MONTANA MATHEMATICS
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The Dean Preble Award

The Dean Preble Memorial is awarded annually to a Montana educator who has mase 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 ory 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.

The prestigious list of previous award winner includes: Deb Johnson, Larry Kaber, Maurice Burke, Jim Hamling, Dick Seitz, Glenn Allinger, Karen Longhart, Rick Billstein, Terry Souhrada, Johnny Lott, Nina Miller, Jacquie McDonald, Gary Bauer, Jean Howard, James Hirstein, Terri Dahl, Tony Riehl, Ellen Rose, Sherry Horyna and Benta Winston.

If you know a worthy educator in the state of Montana, please take the time to honor them by nominating them for this award. The deadline for submissions is June 15, 2014. Nominations may be sent or e-mailed to:

Cliff Bara
Box 610
Troy - MT - 59935
cuda11235@gmail.com

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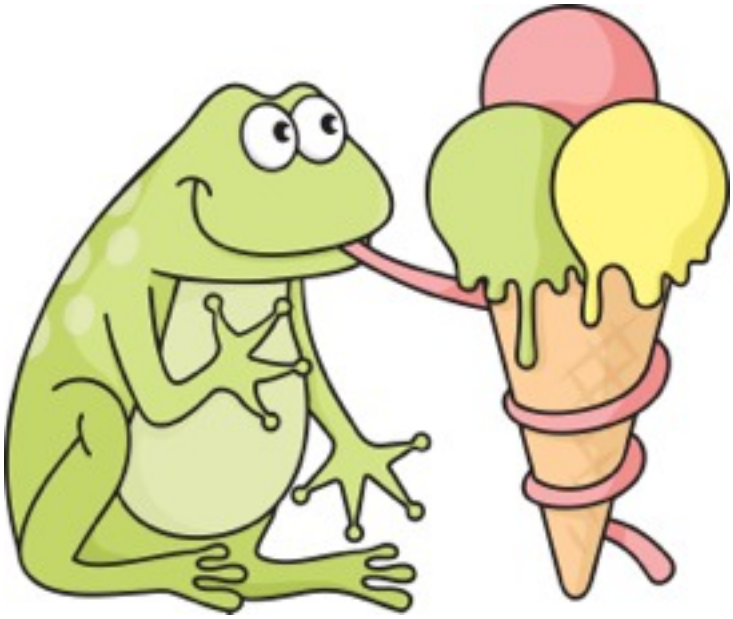


Elementary Lesson Plan

Redecorating Rooms

Submitted by Pamela Murnion

In this activity, students will act as interior designers as they redecorate and submit bids for a client's bedroom.
CCSS Met: 3.MD.D.8, 3.MD.C.7, 3.NBT.A.2
Mathematical Practices Standards: 1, 2, 3 & 6

Middle School Lesson Plan

My Giant

Submitted by Angel Zickefoose

In this activity, students use ratios, unit rates, measurement, and averages to find out information about the proportionality between their own body parts. They will then take this information and build a giant.
CCSS Met: 6.RP. 1-3
Mathematical Practice Standards: 1, 4, 5, 6 & 8

High School Lesson Plan

Applications of Recursive Formulas - Credit Cards, Fruit, and Mortgages

Submitted by John George

Complete lesson plans are available at www.montanamath.org

MCTM Membership Form

___ New Member _____Renewal

Grade Level: Check all that apply

____ Elem ___MS ____ HS ____ College

Name: _____

Address: _____

_____

Phone #: _____

E-mail: _____

Annual Dues (January - December)

_____ Regular (1 year)	$20
_____ Regular (2 years)	$30
_____ Regular (10 years)	$150
_____ Life Time	$200
_____ Student	$10
_____ Retired Educator	Free
_____ MCTM and MSTA	$40

Send form to:
David Erickson, MCTM Membership Chair
david.erickson@mso.umt.edu
Department of Curriculum and Instruction
The University of Montana
32 Campus Drive
Missoula, MT 59812

MCTM President's Message

Happy Spring!

Another school year is coming to a close and summer vacation is just around the corner. I know that vacation is a word to be used lightly, because most of us will continue to have school-related commitments throughout the summer, which is what makes the Montana mathematics community so great! Thank you for your dedication to improving your instructional practices during the summer.

In April I was fortunate enough to attend the NCTM Convention in New Orleans. The sessions that I attended were great. I continued to learn about blended classrooms, attended sessions on proportional reasoning and participated on the winning Trivia Challenge team, hosted by Mathalicious and Desmos! Congratulations to all participants on the team - it was fun!

