



MONTANA MATHEMATICS

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Common Core Standards

The Common Core State Standards Initiative (CCSSI) is coordinated by the National Governors Association Center for Best Practices (NGA Center) and the Council of Chief State School Officers (CCSSO) to develop a common core of state standards for proficiency in English/language arts and mathematics for Kindergarten through grade 12. The standards define what students need to know and be able to do as they progress from kindergarten to grade 12. The standards are based on the College and Career Readiness Standards developed in 2009 to ensure students are college and career ready; they will graduate from high school able to succeed in introductory-level credit-bearing academic college courses and in jobs in the workforce. States will be asked to adopt the Common Core State Standards in their entirety. The state's standards must include the core in at least 85 percent of the state's standards in English language arts and mathematics.

Will Montana adopt the Common Core State Standards (CCSS)? Montana will follow the established policy set forth by the Montana Board of Public Education (BPE). Mathematics and English/Language Arts teachers representing K-12, postsecondary, and administrators from across the state have reviewed the drafts, drafted responses to the drafts, and presented information to the BPE. The most recent presentation was July 15 when a panel addressed the strength of the CCSS, the weaknesses or concerns of the CCSS, and the implications of adopting the CCSS in their district/school. The panel represented elementary, middle, and high school teachers from small and large districts. At the BPE September meeting, Superintendent Juneau will provide a recommendation that includes the reasons for adopting and/or consequences for not adopting the CCSS. Various methods will be used to collect information prior to the recommendation. One is the feedback from the survey which is on the Office of Public Instruction (OPI) Web site <http://keysurvey.mt.gov/survey/107148/1910/>. Another is an alignment study. This includes three parts; the alignment completed by out-of-state experts; comparison of Montana Content

Standards and the CCSS using the Survey of Enacted Curriculum tool; and the reports from the Achieve Gap Analysis Tool. Several teachers from across the state will complete the Achieve Gap Analysis Tool matching CCSS with Montana Content Essential Learning Expectations, August 11-13, 2010, at the Montana Learning Center at Canyon Ferry Lake.

If the BPE votes to adopt the CCSS, the established process for adoption will be followed. More details about the Common Core Standards can be found on the OPI Web site http://www.opi.mt.gov/Curriculum/Index.html#gpm1_7 and the Core Standards Web site. <http://www.corestandards.org/>

So should Montana adopt the CCSS? Let me know what you think.

Jean Howard, Office of Public Instruction
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President's Message



Congratulations! You're back for another year advocating for your students, continuing your own learning, and working with colleagues nationwide to improve mathematics education.

It's an exciting time for mathematics education, and you are part of it.

First, thank you for your time and efforts on behalf of your students. Providing each with meaningful mathematical tasks is often a thankless job, but, when our students can reason and make sense of the mathematics in their lives, we delight in knowing they will contribute positively to our future.

Second, I hope you can prioritize some time for your own learning this year. Please plan on attending the MEA/MFT 2010 Annual Conference in Helena October 21-22 http://www.mea-mft.org/educators_conference.aspx. We have an excellent program prepared. Additionally, there are other professional development opportunities this year, including the NCTM regional conference in Denver October 7-8 <http://www.nctm.org/conferences/content.aspx?id=25249> or the Northwest Mathematics Conference in Spokane October 7-9 <http://www.49thnwmathconference.org/>, the Montana Math and Science Leaders conference the end of January/first of February in Bozeman, the NCTM national conference in Indianapolis April 13-16, 2011 <http://www.nctm.org/conferences/content.aspx?id=25947>, and our own MCTM PD opportunities next summer (more to come on these summer opportunities). All provide opportunities to learn about new technologies and new developments in mathematics teaching, and I certainly encourage you to consider participation this year.

Third, national efforts to improve the teaching and learning of mathematics are at a peak. The Common Core State Standards (CCSS) for Mathematics <http://www.corestandards.org/the-standards/mathematics> have been adopted by 35 states as of August, most since the release of the new standards on June 2, 2010. Montana has formed several review teams to map the alignment between the CCSS and the Montana K-12 Mathematics Content Standards <http://opi.mt.gov/pdf/Standards/10ContStds-Math.pdf>. Preliminary reviews show a strong alignment between the two and an opportunity for increased learning of Montana students who meet the new CCSS (see related article in this newsletter). Additionally, the Montana Mathematics and Science Teacher Initiative (MMSTI) <http://mmsti.org/> continues to work with the Association of Public and Land-Grant Universities (APLU) <http://www.aplu.org/NetCommunity/Page.aspx?pid=584> to increase the number of students entering STEM disciplines.

