



Wahpe Woyaka pi

(Talking Leaf)

South Dakota Council Teachers of Mathematics Newsletter

Presidential Ponderings

February in South Dakota can be cold and cruel. Fortunately, warmth and camaraderie will be found at the upcoming annual SDCTM/SDSTA conference in Huron. Where else could I find a group of people that get my math jokes? Some even find them to be funny... I think... Anyway, the upcoming 25th annual conference promises to be another outstanding event. Make plans to be in Huron February 2-4 for a fantastic professional development experience.

The conference will begin with two sharing sessions on Thursday night: one for math, and one for science. The round table discussions are facilitated by leaders from each organization, but your participation is critical for a successful event. I will be hosting the math sharing session, which starts at 7:00 p.m. on Thursday night. Imagine Show and Tell for math teachers of all grade levels, so bring your favorite idea or classroom activity to share. Come hungry; there will be Pizza Pi (get it?) for the first 25 who attend the sharing session.

Have you heard of "Ignite"? Speakers have five minutes to talk about a topic of their choice. Their 20+ PowerPoint slides are set to automatically advance every few seconds, so they can't exceed their time limit. Some are funny, some are inspirational, and some are educational. When their five minutes is up, speakers must exit the stage, maybe even in mid-sentence. We are going to give it a try. This year's conference will kick off at 8:05 am on Friday with an opening session featuring two Ignite talks. SDSTA's Liaison Dr. Larry Browning will talk about "The Co\$ of Personal Power" The second Ignite talk will be "Lessons Learned from NCAA Basketball" by yours truly. It is guaranteed to be an interesting and fast-paced event. Please plan ahead to complete your conference registration tasks in time to attend.

We are excited to have Desmos Founder Eli Luberoff as our high school Featured Speaker this year! Eli began his programming life on his TI-83 graphing calculator in elementary school, culminating with a working version of Monopoly which was destroyed when he removed the backup battery by accident. He began working on the software that would become Desmos.com during a year-long hiatus from Yale University in 2007, returning to graduate summa cum laude with degrees in Math and Physics in 2009. Eli was also selected by Bloomberg Businessweek as one of the top 25 entrepreneurs under 25 in 2011. Eli will present sessions such as "Technology and Intellectual Need" and "Ten Things You Didn't Know You Could Do With a Graphing Calculator."

Middle School Featured Speaker Brad Fulton is known throughout the country for motivating and engaging teachers and students, Brad has co-authored over a dozen books that provide easy-to-teach yet mathematically rich activities for busy teachers. Drawing upon over three decades in education, Brad is a frequent presenter at conferences and schools throughout the nation in addition to teaching full time. In 2005, he was selected as California's middle school educator of the year. Brad will be presenting sessions titled "The Emancipation of Intelligence" and "Building Number Sense Through Engaging Activities," among many others. Brad is also giving the banquet speech. His topic is "The Velveteen Teacher," based on the beloved children's classic "The Velveteen Rabbit."

Elementary Featured Speaker Mariann Dolnick is a retired Cobb County teacher from Marietta, GA. with 33 years teaching experience in first through eighth grades. Mrs. Dolnick holds a Bachelor's Degree in Elementary Education from Mercyhurst University in Erie, PA and a Master's Degree in Early Childhood Education from Kennesaw State



WINTER 2016-2017

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Calendar Notes:

- *SDCTM/SDSTA Conference February 2-4, 2017*
- *PAEMST Nominations Due April 1, 2017*
- *PAEMST Applications Due May 1, 2017*



Presidential Ponderings, *continued*

I am truly excited to meet all of our Featured Speakers. They all sound so good! My only regret is that I won't be able to attend EVERY session. It's a good kind of problem to have, I guess.

Over 100 sessions by South Dakota's outstanding educators fill out the program. Just a few of the intriguing topics include "Rational Tangles," "Tech Jam," "Make it Look Easy," "Seesaw" and "A Thief of Great Ideas." Check the website at www.sdctm.org for the official program. Heck, by the time you read this, it may already be posted! Registration and other conference information can also be found online.

Is your closet full of stuff that you no longer use, but it's too good to throw away? A big success every year, "Share the Classroom Treasures" returns. Bring your excess, good, working equipment or resource materials to the conference. We will be providing a room for you to drop off and give away your things so that other South Dakota teachers with a need can take them to use. (Although it may feel like yours, make sure that it is. If it's marked "School Property", please leave it in school.)