Congratulations also to the winners of this year's MCTM Board Elections:
President: Melissa Romano - Helena
Region Five Rep: Leslie Pehl - Circle
At large member: Jason Stewart - Florence
Thank you to everyone who ran for the board.

Lately there has been a lot of push back both state-wide and nation wide about the recently adopted Common Core State Standards, and I would like to encourage everyone to stand up against this push. If every educator found one friend, business owner, or acquaintance to write a letter to a local publication, to your PTA, or school newsletter in support of the Common Core State Standards, we can make a stronger stand. We need to let others know that the standards are not a political agenda, but rather a set of rigorous standards and practices that teach our students to think mathematically, make connections among mathematics topics and to persevere in problem solving. Please take the time to contact someone in regards to Common Core! The US Chamber of Commerce Foundation put together an informative video highlighting the importance of the Common Core and correcting misinformation. This new video provides statements of support from superintendents, teachers, parents, legislators, and others.

In June, the MCTM Math Contest Writing Course will be taking place. Please consider joining this great team in Billings! Information is available in the newsletter.

I hope you have an enjoyable, relaxing summer. This is my last article as MCTM President and I've enjoyed the tenure very much! Thank you to all who have supported me throughout the years!

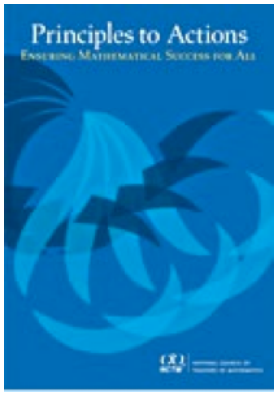
Angel Zickefoose
MCTM President

NCTM Representative's Report

MCTM is an affiliate of the National Council of Teachers of Mathematics (NCTM). Approximately one-third of our members are also NCTM members, each able to help MCTM when renewing our national membership. Please renew your membership online and check your affiliation with MCTM (Montana Council of Teachers of Mathematics). This provides us with a $3 rebate for each year of membership renewal. This can contribute hundreds of dollars to MCTM each year; those $3 add up.

Summer Interactive Institutes.

Join NCTM in San Diego or in Chicago for summer professional development opportunities. Whether you are an experienced classroom teacher or just beginning your career, NCTM's Interactive Institutes will provide the instructional strategies and high-quality professional development you need to successfully implement the Common Core State Standards for Mathematics in the classroom. Institutes begin in July and include: Algebra Readiness for Every Student (Grades 6–8), Connecting Number and Operations in the Classroom (Pre-K–Grade 5), Engaging Students in Learning: Mathematical Practices and Process Standards (Grades 9–12). If you register by May 30th, you could save $40 with the early-bird registration rates, and each participant will receive a copy of the new 2014 book, *Principles to Actions: Ensuring Mathematical Success for All*. This book, a $28.95 purchase when purchased separately, is sure to provide us with an excellent direction for the next decade, much as *Principles and Standards for School Mathematics* (2000) did for the last decade. Additional group savings of $152 and individual savings of $90 are available, so act quickly and use Promo Code SD50.



And now, I wanted to thank you all. It has been my pleasure to serve as your NCTM rep these past two years. According to our MCTM policies, Angel Zickefoose will assume this role for the next two years. Thank you again for your continued support of mathematics for all.

David Erickson, NCTM Representative, david.erickson@mso.umt.edu

2014 ANNUAL MATH CONTEST

Nearly 3500 mathletes in grades 7-12 participated in the 2014 MCTM Math Contest in March. Participating students complete three 30 minute tests based on grade-level content. Contest writers started correlating the tests with Common Core math standards in 2013.

Site	Male	School	Female	School
Billings	Jonathan Parisi	Sweet Grass	Nicole Evans	Skyview
Butte	Dustin LaMiaux	Butte HS	Madison Flaget	Three Forks
Glasgow	Ryan Kasten	Circle	Emma Fewer	Opheim
Great Falls	Kyle Wanner	Great Falls	Nealy Thompson	Great Falls
Havre	Zachary Hellegard	Havre	Kassady Sheble	Valier
Helena	Bridger Howell	Helena High	Kinsey Vavruska	Helena High
Livingston	Sam Noble	Park	Cara Robertus	Heritage Christian
Missoula	Yeo Chung	Columbia Falls	Michele Christnacht	Powell County
Sidney	Jackson Marsh	Plentywood	Cassidy Bummer	Plentywood
Southeast Plevna	Stephen Burek	Powder River	Alissa Wolenetz	Ekalaka

180 students from 52 different schools scored in the top 15% for each of the three tests that they completed. Wow! We have some really great problem solvers in math classrooms across Montana!

