



MONTANA MATHEMATICS

A PUBLICATION OF MONTANA COUNCIL OF
TEACHERS OF MATHEMATICS

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Math and Science Leadership Conference

The 2012 MSTA/MCTM Leadership Conference is just around the corner and we are so excited for the conference this year! Our theme is Integrating Technology into the Classroom and we have an awesome line-up of presenters on the agenda.

Everyone is welcome to the Leadership Conference, whether you have been attending since it started (and there a few of you out there) or whether this is your first time, all are welcome! It is a great opportunity to learn new ideas for your classroom (K-16), network with other teachers, and build new friendships in the math and science community!

Paul Anderson, 2010 Montana Teacher of the Year, will be our keynote and he will talk about how he uses technology in the high school to engage students in learning. We also have sectionals on Moodle, MovieMaker, Excel, iPads for Teaching and Learning, Webinars, Animoto, The World of Web 2.0, Google Tools, and others. This year, to better accommodate different sectionals, there will be both 2 hour break out sectionals and 1 hour sectionals. We have presenters from all grade bands (K-16) and in both math and science! The “State of the State” address for both math and science is always a highlight.

The conference begins on January 27th and ends by noon on January 28th. The conference is held in Bozeman, MT at the Comfort Inn. The cost for attending is \$155 if you aren't currently a member of MSTA or MCTM (but don't worry, this price includes a membership to either organization), or \$125 for members. OPI renewal units are available!

Want more information? Check out the information on page 14 of this newsletter.

Ready to register? [Click here!](#)

We look forward to seeing you at the conference - and don't forget there are MCTM [Teacher Scholarships](#) available to help defray the costs!

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MCTM President's Message

Montana made a choice this month to seek excellence in mathematics education. The Board of Public Education approved the [2011 Montana K-12 Content Standards for Mathematics](#) on November 4 that contain all of the Common Core State Standards-Mathematics. Additionally, we added language to ensure our state constitution is met through inclusion of Indian Education For All. The task before us is to provide professional development for all K-12 teachers of mathematics on the changes that impact each classroom and to do this within a year's time, providing opportunity for all to see student success on the 2014-2015 common assessment in mathematics in grades 3-8 and one grade in high school. We join all but four states in this common endeavor that has the opportunity to both increase mathematics understanding of all Montana youth and demonstrate to other states we have excellence in teaching and learning mathematics.



In a poll by the [Politico/George Washington University Battleground Poll](#) of 1000 registered voters a few days after our historic adoption of these new standards, 75% responded that we as a nation were somewhat or strongly on the wrong track. Yes, there is no question our economy is unhealthy (23%) and the public feels we are “in a mess,” but, I claim we are on the right track in mathematics education. We must communicate this positive path to both our students and our communities. We must believe what we are doing to educate our youth is going to work. We must each learn a new a set of standards, roughly 38 standards per grade level, a total of almost 500 in K-12. We must begin implementing the teaching and learning of these standards with our existing textbooks but with changes to assure we able to meet our goals.

One strategy is to participate in professional development in the upcoming months. A session is planned in early December by OPI with over 300 participants in Helena. The [MSTA/MCTM Leadership Conference](#) in Bozeman 28-29 January 2012 still has room for you to register. A [summer Professional Development Academy](#) is scheduled at The Montana Learning Center at Canyon Ferry Lake on June 25 – 26.

Additional strategies are to read more about the ways to change one's practice. [Making it Happen: A Guide to Interpreting and Implementing Common Core State Standards for Mathematics](#), an NCTM publication is one good start. Filled with information and direct links to other published supporting materials, the implementation and interpretation charts for the new 2011 Montana K-12 Content Standards in Mathematics for each grade level connect the mathematical practice standards to the NCTM publications *Principles and Standards*, *Curriculum Focal Points*, and *Essential Understanding* series. An excellent free webpage resource is found at <http://www.nctm.org/standards/mathcommoncore/>

Our challenge is clear: step forward, learn, and lead. We have excellent mathematics educators and we need to share these new directions and opportunities with all. Thanks for each doing your part; with you, we are on the right track.