As always, annual awards will be presented at Friday night's banquet as both SDCTM and SDSTA recognize leaders in math/science education. Finalists for the Presidential Award for Excellence in Mathematics and Science Teaching (PAEMST) will be honored. The recipients of the Outstanding Math Teacher Award, Friend of Mathematics, and Distinguished Service to Mathematics Award will also be announced during Friday night's banquet. I'm so looking forward to seeing you all there!

Your 'til pi repeats,

SDCTM Business Meeting

Make plans to attend the annual SDCTM business meeting to be held in conjunction with the SDCTM/SDSTA Joint Conference in Huron. The meeting will be held on Friday Feb. 3, 2017. There will be several items of business to conduct. All members are encouraged to attend and make their opinions known.

- * This will be an election year for SDCTM. Officers to be elected include President-Elect, Vice-President, Treasurer, Secretary, and NCTM Representative. Please contact SDCTM President-Elect Al Hogue (allen.hogie@k12.sd.us) to nominate a candidate.
- * Plans for the 2017 summer symposium will be discussed.
- * A proposed amendment to SDCTM By-Laws will be considered. The purpose of the proposed change is to add "SDCTM Public Relations/Social Media Coordinator" as an official position of SDCTM. The PR/SM Coordinator would be appointed by the president, and serve as an ad-hoc (non-voting) member of the executive board. The text of the proposed change is at right.
- * Other items proposed by the executive board and/or membership. Please contact

"Over 100 sessions by South Dakota's outstanding teachers fill out the pro-

Proposed Change to By-Laws:

Article III—Executive Board
The executive board shall consist of the officers of the organization, the immediate past president, newsletter editor, elementary liaison representative, middle school liaison representative, secondary liaison representative, post-secondary liaison representative, and committee heads. Ad-hoc (non-voting) members shall be the SDCTM webmaster, [SDCTM Public Relations/Social Media Coordinator](#), South Dakota math curriculum specialist, and the State Coordinator of the Presidential Awards. The executive board shall transact necessary business as may be referred



Desmos Founder Eli Luberoff to Speak

We are honored to have Desmos founder Eli Luberoff speak at the 2017 Huron conference. Eli began his programming life on his TI-83 graphing calculator in elementary school, culminating with a working version of Monopoly which was destroyed when he removed the backup battery by accident. He began working on the software that would become Desmos.com during a year-long hiatus from Yale University in 2007, returning to graduate summa cum laude with degrees in Math and Physics in 2009. Eli was also selected by Bloomberg Businessweek as one of the top 25 entrepreneurs under 25 in 2011.

Eli will present sessions on both Friday and Saturday. His topics include the following:

Math for Every Student with Technology

One-to-one. Accessibility. Personalization. Internationalization. Low floor. High ceiling. What do these all have in common? Each is intended to make mathematics work for every student. Not just the confident students, not just the struggling students, every student. We'll explore the technology and techniques that can open doors, challenge the bored, empower the disempowered, enable the disabled, and turn every student into a mathematics student.

Technology and Intellectual Need

Every math notation, every word, every technique, solved a problem for someone somewhere. In this session, we'll explore how to use technology to place students in that same situation of intellectual need. In doing so, we'll see how to transform some of the most frustrating and tedious tasks -- e.g. memorizing mathematical vocabulary lists

Scatterplots, Regressions, and Optimizations, oh my!

This session goes out to the statistics nuts. Come explore data with the newly released regression feature on Desmos. Learn how to fit any model, in any form, and how to watch it change in real time. Eli will explain what's going on behind the scenes with regressions in Desmos, and show some secret tips and tricks.

10 Things you didn't know you could do with a graphing calculator

According to Moore's Law, computers are 1,000 times as powerful as they were two decades ago. What does that mean for the types of exploration that's possible on one of the many graphing calculator apps for computers and tablets? We'll focus on the free Desmos app, as that's the one that Eli knows best, though many of the activities apply to any new graphing app.

What is "networked" content and why should I care?

If you printed out digital content, would it be any worse? How about if you disconnected the internet? Dan Meyer says that he applies these two tests to any digital content. In this presentation, we'll explore the meaning and importance of each of those tests. We'll then work through a few examples of networked content.



“Eli will present sessions on both Friday and Saturday.”