There are currently 10 regional contests: Billings, Butte, Glasgow, Great Falls, Havre, Helena, Livingston, Missoula, Sidney, and Southeast-Plevna. The top male and female senior participants in each of these regions is awarded a $200 scholarship (must complete calculus and statistics based tests). Special congratulations go out to Cara Robertus and Sam Noble. As the top female and male scorers in the state, Cara earned the Joan Dolan Memorial Scholarship while Sam earned the Adrien Hess Memorial Scholarship. Each of these scholarships is valued at $500. Many regional contests also give out a plethora of prizes – from plaques to pizza coupons to graphing calculators.

Wish you had a regional contest to participate in your part of Montana? Contact Shari Kepner (shari.kepner@gmail.com) to find out how easy it would be to start hosting one! Remember – you don't have to direct the contest by yourself. Grab a colleague and join the fun while providing a great math competition for students in your area! Already have a local contest nearby but you're not sure how to get your students involved? Contact Shari or check out the MCTM website's contest page at http://montanamath.org/?

Crazy 8s – a Mathematical After-School Club!

Have you heard about Crazy 8s? It's a brand new, over-the-top after-school club designed to get kids fired up about math. Every week kids get to build stuff, run and jump, make music, make a mess…and make friendships at the same time. It's time for math to become the cool thing to do after school.

Crazy 8s is designed for 10-20 kids per club: enough to make it fun, but still manageable for a single adult. The club is available for three age levels – preschool, grades K-2 and grades 3-5 – all featuring hands-on activities like Glow-in-the-Dark Geometry and Toilet Paper Olympics. Clubs will take place after school at schools, libraries and other recreational programs.

The free kit contains nearly all materials needed, as well as easy-to-follow instructions and collateral you can use to promote the club. Schools provide the coach and a few inexpensive, easy to find supplies. Check out Crazy 8s for more information or sign up to be a coach. Crazy 8s: Math will never be the same!

About Bedtime Math:

Crazy 8s is the latest creation of Bedtime Math Foundation, a nonprofit organization that seeks to put the fun and discovery back into learning math. Every night, Bedtime Math posts a zany new math problem for parents to do with their kids. Over 50,000 people now enjoy math and mischief daily, helping our next generation to love math. Check it out at www.bedtimemath.org.

A PISA Primer: How Can an International Test Inform Educational Practice in Montana?

Every few years an international report card sweeps through the education world and seizes global attention. Experts, politicians, news outlets, administrators, teachers, parents, and community members draft their own opinions and share them in various formats that include videos, blogs, articles, verbal discussions, and even legislation. To become educated concerning this report, the Programme for International Student Assessment [PISA], one must sift through the myriad accounts, and in the end, draft a conclusion: What does PISA mean for me as a mathematics teacher? The following summary and discussion of PISA is offered to help members of the education community develop informed opinions of what the test means in and for the United States and other countries.

Summarizing PISA

Who developed PISA and why?

The Organisation for Economic Co-operation and Development [OECD] is the entity responsible for authoring and administering the PISA exam. It was established in 1961 and there are currently 34 member countries, including most of Europe, the United States, and Canada ("History," n.d.). OECD member and affiliate economies account for approximately 80% of the world's trade and investment dollars. The mission of OECD is "to promote policies that will improve the economic and social well-being of people around the world" ("About the OECD," n.d.). While the primary focus of OECD is its member and affiliate nations' economies, it views labor and human capital as the most valuable resource in an economy. Thus, OECD believes that a well-educated and well-trained labor force is vital for a country's economic prosperity and/or development, and it seeks to leverage the positive impact that education can have on the economies of its member and affiliate nations as a means to promote and facilitate a "commitment to market economies backed by democratic institutions and focused on the wellbeing of all citizens" (ibid.).

What is PISA and who takes it?

As part of their efforts to impact educational policy to improve the economies of their member and affiliate nations, OECD developed and implemented the PISA, which was administered for the first time in 2000 ("About PISA," n.d.). PISA measures 15 year-olds in member and non-member nations in the areas of reading, mathematics, and science every three years . PISA samples students who are 15 years, 3 months to 16 years, 2 months from either a private or public school ("Frequently Asked," n.d.). Representative samples are used from each country that participate in PISA ("PISA Participants," n.d.). "Each country or educational system submits a sampling frame" that identifies a minimum of 150 schools to sample from and up to 35 students are randomly sampled from each school ("Frequently Asked," n.d.). Each country is responsible for making sure their schools participate; the goal being for each country to have a 65 percent participation rate, or else they will not be represented in the national database. All of the sampling procedures are monitored by contracted research firms.

