematical Lesson Plan Grade 6

Eating from Nature

Created by Ann-Marie Sukut

Students will understand how native plants (bitterroot) were important to Indians of Montana. They will discover how customary units of capacity are converted and how to use graphs to compare the ingredients in a recipe at their smallest capacity unit.

High School

Mathematics Lesson Plan Grade 10

Circles in Native American Culture:

Medicine Wheels

Created by: Marcia Welliever

Students will understand how the parts of a circle relate to each other and to the whole. The students will be able to find the radius, diameter, circumference and area of a circle. They will name the parts of a circle and find their measurable attributes and use ratio and proportion or derived measurements to answer problems involving circles.

NCTM Representative Report

Submitted by Lisa Scott

Hi! I am excited to serve you as your NCTM Representative. I would like to remind you about a couple of opportunities provided by NCTM.

E-Workshop Series

Gather your colleagues and get ready to share ideas with fellow teachers around the globe. These interactive 90-minute professional development e-workshops focus on a specific math topic and provide an overview of grade-band expectations as defined in NCTM's *Principals and Standards*. Activities and tips for engaging students are provided, as well as a follow-up session to discuss the impact of the activities on student learning. Each two part e-workshop includes three hours of standards-based content that you can immediately apply in your classroom-all for just \$149.00/site. Visit www.nctm.org/eworkshops for more information and to register.

MET Grants, Scholarships, and Awards

NCTM's Mathematics Education Trust (MET) encourages you to apply for MET funds to help you meet your professional goals: attend conferences and seminars, conduct research or school in-service training in mathematics, develop classroom activities, create lessons and materials, take graduate courses and participate in professional development activities. The application deadline for most MET grants, scholarships, and awards is November 14, 2008. For more information visit www.nctm.org/met.aspx.

NCTM 2009 Annual Meeting and Exposition

Washington DC - April 22-25, 2009 Equity: All Means All

Join NCTM at the Walter E. Washington Convention Center in Washington, DC on April 22-25, for the NCTM 2009 Annual Meeting! Learn from over 800 sessions, network with teachers from around the world, and explore the NCTM exhibit hall. This is one professional development event you can't afford to miss! Check the website regularly for updates and to learn more about the conference. <http://www.nctm.org/annual.aspx>

with Bill Hayne and implementation of this summer's IEFA Lesson program. Contact Lisa Scott for questions:

scottl@billings.k12.mt.us .

"Math Coach Retreat"(February 20-21, 2009): Are you a math coach? Do you ever wonder what your role should be or look like? Do you need support from other and want

News from Jean Howard, Mathematics Curriculum Specialist

Montana Mathematics Standards Revision Team met November 14-16 with great success. The incredibly talented group of 30 include k-12 classroom teachers, administrators, and higher education educators tackled the first task of determining how many and what the standards should be. They examined a plethora of resources as well as take to heart the feedback from business, school administrator, and educator focus groups. Rest assured there is a thoughtful passionate group working together to revise focused coherent and useable standards for everyone. The group will be meeting again December 12-14, January 16-18, and February 27- March 1.

Please save the date! February 19-20, 2009 will be the State of Montana Mathematics Education Forum in Helena. The forum will bring K- College together to communicate and collaborate in order to collectively create the best Montana mathematics education for all. Contact Jean Howard, jhoward@mt.gov or 406-444-0706, if are interested in receiving an invitation to this event.



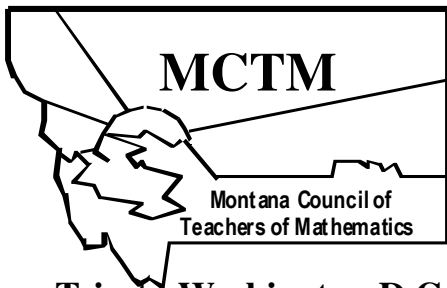
MCTM Board of Directors Update

The MCTM Board of Directors and membership would like to welcome the following wonderful people to serve for the board:

Renee Floyd, Secretary and Director Region I
 Marcia Welliever, Director Region IV
 Verne Schlepp, Director Region V
 Laurie Enebo, Director Region V
 Lisa Wood, President
 Lisa Scott, Past-President

We would like to say thank you for all your hard work and time serving for the board to the following people:

Deanna Reynolds, Director Region V
 Angel Greenley-Zickefoose, Secretary and Director Region IV
 Tony Riehl, Director Region IV
 Lisa Wood, Director Region IV
 Jenny Luebeck, Director Region III



Win a Trip to Washington D.C. for the NCTM Convention!