K-5 Corner

Let me start by wishing everyone a very happy new year! I hope your 2016 was fulfilling, and your 2017 has big potential. With this being my first article as the new elementary math liaison, I wanted to introduce myself.

My name is Merideth Wilkes, and I am currently a kindergarten teacher at Black Hawk Elementary in Rapid City. I am currently within my 5th year of teaching, and all have been in kindergarten. I finished my bachelors degree at Black Hills State University and double majored in Elementary Education and Early Childhood/Special Education. I then went on to complete my masters degree at Capella University in Early Childhood. After graduating with my masters in December of 2015, I decided to continue on and I am now working on my ED.S in Curriculum and Instruction through Capella University.

I have always loved working with young children, and I love to incorporate hands on learning in the classroom in all areas, but especially in math. I strive to provide several different hands on opportunities each day while students explore the world of mathematics. My belief is that every child is capable to learn at high levels, and it is up to us to provide them with the tools they need to be successful.

This past year I have had the opportunity to be a part of several teams that work in the area of mathematics. I serve on the math leadership team for Rapid City Area Schools, and we are currently working on an implementation guide and updating the pacing guide for elementary teachers. I was also on the curriculum team that worked last school year to research, pilot, and choose the current curriculum being used to teach math in the Rapid City Area School District. Finally, I am excited to be a part of a team that traveled to Pierre this past summer to begin the process of revising the math standards for the state of South Dakota. I am looking forward to working on that again this summer in Pierre.

Aside from teaching, I am a mother of one daughter who just turned 8 years old. She is always active and has kept us busy these past few years with dance. She is currently on a dance competition team that will travel several times starting in February. It is truly never a dull moment in our home!

I am looking forward to serving as your elementary math liaison, and if at any time you have questions or topics of interest please let me know. I am excited to learn and share with you!



“I strive to provide several different hands on opportunities each day while students explore the world of mathematics.”

Share the Classroom Treasures

“Sharing” the treasures has been quite popular at the SDCTM/SDSTA Conference. Don’t forget to start a box of classroom treasures for the 2017 conference.



*PLEASE - No Textbooks or broken/non-working equipment.
Although it may feel like yours, make sure it is. If it's marked "School Property," please leave it in school.*



9-12 Spotlight

I hope this article finds you all rested, rejuvenated, and ready to get back into the classroom teaching. I would say back to work after the Christmas break but I know all of you did teacher stuff during our days off – just as did I. Once I get caught up grading papers, up-dating grades, and lesson planning – I like to brainstorm new activities for my classroom. My biggest inspiration for new stuff is my 6 year old daughter, Charleigh. I enjoy putting an educational spin on games that engage and challenge her at home. Scramble Square is my new classroom favorite, as the caption on the box states “easy to play but hard to solve.” Scramble Square puzzles have only nine square pieces. Each of which contains half of an each of image on each time. To complete the puzzle all nine pieces are arranged in a 3x3 grid and all the touch edges complete the image. I transformed this scramble square concept into a mathematical activity (see page 4). Students have to match up equations with correct answers instead of 2 parts of a picture. I really like this activity for a number of reasons. For example, I create an original puzzle that is usually 4x4 – 16 pieces that way I have different 3x3 puzzles and even 2x2 puzzles. Scramble Square is easy to differentiate with multiple levels of difficulty. There is an inherent repetition that goes along with playing the puzzle that reinforces key concepts. Great way for students to practice without doing a traditional worksheet. This activity also works well with partners and groups. I have found it really engages my students from the Pre-Algebra level to the Calc level. Check out one of my a Pre-Algebra Scramble Squares example at the end of this newsletter. If you would like more information or a template to create your own Scramble Square puzzle please email me lindsey.brewer@k12.sd.us Follow me on Twitter [@lindseybrewer](https://twitter.com/lindseybrewer) to see more ways I engage and motivate my students with activities and games. Wishing you all the Best in 2017 and hope to see you all in February at the Annual Conference.

Lindsey Brewer



“There is an inherent repetition that goes along with playing the puzzle that reinforces key concepts.”

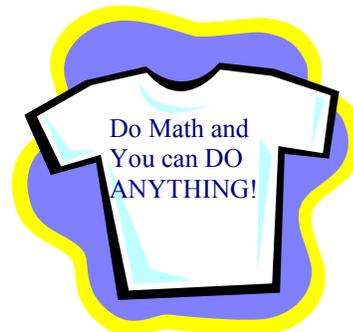


at



Classy T-Shirt Day

When you pack for the conference this year, don't forget your favorite Nerdy Classy T-shirt! We will all be sporting them on Saturday as we embrace our Math and Science Nerdiness!