David Erickson, President, MCTM

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Complete lesson plans are available at www.montanamath.org

Elementary Lesson Plan

Rounding

Grades 3-5

Submitted by [Mandy Bighorn](#), Newman Elementary, Billings Public Schools

Round whole numbers through the millions with the number line strategy as well as a few web based video tutorials and rounding game.

Middle School Lesson Plan

A Graphing Look at Rational Numbers

Grades 6 - 8

Submitted by [Jim Hirstein](#), The University of Montana - Missoula

Here is a new representation that uses the xy -coordinate graph to show the rational numbers. Since rational numbers are a/b where a and b are integers (with $b \neq 0$), the graph just has dots at the points (x, y) where both x and y are integers. Then each graph point (x, y) is identified with the rational number y/x . The examples go on to show how to find rational number approximations to square roots that are irrational.

High School Lesson Plan

M&M's Anyone?

Submitted by [Lisa Wood](#), Billings Senior High School

Just think of it, having just left Walmart and arrived home, you open your brand new fresh bag of M&M's. With no kids around you spread them out on the table, eat your favorite colors first, and just enjoy! Then it hits you. . . the mathematician in you begins to ponder...**what would happen if I spilled my bag of M&M's? Would all the M's land up or down? Is there any identifiable 'pattern' that may exist?** The joy of it all has been intercepted by your mad desire to 'find out' the answer to this and many other questions.

First look at the shape, spread, what we may expect to see, etc, as well as the 'type' of distribution to see if there is any recognizable pattern.

This activity explores binomial distributions.

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Common Core-ner

- The K-5 standards provide students with a *solid foundation in whole numbers, addition, subtraction, multiplication, division, fractions and decimals*—which help young students build the foundation to successfully apply more demanding math concepts and procedures, and move into applications.
- The standards stress not only procedural skill but also conceptual understanding, to make sure students are learning and absorbing the critical information they need to succeed at higher levels - rather than the current practices by which many students learn enough to get by on the next test, but forget it shortly thereafter, only to review again the following year.
- Having built a strong foundation K-5, students can do hands on learning in geometry, algebra and probability and statistics. Students who have completed 7th grade and mastered the content and skills through the 7th grade will be *well-prepared for algebra* in grade 8.
- The middle school standards are robust and provide a coherent and rich *preparation for high school mathematics*.
- The high school standards call on students to *practice applying mathematical ways of thinking to real world issues and challenges*; they prepare students to think and reason mathematically.
- The high school standards set a *rigorous definition of college and career readiness*, by helping students develop a depth of understanding and ability to apply mathematics to novel situations, as college students and employees regularly do.
- The high school standards *emphasize mathematical modeling*, the use of mathematics and statistics to analyze empirical situations, understand them better, and improve decisions. For example, the draft standards state: “Modeling links classroom mathematics and statistics to everyday life, work, and decision-making. It is the process of choosing and using appropriate mathematics and statistics to analyze empirical situations, to understand them better, and to improve decisions. Quantities and their relationships in physical, economic, public policy, social and everyday situations can be modeled using mathematical and statistical methods. When making mathematical models, technology is valuable for varying assumptions, exploring consequences, and comparing predictions with data.”

Websites that help explore the Common Core State Standards

[K - 5 Math Teaching Resources](#): This site provides an extensive collection of **free resources, math games, and hands-on math activities** aligned with the Common Core State Standards for Mathematics. Our free printables are suitable for use in Math Centers, small group or whole class settings. Instructions for each activity are presented in large print on a task card in child-friendly language to enable students to work on tasks independently after a brief introduction to the task.

But what do the standards mean?

The North Carolina Department of Education has unpacked the Common Core Math Standards for different grade levels, with the intent of ensuring that educators understand specifically what the new standards mean a student must know, understand and be able to do. Click on the grade level link below to see the Common Core Math Standards unpacked at your grade level:

Kindergarten Standards Unpacked	1st Grade Standards Unpacked	2nd Grade Standards Unpacked
3rd Grade Standards Unpacked	4th Grade Standards Unpacked	5th Grade Standards Unpacked
6th Grade Standards Unpacked	7th Grade Standards Unpacked	8th Grade Standards Unpacked
Algebra Standards Unpacked		

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News from OPI Math Curriculum Specialist

November 4, 2011 the Montana Board of Public Education adopted the Montana Common Core Standards for Mathematical Practice and Mathematic Content. Information and resources are updated continually at <http://opi.mt.gov/MontanaCommonCoreStandards>.