What mathematics does PISA assess?

PISA's 2012 Assessment and Analytical Framework (OECD, 2013) states the assessment's objective is to measure the mathematical literacy students currently possess that will allow them to be successful in their adult lives. This is accomplished through a variety of equally weighted open-

constructed, closed-constructed, and multiple-choice problems set in a real-world situation. The overarching goal of PISA is to use these measurements to quantify students' mathematical literacy, which is broken down into three interrelated aspects: mathematical processes, mathematical content, and contexts.

Mathematical Processes

Mathematical processes are what students do to translate the context of a problem to a mathematical domain in order to understand and answer the question. PISA measures students' ability to utilize three processes: formulation, employment, and interpretation and evaluation. Throughout these three processes, PISA gauges students' usage of seven mathematical capabilities, which are similar to the Common Core State Standards for Mathematical Practice, to measure question difficulty.

Mathematical Content

Each question comes from one of the following content areas: change and relationships, space and shape, quantity, and uncertainty and data. Although each question could potentially have aspects in multiple content areas, each question is assigned to only one content domain.

Contexts

The context is the aspect of a person's world in which the problem is concerned. The four contexts that PISA incorporates are personal, occupational, societal, and scientific. The range of these contexts exemplifies the assessment's belief in measuring the connection students make with mathematics on a personal all the way up to a purely mathematical level.

An example problem that illustrates how items were categorized within the three dimensions of mathematical literacy is shown in Figure 1. This problem, titled "Carpenter," was aligned as employing (Process), space and shape (Content), and occupational (Context). To explore additional PISA items, visit Explore PISA 2012 Mathematics and Problem Solving Test Questions.

Item for the unit *CARPENTER*

A carpenter has 32 metres of timber and wants to make a border around a garden bed. He is considering the following designs for the garden bed.

Circle either "Yes" or "No" for each design to indicate whether the garden bed can be made with 32 metres of timber.

Garden bed design	Using this design, can the garden bed be made with 32 metres of timber?
Design A	Yes / No
Design B	Yes / No
Design C	Yes / No
Design D	Yes / No

Figure 1

A student taking the PISA survey in 2012 would spend up to 60 minutes working on a variety of problems at differing levels. Most questions are graded as either correct or incorrect, but some open-ended responses allow for the granting of partial credit. Overall mathematical literacy for students and countries is then scored on a 6-point scale, which takes into account students' abilities to complete different tasks of varying difficulties, and later standardized for overall reporting.

Students and principals in some samples are also asked to complete a 20-30 minute questionnaire that poses questions regarding school and student interest in mathematics, willingness to do mathematics, and opportunities to learn. These are used to measure outside factors that allow the reporting and analysis of mathematical literacy for important subsections of students (e.g. gender, migration status, or socioeconomic background) (OECD, 2013).

A natural question to ask is how does PISA ensure the validity and reliability of the assessment items across different culture and languages? In order to make any sort of comparison between countries, one needs to make sure that all students are perceiving and answering the same question. Towards this end, PISA uses a double translation design to verify that questions are accurately translated between languages. Double translation is made up of "two independent translations from the source language(s), and reconciliation by a third person" (PISA Technical Document). PISA also records justifications for changes, corrections, and checks of items and ensures changes were implemented effectively once booklets are printed.

PISA in the United States

How does the U.S. compare to other countries?

Over the years, when comparing the United States' average performance to the OECD average, our country has consistently underperformed as indicated in Table 1.

Table 1

Average Mathematics Literacy Score

	2003[a]	2006[b]	2009[c]	2012[d]
United States	483	474	487	481
OECD	500	498	496	494

[a]Lemke et al., 2004
[b]Baldi, Jin, Skemer, Green, & Herget, 2007
[c]Fleischman, Hopstock, Pelczar, & Shelley, 2010
[d]Strauss, 2013

It would seem the U.S., while consistent in its average score, still struggles to meet OECD's benchmark.

What do these results mean for U.S. schools?