MCTM Membership Drive

MCTM is hosting a membership drive. Every member that recruits a new member will be entered twice into a drawing for a trip to the NCTM Conference in Washington D.C. from April 22 to 25, 2009. (See www.nctm.org for more details about the conference.)

Anyone who renews their membership, has a ten-year membership or a life-time membership will be entered once.

The winner will receive paid registration at the NCTM member rate of approximately \$200, four nights at a hotel at approximately \$170/night, an airline ticket estimated at \$500 and food expenses of \$25/day for four days. The total prize is not to exceed \$1500.

Members may copy a registration form for membership to MCTM and hand it out to their colleagues. New members need to write your name on the application and you will be entered into the drawing two times for each new member you recruit. The new member will be entered once for their new membership.

The winner of the trip to Washington D.C. will be drawn at the Leadership Conference in Bozeman on January 31, 2009. The winner and an alternate winner will be selected at random. If the winner is unable to attend the conference, the alternate winner will attend in their place. The prize is not transferable.

Any questions about the contest may be sent to Lisa Scott, MCTM Past President, at scottl@billings.k12.mt.us.

Aunt Sally (cont. from page 2)

*Dear Matty,
MCTM is offering a retreat for math coaches to learn from other coaches and to form a professional support group. For more information go to: www.montanamath.org.*

*Signed,
Your Dear Aunt Sally*

Dear Aunt Sally,
I teach in a small town in Montana and my grandmother thinks that she recognizes your photo. Did you teach math in eastern Montana in the 1960s?

Signed,
Grand Daughter

*Dear Grand,
I taught in the 60s, the 70s, the 80s, the 90 and now the zeroes. I have taught in two different centuries and in 5 different decades. They keep telling me I've got a replacement coming, but no sign of a replacement yet.*

*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/.

MCTM Membership Report

MCTM currently has 395 members. 142 people have renewed or joined and are eligible for the drawing for a trip to NCTM conference. Please be sure to check your membership status. If you know of someone who thinks they should be receiving a newsletter and isn't, have them contact Pam Koterba at pkoterba@winifred.k12.mt.us

MCTM Membership Form

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

 Phone Number: _____
 Email: _____

Annual Dues (January - December)	
<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

Opportunities at the Montana Learning Center

A new camp program is being planned for incoming 9 - 11 graders during summer 2009 at the Montana Learning Center at Canyon Ferry Lake (MLC): *Outdoor Adventures in Mathematics and Science*. In the preliminary planning process, activities may include a river float, backpacking, swimming and exploration involving application of science and math in nature. Two separate one-week sessions will each accommodate 8 girls and 8 boys. Scholarships of \$100 are available as well as work/study money earning opportunities.

Outdoors Adventures in Mathematics and Science builds on the already existing summer camp programs which include: *Innovations in Math & Science* (incoming 9 - 10 graders) *Young Naturalist Adventures* (two sessions: incoming 4 - 5 graders; incoming 6 - 7 graders) *Camp Discovery* (incoming 1 - 3 graders)

More details on dates, activity descriptions, instructors and costs will be available in the next MCTM Newsletter. Camps will take place in June and July. Teachers are encouraged to nominate students for a camp by e-mailing the following information:

Student name & current grade level
Parent name
Parent contact address
Nominating Teacher name
School name

E-mail to: cbock@montanalearning.org

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MLC is searching for a person with a teaching and/or education administrative background who would be willing to perform duties associated with the position of Executive Director in exchange for living accommodations on the MLC campus at Canyon Ferry Lake. Those considerations could include: house, utilities, phone, and Internet connection. Contact: cbock@montanalearning.org or call 406-475-3638.

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The MLC Board welcomes its newest member: Beth Thomas, science teacher - Great Falls Public Schools. Dr. Gerry Wheeler, former NSTA Executive Director, has agreed to serve on the MLC National Advisory Board. A heartfelt "Thank You" is extended to Dr. Rick Billstein, UM Department of Mathematical Sciences, who has served on the MLC Board since 2004 and will continue to work with MLC as a member of the National Advisory Board.

Access the latest MLC Newsletter and other news at: <http://www.montanalearning.org>.