Montana Common Core Standards and Assessments



Welcome to Getting Ready, a site with information and resources for transition to the Montana Common Core Standards and The Smarter Balanced Assessment Consortium.

MONTANA COMMON CORE STANDARDS

English Language Arts & Literacy in History/Social Studies, Science, and Technical Subjects

[Montana Common Core Standards English Language Arts and Literacy in History/Social Studies, Science, and Technical Subjects Grade-Level K-12](#)

[Montana Common Core Standards English Language Arts and Literacy in History/Social Studies, Science, and Technical Subjects Grade-Band K-12](#)

[Appendix A: Research Supporting Key Elements of the Standards Glossary of Key Terms](#)

[Appendix B: Text Exemplars and Sample Performance Tasks](#)

[Appendix C: Samples of Student Writing](#)

Mathematics

[Montana Common Core Standards Mathematical Practice and Content Grade-Level K-12](#)

[Montana Common Core Standards Mathematical Practice and Content Grade-Band K-12](#)

[Appendix A: Designing High School Mathematics Courses Based on the Common Core State Standards](#)

CONTACT INFORMATION

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NCTM Representative's Report

MATHEMATICS COMMON CORE COALITION (MC³)

NCTM and six other organizations have formed this coalition to ensure the successful communication, interpretation, implementation, and assessment of the Common Core State Standards for Mathematics (CCSSM). In addition to NCTM, the members of the coalition are the Association of Mathematics Teacher Educators (AMTE), the Association of State Supervisors of Mathematics (ASSM), the Council of Chief State School Officers (CCSSO), the National Council of Supervisors of Mathematics (NCSM), the Partnership for the Assessment of Readiness for College and Careers (PARCC), and the Smarter Balanced Assessment Coalition (SBAC). The coalition has set up a website with information about the seven coalition organizations and links to other information about the CCSSM.

AVAILABLE ELECTRONIC SERVICES

NCTM is always seeking new and better ways to serve its members. Services available include:

- ***E-seminars*** – 1 hour of professional development – free for members, \$79 for non-members
- ***Rebate*** – MCTM can earn \$5 per new NCTM membership and \$3 per renewal if the member signs up online and selects the Affiliate to receive the rebate.
- ***E-Membership*** – Each new e-member is entitled to 10 current and/or archived downloads from his or her selected journal.

[Individual E-Memberships](#)

[Student E-Memberships](#)

- ***iPhone Application*** – Download the free iPhone app and keep track of NCTM Activities by using your cell phone.

LEGISLATIVE INFORMATION

- NCTM supports investing in teachers at every stage of their development and welcomes the emphasis that the Obama administration is placing on early childhood education and the growing interest in common standards and assessments. NCTM has identified several legislative priorities for the first session of the 112th Congress and supports them in broader contexts. To read about these [legislative priorities](#)
- [Legislative updates](#) are given on the NCTM website twice-monthly. Read a summary about policy developments and grant opportunities in math education.
- [Advocacy information](#) can also be found on the website.

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NCTM POSITION STATEMENT

A Position of the National Council of Teachers of Mathematics

Question

What should schools teach about the metric and the customary systems of measure?

The International System of Units (SI) is the internationally recognized standard metric system. Worldwide, SI is the only measurement system used in science and the predominant system used in commerce. The United States is one of only three countries that have not officially adopted SI. The other two, Myanmar and Liberia, reportedly use SI as the predominant system in daily life and commerce. Among the countries that have officially adopted SI are some, such as the United Kingdom, that have retained some of their non-metric units of measure in everyday life.