Given that U.S. students' performance on the mathematics portion of PISA has not changed over time, what can teachers and schools do to improve our students' mathematical literacy? U.S. students' greatest area of weakness is in "performing mathematics tasks with higher cognitive demands, such as

taking real-world situations, translating them into mathematical terms, and interpreting mathematical aspects in real-world problems" ("PISA Results," 2012, p.1). Fortunately, the Montana Common Core Standards for Mathematics place a greater emphasis on application of mathematics, as well as an emphasis on Mathematical Practices like making sense of problems, decontextualizing problems, and engaging in the modeling process, so implementation of these standards will increase opportunities for students to develop and use mathematical literacy (Montana Office of Public Instruction, 2011). In fact, an alignment study between PISA and the Common Core State Standards for Mathematics [CCSSM] found that successful implementation of the CCSSM should result in "significant performance gains" on PISA ("PISA Results," 2012).

PISA in Other Countries

Countries have varying reactions to PISA data; some embrace it as an affirmation of their educational programming, while others criticize it for not telling the "whole story" of their school system and students. PISA data has shown that countries with greater social equity, such as Finland, have a larger proportion of higher performing students (Duru-Bellat, 2011). Of course, the so-called "Finnish Miracle" could also be attributed to the Finnish education system's focus on early education, equity, developing the whole student, and recruiting only the best prospects for teaching positions by requiring a master's degree and research-focused studies in the education programs (Sahlberg, 2011a; Sahlberg, 2011b). It is tempting to look at such a high-performing country and want to simply copy their system. However, taken out of cultural context, the system may not work as hoped. In fact, Duru-Bellat (2011) asserts that PISA data ultimately will not provide any definitive answers or quick educational fixes; instead, PISA data should be a launching point for a conversation in each country about their social and educational contexts. For example, many in Germany are critical of PISA, feeling the assessment only measured the "internal efficiency" of a school--not how effectively the students were prepared for life after formal education (Trohler, 2011). In Ireland, students expressed frustration and confusion with the PISA exam, and, due to its length, began just ticking boxes and refrained from honestly talking about home and academic life in the personal questionnaires, should it come back to them (Mac Ruairc, 2011, p. 151). Such conversations get to the root of why and how each country educates children, and any interpretation of PISA results must always take this into account.

Conclusions

We have examined the countless aspects of PISA, including what it is, how and what it measures, what it reveals about education in the United States, and the reactions of various countries to PISA. While it is important to be cognizant of the criticisms of PISA, it is equally important to be aware of the valuable data PISA provides schools and educational systems about the mathematical literacy of their students. Now that you have a glimpse of the "big picture" of PISA, what opinion will you form about it? And, more importantly, how will that opinion impact your practice as a mathematics teacher?

Submitted By: Meredith Berthelson, Adam Clinch, Andria Disney , Beth Lask, Grant Swicegood

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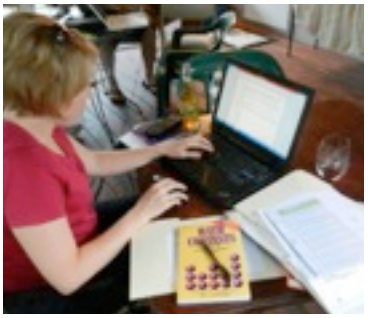
Be a Math Contest STAR!

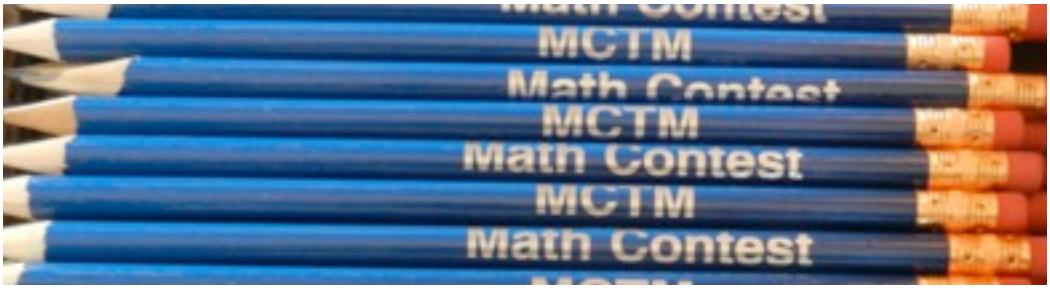
Are you are interested in participating in writing the 2015 tests? It is never too early to start planning out your summer adventures. Why not participate in some exciting professional development in beautiful Billings, MT, on June 21-22nd? You can focus on Montana's Common Core Standards for mathematics while constructing fun and engaging contest items to be used with Montana's 7th-12th grade math students next spring.



Stipends and 20 OPI renewal units are provided to contest writers. You also have the opportunity to earn one continuing education credit through MSU. For contest writers traveling from outside the Billings area, lodging will be provided and you will be compensated for mileage costs (carpooling may be requested). Most importantly, you will be able to spend two sensational days with other math teachers on a private deck in Billings – complete with meals, beverages, snacks, and desserts!