A Problem –Based Approach to Learning and Teaching Summer 2008 PDA Scholarship Winner

By: Debbie Briggs

The many useful ideas which were presented in the class "A Problem-Based Approach to Learning and Teaching" were great but two in particular come to mind. Instead of having us introduce ourselves by going around the room, Kathy Hill had us get with our table partners, come up with a Venn Diagram, and write two main points that best described us. The rest of the class did the same thing with theirs. Then we came up with some statements about ourselves and the diagrams. For example: 13 out of 13 people like to read or 12 out of 13 are married, etc. We were then given four strips of long construction paper. The activity was called "Conditions for Learning". On two of the strips we needed to answer the question: "When solving problems what do I want to know about myself as a learner of mathematics?" As a table group we needed to come up with two ideas which we thought were important. On the two other strips of paper we needed to respond to the statement: "I don't want to hear..." This activity gave us all a chance to get to know each other.

Another interesting useful idea was seeing shapes from different perspectives and seeing the relationships between polygons. The class was given a computer and asked to go to the website: www.geogebra.org. We were given a complete instruction sheet with directions as to what to do. This program is great because it will also tell you the measurement of angles. Ms. Hill modeled for us what we needed to do while we were on the computers. We needed to make a quadrilateral, pentagon, hexagon, octagon and triangle. The lesson works for the novice, average, and advanced student. After the class had finished with their polygons, they were printed out and we prepared a group presentation to share our findings. This is a partner activity and gave each group a chance to present their findings. I liked this lesson because I think technology is so important for students. It gives them a chance to explore and learn something new.

I would highly recommend this class for any elementary teacher because it gives that person tools to use in their own classroom. The material is wonderful and I am really excited to use some of the ideas I learned with the students I teach.



Leadership Conference 2009

Building a better future for Montana's children
January 30-31, 2009
Comfort Inn - Bozeman, MT

CONFERENCE REGISTRATION FORM [registration is on a first come first serve basis]

Name: _____ Nickname: _____

Mailing Address _____ Home _____ School _____

City _____ State _____ Zip Code _____

School City _____ Email _____

Work Phone _____ Home Phone _____

Please indicate your grade level(s) and subject(s):

Elementary Middle School High School College Math Science

Nonmember Rates:

Conference \$150.00

Includes membership to a professional organization. Choose one from the list below:

MCTM/MSTA Member Discount Rate:

Conference..... \$125.00

Please check all that apply:

[] Current member of MCTM

[] 2 year membership to MCTM

[] Current member of MSTA

[] 2 year membership to MSTA

[] 1 year membership to MCTM and MSTA

Meals:

Registration costs include Lunch & Hors doeuvres on Friday. For an accurate count it is important that you indicate your intentions for both meals.

[] I intend to eat Lunch on Friday

[] I intend to attend the Social Hour/Hors doeuvre on Friday [dinner on your own]

Please list any food allergies or special dietary needs: _____

Method of Payment:

[] Check (made payable to Leadership Conference)

[] Presenter, Registration waived

[] My district will be paying by P.O. [] MSTA/MCTM Board Director

Cancellations after January 3rd will be charged full conference price.

Please return this form to:

Angel Greenley

415 N. 30th, Room 234 - Billings, MT 59101

Work: 247-3818 Fax: 255-3571 E-mail: greenleya@billings.k12.mt.us

MCTM NEWSLETTER
Billings Public Schools
415 N. 30th Room 234
Billings, MT 59101

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2008-2009 MCTM Board of Directors

		<u>Grade</u>	<u>Region</u>			<u>Term</u>
Lisa Wood	Billings	9-12		President	woodl@billings.k12.mt.us	05-08
Lisa Scott	Billings	5-8		Past—President	scottl@billings.k12.mt.us	05-09
Terri Dahl	Great Falls	9-12	II	Director	terri_dahl@gfps.k12.mt.us	06-09
David Erickson	U of M	13-16	I	Director	David.Erickson@mso.umt.edu	06-09
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Pam Koterba	Lewistown			Membership	pkoterba@winifred.k12.mt.us	
Cliff Bara	Troy			Treasurer	cliffbara@hotmail.com	

Editor: Angel Greenley 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 Greenley at Billings Public Schools, 415 N. 30th, Room 234, Billings, Montana 59101 or e-mailed to greenleya@billings.k12.mt.us. All entries will be reviewed.