Both NCTM Standards and the Common Core State Standards for Mathematics describe the need to organize curriculum to ensure that students become proficient in measurement. Students first need to develop a concept of the attribute to be measured (e.g., length, mass, volume, time, temperature) by comparing and ordering objects solely on the basis of that attribute. Then they should devise and apply nonstandard units to compare and order objects indirectly on the basis of the attribute. Finally, they should be introduced to standard units of measure (both SI units and non-metric units of measure commonly used in the United States) as a matter of (1) communication, ensuring a common understanding of the quantity of the attribute measured by all who use the same system of units, and (2) reliability, ensuring the equivalence of repeated measures of an object's attribute.

The learning goals for students include—

- knowledge of and ability to use referents, or benchmarks, in estimation;
- ability to make a reasonably accurate measurements of an attribute by using standard tools;
- ability to assess and select an appropriate unit for the type and size of the attribute being measured;
- ability to convert flexibly and fluently among commonly used units *within* a measurement system;
- knowledge of the role and implications of accuracy and precision in measurement; and
- ability to apply and operate on units of measure flexibly and fluently in the solution to problems.

Happy Holidays!

Lisa Wood

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Montana Council Teachers of Mathematics Board Meeting Update

October 19, 2011-Missoula, MT

The Board continued to analyze the budget and accounts for the past year and worked on some ideas for increasing MCTM membership and established a social networking group on [Facebook](#). We continue to encourage attendance for Leadership Conference in January and the Professional Development Academy for the summer of 2012. The next MCTM Board Meeting will be held January 26, 2012 in Bozeman, Montana.



Montana Council Teachers of Mathematics Annual Board Meeting

October 20, 2011

The annual MCTM Meeting was held in Missoula this year highlighted by the presentation of the Dean Preble awarded to Ellen Rose. Regional winners for the two-year membership and professional development scholarships were also announced. [Angel Zickefoose](#) is currently the contact for the upcoming Professional Development Academy that will be held in June at the Montana Learning Center. Please check the upcoming electronic newsletter for regional elect nominees. Upcoming MCTM sponsored events include the Leadership Conference held in Bozeman, January 27-28, with a continuation of technology focus. If you are interested in test writing for the state Math Contest please contact [Linda Horst](#), it will take place the last weekend of June in Billings, MT.

Submitted by Mandy Bighorn, Secretary

Membership Report

Hello all! It was nice to see many of you at the conference in October. Thanks to those of you that renewed your membership at that time and welcome to our many new members. At this time we have 398 MCTM members. There are a few of you that are overdue and some that are due in January. I will be sending our reminders in the next couple of months. Please encourage your colleagues to consider joining MCTM and also NCTM. Have a wonderful Holiday Season!

Submitted by Lisa Wood

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MCTM TEACHER SCHOLARSHIP

MCTM has put aside \$2000 per year for members to attend math conferences. The scholarships are \$200 for instate math conferences and \$400 for out of state math conferences. The intent of the money is to encourage our membership to participate in conferences gaining valuable teaching techniques and learn some of the latest research. MCTM wants to help defray some of the expenses in attending these conferences. If you are interested in going to a math conference in 2012, now is the time to start looking and put your application in for a scholarship.

Any teacher who is an MCTM member is eligible to receive the scholarship except for current MCTM Board members unless that member received an MCTM scholarship in the previous year. The application for a scholarship must be submitted at least **thirty** calendar days prior to the starting date of the conference. The recipient 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.

If you are interested log onto: montanamath.org for an application. 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.

Remember also that MCTM is offering an "[Early Career](#)" scholarship worth \$500 for teachers with 5 yrs or less experience. This scholarship will be given to one K-12 Montana math teacher each year to attend either the K-6 or the 7-12 MCTM Professional Development Academy (PDA) during the summer. This scholarship may not be used for any other convention or conference. If you know someone who is eligible for this scholarship, encourage them to apply. If you are eligible – apply! What a great way to enhance your learning and teaching with MCTM money. Please look on the MCTM website for additional info and requirements.



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“X” Marks the Spot

I am always looking for new ways to have my students practice their computation skills. Currently I am teaching out of a great curriculum that has rich problems for discovery and learning of complex mathematics, but sometimes I just need some old fashion practice for my students. The difficult part is finding practice that students will invest in because it is not just busy work. This year at the Northwest Math Conference I found a gold mine of activities when I attended a workshop hosted by Brad Fulton of Teacher to Teacher Press.