Not available to participate in the contest writing weekend? You can still help out. We also need volunteers to review the constructed items!

Fill out the attached application to be a writer or a reviewer today!



MONTANA MATHEMATICS

MCTM Math Contest Writing Course

A great summer professional experience on a great deck in Billings!

June 21-22, 2014

Registration Deadline: May 31

Please mail your completed form to:
Shari Kepner
PO Box 300
Clyde Park, MT 59018
Or scan and email form to Shari: shari.kepner@gmail.com

____YES, I want to help write the 2015 Math Contest Tests (OPI Renewal Unites Available or 1 Graduate Credit)

____ YES, I will be willing to proof-read completed tests. (Tests would be mailed to you to proof sometime in July and due back to the state contest director by mid-August.)

Name:_____

Email:_____

(This should be active during summer as well as during the school year.)

Summer Mailing Address: _____

Phone number(s): _____

Current Teaching Assignment (2013-2014)

Course Title_____ Grade level: _____

Course Title_____ Grade level: _____

Course Title_____ Grade level: _____

I plan on bringing a laptop: Yes No It has Word _____ (version) installed.

Hotel stay for Saturday night will be paid directly by MCTM. Meals will be provided. The course runs from noon - 9 p.m. on Saturday and Sunday 8-5. Sign-up for college (MSU) or OPI credit Saturday, June 21. A $250 stipend will be mailed to each writer upon completion of the course. Mileage and per diem will be reimbursed. Meals will be provided for Saturday evening and Sunday lunch.
Carpooling and 2-people per room will be REQUIRED when possible.

___ Yes, I will need hotel accommodations.

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

THANK YOU FOR HELPING MAKE THE 2015 MCTM MATH CONTEST POSSIBLE!

2014 NCTM National Convention Wrap Up

I appreciate the support of MCTM and their commitment to the empowerment and betterment of teachers. Without their generous financial support this conference would not have been possible. What an amazing experience as an educator! The opportunity to learn, grow and collaborate with other educators was phenomenal! As a professional, it was a time to be inspired and to get equipped with tools for the future learning of our students, and develop professionally with the most dynamic, cutting-edge approaches to education and the latest researched based strategies!

There were colleagues from my home school along with teachers from our feeder high school on the trip. This gave us a chance to bond as a team, adding cohesiveness to our 7-12 math departments. It allowed us as a middle school and high school team to see the big picture of progressions, work together and dream about how to make learning better for our community of students as they progress. The experience served and a vision cast for the development of mathematics for all of us in our respective positions. The highlights of the conference were the things that I would like to share that I feel will be most useful to other math teachers.

Ten Marks Summer Math Program - http://summermath.tenmarks.com

This math program is FREE to everyone this summer. It is for all students 1st-Algebra 2. Progress can be sent to teachers and the program is individualized to each student. What a great way to keep up and progress with math throughout the summer.

MyScript Calculator This FREE app is amazing! Try it out on your ipad, iphone etc. It takes your handwriting and does the math for you!

Desmos Online Graphing Calculator - www.desmos.com

This is absolutely amazing! You need to check it out! Millions of online graphing minutes are used each month!

Mathalicious - http://mathalicious.com

There are over 80 engaging lessons on a variety of topics! The kids love these!

2014 Trivia Challenge Winners

The highlight of the trip was being on the winning trivia team! We represented Montana well and won some great prizes!

Submitted by Alison Troxel
Karen Longhart Scholarship Award Winner

HELP WANTED - 2014 MEA-MFT Educator's Conference

We need your help. Mandy Berens and Lisa Wood have been co-chairs for the MEA-MFT Annual conference for 2 years now! Their last year will be next year in Missoula. MCTM is seeking volunteers to become the conference chairs after Missoula. Starting in 2015, the conferences will be in Billings, Helena, Missoula and then Billings. If you (and a friend) are interested, please let one of us know. We would like you to start shadowing them next year, so that you have an idea of the process - and then take over in 2015.

MCTM Scholarship Opportunities

MCTM seeks applications immediately from members for scholarships that comprise several thousand dollars of opportunities. We have funds available for attending professional development opportunities this spring, summer, or fall and we have one $500 early career scholarship to attend a PDA this summer. Please submit your application to the Scholarship Committee Chair any time before the respective deadlines below.