*Nerdy Classy
T-Shirt Day
Saturday,
4 February, 2017!*

Ms. Brewer's Scramble Square

Pre-Algebra: Solving 1 Step Equations with Addition/Subtraction

$x = 8$ $4 = x - 10$ $01 = 3 - x$	$x = 13$ $5 - x = 6$ $2 = x - 2$	$x = 13$ $7 = x$ $x + 3 = 10$ $x + 1 = 1$	$x = 10$ $x + 3 = 10$ $01 = x$ $x + 9 = 10$
$x = 7$ $x - 6 = 8$ $9 = x$	$x = 3$ $11 = x + 8$ $x = 10$ $x + 3 = 3$	$x = 8$ $9 = 3 - x$ $x = 10$ $x = 8$ $19 = x$	$x = 9$ $x = 1$ $7 - x = 7$ $5 = 5 + x$
$x = 3$ $x - 3 = 3$ $5 = 4 + x$ $x + 4 = 9$	$x = 0$ $10 = x + 6$ $4 = x$ $41 = x$	$x = 8$ $0 = x$ $8 = x - 8$ $x - 8 = 6$ $6 = x$	$x = 14$ $x + 5 = 5$ $0 = x$ $02 = x$ $x = 14$
$x = 1$ $61 = x$ $8 = x$ $x = 14$	$x + 7 = 12$ $10 = x - 9$ $01 = 01 - x$ $1 = x$	$x = 20$ $18 = x + 9$ $4 = 3 + x$ $20 = 7 + x$	$x + 10 = 10$ $x = 1$ $9 = 01 - x$ $91 = x$



Higher Ed Viewpoint

I trust this letter finds you all with a sense of accomplishment over a successful first half of the school year educating our future leaders. I personally can't believe how fast the semester has gone by.

First of all, I would like to pass on some important dates that are happening on the university campuses this spring.

Northern's Annual Math Contest - April 19, 2017

USD's Annual Merten Hasse Math Competition – April 22, 2017

West River Math Contest at SDSMT – May 8, 2017

State Science Olympiad Contest (USD) – April 1, 2017

Another point of information that I was asked to pass along would be about high school transcripts. Our current math placement policies have the Smarter Balance scores as one option for students to place beyond remedial math at the university level. Students scoring a 3 or greater can skip the remedial math class they may have placed in via the math index score. Please encourage your schools to include the Smarter Balance math scores on the transcripts so they have that option.

Also, I would like to inform you that SDSMT has received a grant from NASA to provide outreach to students and teachers related to the mathematics of astronomy. The grant will involve some short courses for teachers that can be used for continuing education credit and other activities to engage students in the mathematics of tracking the cosmos. They will have someone at our conference in Huron to provide more information so please stay tuned.

Finally, if you are looking for an educational vacation for the high school student in your family that may be interested in computers, the World Finals of the International Collegiate Programming Contest will be held on the campus of SDSMT from May 20-25, 2017. This is a collegiate competition so they can't participate but they may enjoy seeing the competition and learning more about it. You can learn more about it from the website <http://www.icpc2017.org/>.

I hope to see you all in Huron in February and that you also have a great second half of the school year. Here is to a light winter of snow and above average temperatures. Hey, a guy can dream can't he...

Best wishes,

SDCTM Liaison to Higher Education
Professor and Dept. Chair
The University of South Dakota



“Students score a 3 or greater (on the Smarter Balance test] can skip the remedial math class.”



A Word from Nicol

This time of year is always a time of reflection for me, personally and as an educator. I always enjoy the time to really think about the things I have learned in the past year and the challenges I would like to reflect upon and tackle. In that spirit, I would like to share some things that I have learned in 2016, along with a challenge to tackle.

One great resource that I learned about and had a great deal of fun playing around with was the “Which One Doesn’t Belong?” website. (<http://wodb.ca/>) This website provides puzzles for students (or anyone) of any age to solve that can be easily integrated into your classroom. The puzzles cover a wide range of topics from shapes to functions, and there are also opportunities for students (or you) to build their own puzzle. Once you check the puzzles out, I bet you will be hooked! And I bet your students will love them, too! For those of you who enjoy picture books, there is also the “Which One Doesn’t Belong?” picture book and teacher guide to check out as well.