Teacher to Teacher Press is what the title implies, two full time teachers sharing good math activities that help and interest students. If you visit their website (tttpress.com), you can see that they have a great many topics and ideas. The activity I am going to use in my classroom to engage students is called “X” Marks the Spot.

It is kind of like a puzzle where you have to fill in the missing numbers using two simple rules, the top number is the product of the two side numbers, and the bottom number is the sum of the two side numbers. See the diagram below.

$$\begin{array}{ccc} & 1 & \\ 8 & \times & 2 \\ & 10 & \end{array}$$

$$\begin{array}{ccc} & 9 & \\ 3 & \times & 3 \\ & 6 & \end{array}$$

$$\begin{array}{ccc} & ab & \\ a & \times & b \\ & a+b & \end{array}$$

This puzzle can be varied by giving students the first two numbers in different locations. For example, if you give students the two side numbers, then they will practice finding the product and sum. If you give them the top number and a side number then they have to find the quotient first. If you give them the bottom number and a side number, then they have to find the difference. Finally, if you give them the top and bottom number, then they have to use guess and check to find the right combination.

$$\begin{array}{ccc} & & \\ 7 & \times & 6 \\ & & \end{array}$$

$$\begin{array}{ccc} & 18 & \\ 2 & \times & \\ & & \end{array}$$

$$\begin{array}{ccc} & & \\ & \times & 4 \\ & 9 & \end{array}$$

$$\begin{array}{ccc} & 1 & \\ & \times & \\ & 7 & \end{array}$$

What I like about this puzzle is that it helps reinforce the idea that subtraction is the inverse of addition, and division is the inverse of multiplication. This is an important understanding when it comes to solving algebraic equations. This puzzle can be adapted further by using integers, decimals, or fractions. It can even be used to help factor polynomials.

If you want to see lesson and worksheet examples, you can find the workshop handout at the Teacher to Teacher Press website. The name of the workshop was Using Graphic Organizers to Teach Algebra. When you are at the site, check out some of the other topics. I promise you will find something you can use in your classroom.

Submitted by By Kasey Ward, MCTM Scholarship Winner

Montana Learning Center at Canyon Ferry Lake (MLC) News Notes

“Learning at the Lake”

MLC an Excellent Choice for Holiday Giving

Please consider supporting MLC STEM programs for adults and kids, and facilities updates through a holiday donation. Also, a wonderful holiday gift is a donation that honors someone. The needs are many: student scholarships, curtains for windows, roll-down, soundproof partition for the dining hall pass-through window, commercial coffee maker, osprey webcam, expanding the meeting area in the classroom building, dock renovation - and the list goes on. Please mail a donation to: Montana Learning Center, 7653 Canyon Ferry Road, Helena, MT 59602 or donate directly via credit card at www.montanalearning.com.



B&B Lesson Study/STEM grant teachers talk “education even at breakfast (Oct. 2011)



Townsend 5th graders (Cecelia Hazelton School) are attentive during a teaching moment (Oct. 2011)

Science Fair Projects Camp

The Montana Learning Center at Canyon Ferry Lake will be initiating a Science Fair Projects Camp in July, 2012. Goals are to:

- Help students explore science project ideas
- Jump-start students’ development of a specific project
- Inform students about science fair opportunities and procedures
- Connect students with a mentor

Dates: July 29 - Aug. 2

Campers: Incoming Gr. 6 - 10 students (Sept. 2012)

Instructors: Deb Wines (Billings Central Catholic HS); Andy Valkenburg (Senior Analyst, Energy Labs - Helena, Billings, ...); Don Hurd (physicist/mathematician - Helena)

Silent Auction Donations Appreciated

The Montana Professional Teacher Foundation(MPTF)/Montana Learning Center(MLC) Silent Auction fundraiser was held at the Missoula Hilton Gardens Inn, 4 - 6 p.m. Oct. 20, preceding the Montana Teacher of the Year banquet. It was a dignified and elegant affair. Thanks to those of you who donated items. The pre-service methods students of Ke Norman (UM Mathematical Sciences; MLC Board) played prominent roles in assisting with set-up, bidding process, and distribution of winner items. We look forward to next year's event to be held in conjunction with MEA-MFT October 18 - 19 in Billings.