MCTM Scholarship: Members who wish to attend a mathematics conference are eligible for financial assistance from the MCTM Teacher Scholarship in the form of $400 scholarships for out-of-state mathematics conferences and $200 for in-state mathematics conferences. Any teacher who is an MCTM member is eligible to receive the scholarship except for current MCTM board members and immediate past-year recipients. MCTM has allocated $2000 per calendar year for this scholarship.
Application deadline: November 30 or earlier.

Early Career Scholarship: MCTM has offered the "Early Career" scholarship the last five years. This $500 scholarship is available to all MCTM member teachers who have taught a mathematics class in the last year and have from one to five years of experience. The scholarship must be used to attend an MCTM sponsored Professional Development Academy (PDA) in the summer. There are two PDA's each year, one for the upper grade levels and one for the lower ones.
Application Deadline: May 1.

Each scholarship application requires specific components found on the application form and all require a subsequent submission of an article to the MCTM Newsletter about the Professional Development activity. You may email David Erickson for an application form, too.

David Erickson, MCTM Scholarship Committee Chair

MCTM Teacher Scholarship

Teachers wishing to attend math conferences may be eligible for some financial assistance from MCTM in the form of $400 scholarships for out of state math conferences and $200 for in state math conferences.

Any teacher who is an MCTM member is eligible to receive the scholarship except for current MCTM board members or if the MCTM member received an MCTM scholarship in the previous year. The scholarship chairman may allocate up to $2000 per calendar year. Applications are due November 30. The recipient must write an article for the newsletter on a useful idea acquired at the conference. This article must be mailed to the Chairperson of the Scholarship Committee within thirty calendar days of the final day of the conference. The chair will then submit the article to the editor of the newsletter and will authorize the MCTM treasurer to issue a check to the scholarship recipient.

The following is the procedure for obtaining an MCTM scholarship:

1) The application for the scholarship must be submitted to the Chairperson (David Erickson) by November 30 or earlier. An individual is only eligible to receive one scholarship per calendar year.
2) Applicants cannot apply for a scholarship if they were awarded one the previous year.
3) The chairperson will notify applicants if they have been awarded the scholarship.
4) The recipient must attend the conference.
5) After the conference, the recipient must write an article for the MCTM newsletter on at least one useful idea obtained at the conference. This article should be e-mailed to the scholarship chair (David Erickson) within thirty days of the end of the conference. The chair will submit this article to the editor of the MCTM newsletter and will authorize the MCTM treasurer to issue a check to the scholarship recipient.

Send the application and completed newsletter article to:

David Erickson
MCTM Scholarship Committee
Department of Curriculum and Instruction
The University of Montana
32 Campus Drive
Missoula MT 59812

Or preferably
david.erickson@umontana.edu

MCTM Early Career Scholarship

MCTM is offering an "Early Career' scholarship worth $500. This scholarship will be given to one K-12 Montana 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.

To be eligible for this scholarship you must:

1) have taught math in Montana for at least one (1) year and not more than five (5).
2) be contracted to teach math this coming year in Montana.
3) be a current member of MCTM

You must also fill at least one of the following criteria:

1) an elementary teacher who teaches at least one section of math during the day or
2 a secondary teacher who teaches at least 3 sections of math each day or
4) special education teacher who has at least one period of math each day or
5) a Title 1 math teacher who teaches at least 2 periods of math each day

The deadline for a completed and submitted application is May 1 of the year of the PDA.

In the event that the original winner is unable to attend, an alternate will be chosen.

To receive the $500, you must:

1) complete the PDA,
2) write and submit an article about the PDA to David Erickson (scholarship committee chair) for the MCTM newsletter. This article must be submitted within one month of the completion of the PDA and
3) enclose a letter, written by the facilitator of the PDA, indicating that you have successfully completed the PDA.

Send applications and the newsletter article to:

David Erickson
MCTM Scholarship Committee
Department of Curriculum and Instruction
The University of Montana
32 Campus Drive
Missoula MT 59812

Or preferably
david.erickson@umontana.edu

Karen Longhart Scholarship for Professional Development

I was honored to be one of the recipients of the Karen Longhart Scholarship for my professional development (PD). Early in February, I used the funds to help pay for my trip to the annual meeting of the Association of Mathematics Teacher Educators (AMTE) in Irvine, California. As a mathematics teacher educator, I thoroughly enjoyed my time at this conference learning what other universities are doing to help their teachers learn more about the Common Core. I learned Montana is on par or better in reaching teachers compared to other states. The STREAM grant and our Professional Learning Network are helping to close the gap when it comes to teachers learning about the Common Core.