A second resource that has caught my eye is the **Open Middle** website. (<http://www.openmiddle.com/>) This resource provides challenging math problems linked to grade and course level standards. These problems are unique in that they have portions that are open where students can insert numbers or symbols to find many solutions. The problems are classroom ready and can be used with a projector or printed to be worked on in pairs or groups. Because there are multiple solutions, the Open Middle problems are a great way to create situations where students can discuss, compare, and justify their solutions. This is a fantastic, valuable, easy to use resource!

My last tidbit is a problem that came to me through email originally, but it created quite a storm on twitter. Check out the **How Much Were Those Pennies Problem** on Robert Kaplinsky’s blog. (<http://robertkaplinsky.com/work/much-money-pennies/>) The problem and its comments are humorous and sad all at the same time, perhaps highlighting some of our challenge with numeracy skills in the classroom. The blog post from Robert explains the problem, shows some of the commentary from twitter, and then at the very end links the problems to the math standards that could be highlighted in the problem.

My challenge to you: please don’t forget about diving into the **newly proposed state math standards**. (<http://doe.sd.gov/contentstandards/math-review.aspx>) We need your **feedback!** Both the standards and the grade level introductions are posted on the state website, along with a link to the Standards Toolkit which holds a link to the feedback survey and ideas for ways to dig into the standards. Please email me if you have any questions or need help with the website or standards. (Nicol.Reiner@state.sd.us) Educators have until May 15, 2017 to dig into the standards and offer feedback about both the things that need change **and** the things that are appreciated. In June, the Standards Work Group will be meeting again to take a look at the feedback and decide if any further changes need to be made. Then the standards go to the community for feedback. Your feedback is **ESSENTIAL** to quality math standards for all of the children in South Dakota. Thanks for taking time to offer your expertise!

I wish each of you the best in 2017!

Nicol Reiner
SD State Math Specialist
Nicol.Reiner@state.sd.us



“I would like to share some things that I have learned in 2016, along with a challenge to tackle.”

Math Proposed Standards		
Proposed State Standards Per Grade		
Math Standards Introduction - Coming soon	Summary of Proposed Changes	Standards Toolkit for Districts
Kindergarten	Introduction	Content Standards
First Grade	Introduction	Content Standards
Second Grade	Introduction	Content Standards



McCann Scholarship

A scholarship in memory of long time SDCTM member and officer Diana McCann has been established for the benefit of college students preparing to become a math teacher. Rising seniors studying math education at any post secondary institution in South Dakota are eligible. The scholarship will be awarded at the annual SDCTM/SDSTA Conference.

Donations to the McCann Scholarship can be sent to Security State Bank 1600 Main Street, Tyndal SD 57066. One hundred percent of all donations will be used to fund the scholarship.



Presidential Awards Nominations

**Know a Great 7-12 Mathematics Teacher?
Nominate him or her to receive the Presidential Teaching Award!**

We're looking for outstanding 7-12 mathematics and science teachers for the 2017 Presidential Awards for Excellence in Mathematics and Science Teaching. The awards are sponsored by the White House and administered by the National Science Foundation.

Every year up to 108 National Awardees each receive a \$10,000 award, a paid trip for two to Washington, DC to attend a week-long series of networking opportunities and recognition events, and a special citation signed by the President of the United States.

The program will be accepting nominations of 7-12 teachers for the nation's highest honor for mathematics and science teachers beginning October 1, 2016. Anyone can nominate an outstanding teacher. Teachers should submit completed application materials by May 1, 2017.

For more information, including nomination and application forms, please visit www.sdctm.org and click on the Presidential Awards link. Teachers may also visit the PAEMST website at www.paemst.org for more information.

Allen Hogie
SD PAEMST Mathematics Coordinator





SDCTM Elections 2017

President-Elect - Crystal McMachen I have been teaching for the Rapid City Area Schools since 2001. During that time, I have taught all middle school levels and core subjects but teaching math is definitely my passion. Currently, I am working on getting my National Board Certification in Early Adolescence/Mathematics. I have been the Middle School Liaison for SDCTM since August 2015. I am on the Standards Revision Committee for 8th grade and a Virtual Mathematics Coach for the SD DOE. I am also the 2014 recipient of the Presidential Award for Excellence in Mathematics and Science Teaching.