Montana Learning Center at Canyon Ferry Lake (MLC) News Notes

“Learning at the Lake”

MLC Board Members Honored

MLC Board members were prominent "players" at the MPTF Teacher of the Year banquet held in an adjacent ballroom following the auction. Paul Andersen (Bozeman biology teacher) shared his "lessons learned" from people he met during the past year as 2011 Montana Teacher of the Year. Beth Thomas (Great Falls middle school teacher) was introduced and made heartfelt comments as one of three 2012 Finalist. Craig Beals (Billings science teacher) and Melissa Romano (Helena kindergarten teacher) were awarded 2011 MEA-MFT scholarships to attend the conference.

Note: Tom Pedersen, 2012 T-O-Y and Helena Capital biology teacher, has regularly been an instructor in the Youth Forrest Mentoring Program held at MLC each summer under the direction of Liz Burke, US Forrest Service educator.



80+ years old and painting a roof dormer - no problem for these Elderhostel participants (Sept. 2011)



Qwest Math & Science Leadership Group #2 learning, planning and sharing (Oct. 2011)

SAVE and PLAN for THESE 2012 DATES

- April 13 - 15* Springtime in the Rockies STEM Conference
- June 24 - 26* MCTM Professional Development Academy (K - 12 teachers)
- July 23-26; July 30-Aug. 2* Camp Discovery (Gr. K - 3)
- July 22-26; July 29-Aug. 2* Young Naturalist Adventures (Gr. 4 - 6)
- July 22 - 27* Innovations in Math and Science (Gr. 7 - 9)
- July 27 - 29* Family Camp (ALL ages)
- July 29 - Aug. 2* Science Fair Projects Camp (Gr. 6 - 10)
- Sept. 2 - 8* Roads Scholar/Elderhostel Service Project (39 years + ...)

THANKS, MCTM!!!

The MLC Board wishes to thank the MCTM Board and membership for its enthusiastic support over the years of many activities involving MLC including: organizing meetings and workshops, volunteering for work projects, providing media coverage and committing direct financial support.

Jokes and Quotes

Quote of the Month:

"I could be bounded in a nutshell and count myself a king of infinite space." **William Shakespeare**

November Jokes:

Thinking "Inside" the box...

An engineer, a physicist, and a mathematician are trying to set up a fenced-in area for some sheep, but they have a limited amount of building materials. The engineer gets up first and makes a square fence with the material reasoning that it's a pretty good working solution. "No no," says the physicist, "there's a better way." He takes the fence and makes a circular pen showing how it encompasses the maximum possible space with the given material.

Then the mathematician speaks up: "No, no, there's an even better way." To the others' amusement, he proceeds to construct a little tiny fence around himself then declares:

"I define myself to be on the outside."

And the conclusion is...

Ten percent of all car thieves are left-handed,

All polar bears are left-handed,

∴ If your car is stolen, there's a 10 percent chance it was taken by a Polar bear!

All dogs are animals,

All cats are animals,

∴ All dogs are cats!

A total of 4000 cans are opened around the world every second,

Ten babies are conceived around the world every second,

∴ Each time you open a can, you stand a 1 in 400 chance of becoming pregnant!

Submitted by Marie Boothe

MCTM Membership Form

<input type="checkbox"/> New Member	<input type="checkbox"/> Renewal	Annual Dues (January - December)	
Grade Level: Check all that apply		<input type="checkbox"/> Regular (1 year)	\$20
<input type="checkbox"/> Elem	<input type="checkbox"/> MS	<input type="checkbox"/> Regular (2 years)	\$30
<input type="checkbox"/> HS	<input type="checkbox"/> College	<input type="checkbox"/> Regular (10 years)	\$150
Name: _____		<input type="checkbox"/> Life Time	\$200
Address: _____		<input type="checkbox"/> Student	\$10
_____		<input type="checkbox"/> Retired Educator	Free
Phone #: _____		<input type="checkbox"/> MCTM & MSTA	\$40
E-mail: _____			

Send form to:

Lisa Wood, MCTM Membership Chair

woodl@billingsschools.org

2963 Spring Meadow Court

Billings, MT 59102



You are invited to attend the 2012 Math and Science Leadership Conference held in Bozeman, Montana January 27th and 28th. In order to broaden the leadership network that exists in Montana, you are encouraged to invite and bring a fellow educator or administrator.