Finally, a plea to you to encourage at least one other to join MCTM this year <http://www.montanamath.org>. If each one of us talks with another about the many benefits of MCTM membership (teacher scholarships (over \$2000 a year), student scholarships (over \$4000 a year), a network of professionals (over 350 currently), we could increase our membership and our professional community of colleagues. Again, welcome back, and congratulations!

David Erickson, President MCTM

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Lesson Plans

Complete lesson plans are available at www.montanamath.org

Middle School

Indian Education for All Lesson: National Bison Range

Submitted by Patricia Hurin

Through the exploration of the National Bison Range land and exploring the area of irregular shapes, students will determine the area of National Bison Range.

High School

MODELING WITH CUBES

Submitted by Cliff Bara

Students collect data using small wooden cubes to model linear and polynomial functions. Density, Surface Area, volume ratios, and transformations in the plane are explored. Extensions involve one variable statistics and normal distributions.

Be sure your membership is current before signing up for the Teacher's Conference this fall! There's a significant discount for members of a professional organization (and MCTM certainly qualifies!) One year's membership paid this fall will have you paid through 2011, so there's a bargain. Not sure what your membership status is? Just email me at pamkoterba@gmail.com.

Pam Koterba, Membership Chair

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:

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Dear Aunt Sally

Dear Aunt Sally,

I am really concerned that we don't have an MCTM State Math Contest Director. Will we still have a math contest in the spring?

I am worried,

Pam Ick

Dear Pam,

I am also very concerned about getting someone to take over this extremely important position. I am hoping that someone will take on this responsibility so the contest runs smoothly this year.

If anyone is interested, please contact David Erickson or anyone on the MCTM board as soon as possible.

Signed,

Your Dear Aunt Sally

Dear Aunt Sally,

Where can I get more information about the MCTM Fall Conference?

Thanks,

Luke Ingforideas

Dear Luke,

Go to www.montanamath.org. There is a link there that will take you to the Pre-registration page and a link that will give you information about motels, etc.

There is even a link on www.montanamath.org for information on

how to apply for a scholarship that could pay for part of your conference and trip to Helena.

I hope to see you in Helena in October.

Signed,

Your Dear Aunt Sally

Dear Aunt Sally,

Are you willing to travel to my school and do an in-service for the staff? Is it true that you are still teaching and are 95 years old?

Signed,

Charming Billy

Dear Charming,

Actually I'm just a young thing and cannot leave my mother.

Readers: Email me if know my age from the given hints.

Signed,

Your Dear Aunt Sally

Please email questions or comments to Aunt Sally at: auntsally@bresnan.net. Check out her website at www.montanamath.org/auntsally/

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Notes from the Montana Learning Center at Canyon Ferry Lake “Learning at the Lake”

MLC related MEA-MFT Conference opportunities (Oct. 21-22, Helena) – MLC will again collaborate with the Montana Professional Teaching Foundation (MPTF) to offer a Silent Auction. *Volunteers are needed to donate auction items as well as assist with the auction.* Please contact Carol Bock (cbock@montanalearning.org) or Glenn Allinger (allinger@montana.edu) to indicate your level of involvement. MLC will also provide an information booth that adjoins those of MCTM and MSTA organizations. Please take a few minutes to drop by and say “Hello.”



Kids camps – Kids (grades K – 10) had fun and learned a lot during July camps, making impressive presentations to parents the last day of camp. Thanks to Beth Thomas (Great Falls North Middle School, Bd. member) for directing the camps and to instructors/counselors: Beth, Chris Ralph (Warren Elementary, Helena), Katie Grimm (MSU-Bozeman nursing student), Jody Brown (Augusta science teacher). Of course, Carol Bock, Mel Barber and Patrick McNelly (Billings Sr. science teacher) were instrumental in making it all happen.

Chem building renovations - The water damaged former Chem building has been painted/ repaired by an eleven member Elderhostel service group Sept. 2 – 8. Seniors from AZ, OH, WY, Washington, CA, and Helena. participated under the direction of Mel Barber (MLC Maintenance Supervisor). Two bedrooms in that building as well as two in the McKenna Library have been reorganized to house “campers.” Overnight bed capacity at MLC has now increased by 10 persons. Thanks to Verna Macpherson and her UM-Western Roads Scholar staff for arranging this work-learning experience.