Vice-President - Steve Caron I've been teaching 9-12 mathematics at Aberdeen Central High School since 1983. I've taught all levels of mathematics from regular Algebra I to Advanced Placement AB Calculus. My usual teaching load is Algebra I, Honors Geometry, and AP AB Calculus. I have also been teaching College Algebra at Northern State University for the past 6 years. In addition to my teaching load, I am the Treasurer of the Aberdeen Educational Association and your teacher representative on the South Dakota Retirement Board of Trustees for past eight years. Lastly, I have been the your conference registrar since 1998.

Secretary

Lori Stverak I have been a member of SDCTM and NCTM since 2012, and have served on the board since that time. I started as the board's Elementary Liaison and served in that capacity until being elected to serve as Secretary in 2014-2016. I taught elementary school in Sioux Falls for 14 years before moving to Rapid City in 2013. I am now in my 18th year of teaching, and currently a Special Education teacher at Valley View Elementary in Rapid City. I was a State Finalist for the Presidential Award for Excellence in Math and Science Teaching in 2012 and 2014, and have also taught math workshops for the South Dakota Department of Education. I have a Masters in Reading Instruction from the University of Sioux Falls, and a Math Specialist Endorsement from Black Hills State University.

Amy Schander I began my teaching career in 2001 and since that time I have taught a variety of subjects including Algebra I, Geometry, Algebra II, Pre-Calculus, Physics, and Physical Science. I taught for 15 years at Sioux Falls Washington High School where I was also the math department chair. In 2016, I began teaching at Yankton High School. I have worked on several projects for the SD Department of Education including the development of end-of-course assessments and the development/revision of math standards. I am passionate about mathematics education in our state, and would be honored to serve on the executive board of the South Dakota Council of Teachers of Mathematics.

Treasurer - Jay Berglund I am the high school mathematics teacher at Gettysburg High School, teaching Pre-Algebra, Algebra 1, Geometry, Algebra 2, Pre-Calculus, and AP Calculus. I have been in Gettysburg for 16 years and have previously taught at St Francis Indian School in St Francis SD and at Valentine High School in Valentine, NE. I have been actively involved in SDCTM and have held the positions of secretary, president and am currently the treasurer. I have been fortunate to have been involved with several committees with the SD Department of Education including standards writing, test item writing and review, and others. I have also had the opportunity to review test items and data for Smarter Balanced. In 2011, I received the Daktronics Outstanding Mathematics Teacher Award. I am happily married and have been blessed with seven daughters, six grandsons, one granddaughter and one great-grandson. Most of my spare time is spent doing things with my family including fishing, camping, biking, and church activities.

NCTM Representative - Mark Kreie I teach geometry and advanced algebra 2 at Brookings High School. This is my 15th year of teaching, and my 4th in Brookings. I earned my undergraduate degree in 2002 from University of Minnesota – Morris and my Master's degree in Curriculum and Instruction in 2015 from Black Hills State University. I was a 2015 PAEMST state finalist



Appointed Positions

- Webmaster -
Cindy Kroon
- Newsletter Editor -
Sheila McQuade
- Public Relations -
Leah Branaugh
- Conference Chairperson-
Jean Gomer
- Liaisons
 - Post-Secondary -
Dan Van Peuresem
 - Secondary -
Lindsey Brewer
 - Middle School -
Sarah Gross
 - Elementary -
Merideth Wilkes



From the PR Desk

Greetings Math Educators! As we approach the semester break of our current school year, I would like to welcome you to our Social Media pages as a way to stay connected to others in our field. The creation of our Twitter, Instagram, and private Facebook pages took place last spring; however the pages have been fairly quiet. Social Media is so popular in our everyday lives and can be such a great tool to network with others and gain new perspectives and ideas to use in your classroom or professional careers. We would like to showcase not only announcements of professional development opportunities, conferences, awards and scholarship/grant opportunities for teachers but also what great things you are doing inside your classrooms. Please forward me items that you may want posted on Social Media and I would be happy to update them to our pages. For those that are a little leery of using Social Media, I would be happy to help assist in setting up accounts or the basics of using these pages.

Please find our Social Media Pages at the following places:

Twitter: @SouthDakotaCTM

Instagram: @SouthDakotaCTM

Facebook Page: South Dakota Council of Teachers of Mathematics (please request to join)

I have also attempted to use the hash tag #sdctm to link our posts on Twitter and Instagram to make them easier to find. If you use the hash tag #sdctm, I can re-tweet your message out for others to see.