Registration will begin at 7:45 AM on Friday, January 27th. The conference will start at 8:15 AM and conclude by 12:00 PM on Saturday, January 28th. The conference will be held at the Comfort Inn located at 1370 North 7th Ave., Bozeman, MT 59715. Rooms have been blocked for Thursday and Friday nights. Please contact the Comfort Inn at (406) 587-2322 to reserve a room in your name. Rooms are \$62.99 plus tax for a single room and \$69.99 plus tax for double occupancy. The reservations must be made by January 12, 2011 to assure the conference rate.

The cost for this conference is \$125 for MCTM/MSTA members. Registration for non-members is \$155 and includes a two-year membership to either MCTM or MSTA. The registration price includes breakfast both days and lunch on Friday. Renewal credits through OPI will be offered. **You can register by going to the MCTM website at www.montanamath.org and clicking on “Click Here to Register for Leadership Conference” or e-mailing Angel Zickefoose at zickefoosea@billingschools.org** *Registration is first come first served basis and will begin October 15, 2010.*

The topic of this year’s conference is Integrating Technology into the Classroom and the many free or low cost applications available in the math and science classroom. Paul Anderson, 2011 Montana Teacher of the Year, will be our keynote and discussing how he integrates technology into his high school science classroom to engage students. In addition, members of the Montana math and science community will be presenting on a variety of technology topics such as Connecting Content Standards, Moodle 101, Movie Maker, Introduction to Excel, iPads for Math and Science, Animoto, Welcome to the World of 2.0, Tips, Tricks and Right Clicks, Google Tools, Top Tools for Teaching, Excel for Intermediate & Advanced, The Learning Classroom and lots more! We have presenters from all grade bands (K-16) and in both math and science! The “State of the State” address for both math and science is always a highlight.

The goals for the 2012 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.

If you have any questions, please contact Angel Zickefoose at the address and/or telephone number listed below.

Angel Zickefoose zickefoosea@billingschools.org 406-281-5084

2010-2011 MCTM Board of Directors

Member	School	Grade Band	Region	Title	E-mail Address	Term
David Erickson	University of MT	13 - 16		President	david.erickson@mso.umt.edu	2009 - 2013
Angel Zickefoose	Billings Public Schools	K - 8		President-Elect	zickefoosea@billingschools.org	2011-2017
Lisa Wood	Billings Senior	9 - 12		NCTM Rep	woodl@billingschools.org	2005 - 2011
Cliff Bara	Troy High School			Treasurer	cliffbara@hotmail.com	
Jim Hirstein	University of MT	13 - 16	I	Director	hirsteinj@mso.umt.edu	2009 - 2012
Marcia Anderson	C.M. Russell High School	9 - 12	II	Director	marander@bresnan.net	2009 - 2012
Beth Burroughs	Montana State University	13 - 16	III	Director	burrough@math.montana.edu	2009 - 2012
Melissa Romano	Helena	K - 8	III	Director	mromana@helena.k12.mt.us	2010 - 2013
Laura Ascheman	Townsend	5 - 8	III	Director	lascheman@townsend.k12.mt.us	2011 - 2014
Mandy Bighorn	Newman Elementary Billings	K - 4	IV	Director	bighornm@billingschools.org	2010 - 2013
Rodd Zeiler	Laurel MS	5 - 8	IV	Director	rodd_zeiler@laurel.k12.mt.us	2011 - 2014

Editor: Angel Zickefoose

Montana Mathematics is a newsletter published for all member of the Montana Council of Teachers of Mathematics. The publication comes out 5 times/year and is free to all member 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@billingschools.org. All entries will be reviewed.