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Other Groups Hosted by MLC this summer – Included were: Young Forrest Mentoring Program (for students), Forrest for Every Classroom (teachers), Before It's Too Late, Kennedy Family Seminar, MCTM Academy, Prickly Pear Co-op, MCTM Coaches Retreat, Quest Teacher Leaders, Elderhostel (now Roads Scholars), Broadwater & Bozeman Project, Science and Inquiry Learning in Classrooms .

Strategic Planning Team (SPT) – The MLC Board is looking to a capable Strategic Planning Team to provide insights and ideas about the future course for MLC programs and facilities. The 9 month deliberation process is under the direction of Dr. Gerry Wheeler, former NSTA Executive Director and MSU-Physics Professor Emeritus. SPT members include: Paul Andersen (MLC Board), Marvin Weber (MLC Board), Glenn Allinger (MLC Ex. Dir.), Carol Bock (MLC Admin. Asst./Bookkeeper), Jean Howard (OPI Math Curr. Specialist; former MLC Ex. Dir.), Keith Meyer (Helena Asst. Supt.), Kathy Hill (Whitefish MS math teacher), Patrick McNeely (Billings Sr. HS science teacher), Anna Green (First Lady Assistant and Policy Advisor, Office of the Governor).

Kids Camp Scholarships – Please consider kids camp scholarships as one of your MLC donation priorities. More on this opportunity in our Winter (December) Newsletter .

MCTM Newsletter Goes Electronic

This is the last issue of the paper newsletter to be mailed out.

Please notify Lisa Wood <woodl@billingssschools.org> of your current email address so that you may continue to receive the five newsletters sent each year in September, November, January, March, and May. We hope this switch to an electronic format brings more color and interactivity to your reading of the newsletter, as well as saves us more than \$1000 in annual expenses associated with mailing.

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NCTM Representative's Report

Greetings All, Lisa Wood here, your new NCTM representative for the next two years! I thought that I would let you know about a few things happening with NCTM. On the website you will find a PowerPoint Presentation that you can download that helps to inform teachers and to support them in the implementation of the Common Core Standards as this adoption could have significant implications for some teachers. NCTM along with NCSM, ASSM, and AMTE unite to support teachers and other education stakeholders in implementing the Common Core State Standards which were released June 2 in Atlanta. Go to the NCTM website to learn more.

There are three regional NCTM conferences this fall. They are in Denver CO, October 7-8, Baltimore, MD, October 14-15, and New Orleans, LA, October 28-29. You can register on the website if you are interested in attending.

NCTM has a new series of books called *Essential Understanding*. These books address topics that are crucial to student development but are often difficult to teach. Each book in the series (16 titles planned) gives an overview of the topic, highlights the differences between what teacher and students need to know, examines the big ideas and related essential understandings, reconsiders the ideas presented in light of connections with other mathematical ideas, and includes questions for readers' reflection. Future topics include the following:

- Addition and Subtraction for Pre-K–Grade 2
- Geometry for Pre-K–Grade 2
- Reasoning and Sense Making for Pre-K–Grade 8
- Multiplication and Division for Grades 3–5
- Rational Numbers for Grades 3–5
- Algebraic

- Ideas and Readiness for Grades 3–5
- Geometric Shapes and Solids for Grades 3–5
- Expressions and Equations for Grades 6–8
- Measurement for Grades 6–8
- Data Analysis and Statistics for Grades 6–8
- Functions for Grades 9–12
- Geometric Relationships for Grades 9–12
- Reasoning and Proof for Grades 9–12
- Statistics for Grades 9–12

Don't forget to take a look at *Focus in High School Mathematics: Reasoning and Sense Making*. At the current time it includes the following titles: [Focus in High School Mathematics: Reasoning and Sense Making in Statistics and Probability](#), [Focus in High School Mathematics: Reasoning and Sense Making in Algebra](#), and coming soon, [Focus in High School Mathematics: Reasoning and Sense Making in Geometry](#).

So, NCTM has been busy creating viable material for practicing teachers to utilize in their classrooms, they are providing information to help educators decipher the information provided in the Common Core Standards and they are providing practical professional development through their conferences. To find out more information about NCTM and what it can provide check out their website at www.nctm.org. And as always, check out the MCTM website at www.montanamath.org.

Have a great school year and I will see you in Helena!!

Submitted By Lisa Wood

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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@billings.k12.mt.us. All entries will be reviewed