Make a New Year's Resolution to join one of our pages and expand your professional network and see our followers grow!

Leah Branaugh
SDCTM Public Relations



“I would like to welcome you to our Social Media pages as a way to stay connected to others in our field.”

Calculus Dominoes

The Calculus Dominoes game is a fun classroom activity for groups of two. I used this particular set with my students to review key concepts that needed to be reviewed before taking the semester exam. There is only one possible solution to the activity. Dominoes (pgs 12-17) need to be joined end to end with no doubling up. Each team also turned in their written work to justify each connection. All groups received 10 points for completing the activity. This activity allowed me to assess student understanding as I circulated from group to group listening to problem solving strategies as well as offered all students a different format to apply their understanding.

Allen Hoagie
SDCTM President Elect



START

$$\lim_{x \rightarrow 0} \frac{\tan x}{x}$$

1

$$\lim_{x \rightarrow 9} \frac{\sqrt{x-5} - 2}{x-9}$$

 $\frac{1}{4}$

$$\lim_{x \rightarrow 2} \frac{\frac{1}{x} - \frac{1}{2}}{x-2}$$

$$-\frac{1}{4}$$

$$\lim_{x \rightarrow 1} \frac{\tan^{-1} x}{\sin^{-1} x + 1}$$

$$\frac{\pi}{2\pi + 4}$$

$$\lim_{x \rightarrow \infty} \frac{\sqrt{x^2 - 14}}{3 - 2x}$$

$$-\frac{1}{2}$$

Simplify.

$$\sin^2 x + \cos^2 x$$

1

Name the y-intercept(s)
of:

$$f(x) = -\sqrt{25 - x^2}$$

-5

Name the x-intercept(s)
of:

$$f(x) = -\sqrt{25 - x^2}$$

± 5

Odd or Even?

$$f(x) = 5 - |x|$$

Even

Odd or Even?

$$f(x) = \csc x$$

Odd

Solve for x.

$$\cos x = \frac{-1}{2}$$

$$x = \frac{2\pi}{3}, \frac{4\pi}{3}$$

$$\frac{d}{dx} \cot^2 x =$$

$$-2 \cot x \csc^2 x$$

$$\frac{d}{dx} \csc^2 x =$$

$$-2 \cot x \csc^2 x$$

Interval	(-4,-1)	(-1,2)	(2,3)	(3,5)
$f'(x)$	+	+	-	+
$f''(x)$	-	+	-	+

Relative Maximum at $x = 2$

Relative Minimum at $x = 3$

Interval	(-4,-1)	(-1,2)	(2,3)	(3,5)
$f'(x)$	+	-	-	+
$f''(x)$	-	+	-	+

Point of inflection at
 $x = -1$ and $x = 3$

Domain for

$$f(x) = \frac{\sqrt{x-5}}{5-x}$$

$(5, \infty)$

Range for

$$f(x) = \sqrt{25 - x^2}$$

$[0, 5]$

FINISH

South Dakota Council of Teachers of Mathematics

SDCTM 2017 Summer Symposium

July 12, 2017

Creating Collaborative Classrooms: Engaging Students in Meaningful Learning of Mathematics

Instructor: Chris Mikles

Save the Date!

Cost:
SDCTM Members
TBD
Nonmembers
TBD

Registration: 8:00 am
Session 8:30-4:00

**Registration
deadline will be
May 30, 2017**

Teachers report challenges in implementing the strategies that make students college and career ready in the 21st century.

- How do you keep students engaged on interesting math problems?
- How do you make sure students are discussing rich, mathematical concepts and ideas?
- How do you shift the teaching focus from covering topics to deepening students' understanding of the mathematics in each course?

In this workshop, teachers will experience the excitement of engaging mathematical lessons while discussing the mathematics with colleagues. Participants will learn how to adjust lessons to promote mathematical discourse while also experiencing strategies they can use to facilitate discussions as students grapple with engaging problems. This seminar is appropriate for grades 6 -12 teachers.

- Location: DWU Campus Mitchell, SD
- DWU graduate credit will be available for an additional \$70 tuition.
- SDCTM members will receive discounted registration cost.

Registration will be limited to a maximum of 32 participants (first come basis) for the session. Minimum 16 participants required.

Activities will be applicable for grades 6-12.

Bring your laptop or tablet

SDCTM is an Affiliate of the National Council of Teachers of Mathematics.