One research session I attended involved a university project that paired university students with in-service teachers together into Teams of 2. The school secured a grant to allow ten teachers to take the elementary math methods course WITH the university students during their school day. The professor taught the course in the school once a week for three hours. The first hour of the course the Teams learned new methods, planned a lesson, and then taught this lesson. The professor was not only able to mentor the teams, but also observe their teaching. Math test scores of the elementary students increased! All learned and enjoyed the process. Three years later, however, most, if not all, teachers reverted to their traditional ways of teaching! Final message of this session: more research is needed!

Another "take-away" topic revolves promoting equity in our teaching. The specific title of the session sums it up nicely: "*Preparing Beginners to DO Equitable Mathematics Instruction, Not Just Believe in It.* " Renown mathematics educator, Deborah Ball opened this session and delineated four salient points to remember when teaching mathematics equity:

1. TASKS: choose the tasks with care
2. LANGUAGE: introduce and use language carefully
3. EXPLICITness: make Math Practices explicit
4. Support for participation by ALL students.

Believe it or not, the session with over 100 people, was an interactive one, where groups of 2-3 folks, discussed a page of story problems in which we found some blatant and some sublime stereotypes embedded within the problems.

As is true of all conferences I attend, I reunited with friends and made new ones. The weather was conducive to touring as well. Dr. Jennie Luebeck, of MSU, and I did take time to have breakfast near Laguna Beach and enjoy the sights before our plane took off early Sunday afternoon.

Submitted by Georgia Cobbs

MCTM Scholarship Application Form

(Information on each scholarship can be found on the MCTM webpage under Scholarships/Awards: http://montanamath.org)

Circle appropriate choice:

Karen Longhart Scholarship: October 12
Teacher Scholarship: November 30 Or Earlier
Early Career Scholarship: May 1

Name _____

e-mail address _____

Mailing address _____

City _____ Zip _____ Phone _____

School name _____

School address _____

City _____ Zip _____

Grade level(s) taught _____ Years of Teaching _____

Subjects taught _____

Are you a member of MCTM? _____

What conference, workshop, PDA, or class are you interested in attending?_____

Location _____ Dates _____

What are your objectives for attending this conference/workshop/class?

How will you use/share this information? (all recipients will also share via an MCTM newsletter article due to the scholarship chairman within one month of attending the conference.)

All applicants should enclose a letter from an immediate supervisor/principal verifying teaching success/ support during the current year of the application, a written essay that adequately addresses your philosophy of mathematics education and reasons why you are an appropriate recipient.

Submit completed application to David Erickson's email: david.erickson@umontana.edu

Nominations Sought for the 2014 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 Dean Preble Memorial Award is June 15 annually. Nominations may be sent or e-mailed to:

Cliff Bara
PO Box 610
Troy - MT - 59935-0610
cuda11235@gmail.com

Jokes and Quotes

JOKES:

Q: What do you get when you cross a bird with a Zero?

A: A flying NONE!

$\sqrt{-1}$ $2^{3\sum\pi}$ *and it was delicious!*

$\sqrt{4b^2}$: *2b or NOT 2b, that is the answer!*

QUOTES:

Your imagination is a preview to life's coming attractions. -- Albert Einstein

Submitted by Marie Boothe

2013-2014 MCTM Board of Directors

Member	School	Grade Band	Region	Title	E-mail Address	Term
Angel Zickefoose	Billings Public Schools	K - 8		President	zickefoosea@billingsschools.org	2011-2017
David Erickson	University of MT	13 - 16		NCTM Representative	david.erickson@mso.umt.edu	2009 - 2013
Cliff Bara	Troy High School			Treasurer	cuda11235@gmail.com	
Don Hickethier	Flathead Valley CC	13-16	I	Director	dhicketh@fvcc.edu	2012-2015
Deb Wickum	CJI High School	9-12	II	Director	dwickum@cji.k12.mt.us	2012-2015
Hilary Risser	Montana Tech	13 - 16	III	Director	hrisser@mtech.edu	2012-2015
John George	Helena High School	9-12	III	Director	jgeorge@helena.k12.mt.us	2013-2016
Laura Ascheman	Townsend	5 - 8	III	Director	lascheman@townsend.k12.mt.us	2011- 2014
Pamela Murnion	Central Elementary	K-4	III	Director	pmurnion@helena.k12.mt.us	2013-2016
Jennifer Brackney	Castle Rock Middle School	5-8	IV	Director	brackneyj@billingsschools.org	2013-2016
Marie Boothe	St. Labre HS	9-12	V	Director	meboothe@yahoo.com	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@billingsschools.org. All entries will be reviewed.