SAVE the DATE!

Cost and registration information will be available soon.

“GOEHRING/VGKTZ LEADERSHIP SCHOLARSHIP”

“The Goehring/Veitz Leadership Scholarship” has been established to encourage new teachers of math and science to become professionally involved on the state level. The scholarship, which is good for a free one or two day registration at the Joint Conference of the South Dakota Council of Teachers of Mathematics and the South Dakota Science Teachers Association, is available to any teacher who meets each of the following criteria:

- Is a K-12 teacher of math or science who is in the first year of teaching in SD
- Is a member of SDCTM and/or SDSTA Applicants must pay their own dues to the chosen organization.

The application process is simple. Fill out the form below, have it signed by the building principal, and mail it to Steve Caron along with the regular conference registration form which is available at www.sdctm.org.

APPLICATION
“GOEHRING/VGKTZ LEADERSHIP SCHOLARSHIP”

Name:

School District:

Teaching Assignment:

Membership Information:

_____ I am already a member of SDCTM SDSTA (Circle one or both)

_____ I am joining SDCTM and/or SDSTA (Circle one or both)

I am enclosing a check for

_____ \$5.00 for Elementary Math and/or \$5.00 for Elementary Science

_____ \$20.00 for MS/HS Math and/or \$20.00 for MS/HS Science

<p>(Name) _____ is in his/her first year of teaching in SD at _____ School District during the _____ school year and is thus eligible for ‘The Goehring/Veitz Leadership Scholarship.’</p> <p>Signed: _____, Building Principal</p>

2016 SDCTM/SDSTA JOINT CONFERENCE

Conference information and program booklets will be available online at www.sdctm.org and www.sdsta.org

ADVANCE REGISTRATION

Crossroads Events Center, Huron South Dakota
February 2-4, 2017 1-800-876-5858

Please print clearly. Postmark by January 20, 2016. After this date, please register on-site.

Name _____
 Permanent Address _____
 City _____ State _____ Zip _____
 School/District _____ E-mail _____
 Home phone _____ School Phone _____

Please check the appropriate categories for membership, conference registration, and banquet.

NEW! Use online Registration form for 2017 Conference! Go to www.sdctm.org Please register onsite after Jan. 20, 2017.

1. SDCTM/SDSTA MEMBERSHIP and DUES
 Please check the appropriate categories. You may join one, both, or neither organization.
 Begin/renew SDCTM (math) for one year _____ Begin/renew SDSTA (science) for one year _____
 _____ Elementary \$5 _____ Elementary \$5
 _____ Middle School \$20 _____ Middle School \$20
 _____ High School \$20 _____ High School \$20
 _____ Secondary \$20 _____ Secondary \$20
 _____ Student \$5 _____ Student \$5
 _____ Retired \$5 _____ Retired \$5
 _____ Other \$20 _____ Other \$20
 Note: First year teachers may qualify for a scholarship providing a free registration. See www.sdctm.org for details.

2. CONFERENCE REGISTRATION
 Please check the appropriate categories. Noon luncheon is included for each day that you register.
 NOTE: The Friday night banquet is NOT included. Banquet tickets may be purchased for \$25 each.
 I will attend the conference on (check one): _____ Friday _____ Saturday _____ Both days
 SDCTM or SDSTA Member _____ Non-Member _____ Student Member _____
 _____ One day \$50 _____ One day \$100 _____ One day \$15
 _____ Two days \$75 _____ Two days \$125 _____ Two days \$25
 College credit will be available; information on registration will be available at the conference registration table.

3. PAYMENT: By Check Only
 Make checks payable to SDCTM.
 SDCTM does NOT accept credit cards or purchase orders.
 Membership(s) total \$ _____
 Registration \$ _____
 Friday Night Banquet (\$25 each) \$ _____
TOTAL ENCLOSED \$ _____
 Requests for refunds must be received by January 20, 2016

4. SEND THIS FORM WITH PAYMENT
 Steve Caron
 907 South 16th Street School phone (605) 725-8208
 Aberdeen, SD 57401 Home phone (605) 226-2292
 Email questions to: steve.caron@k12.sd.us
 Advance registration must be postmarked by January 20, 2017.
 After this date, please register on-site.
 Please check here if you have also submitted a speaker proposal form for the 2017 Conference.



Print a copy of this form. Mail with check payable to SDCTM to:

Jay Berglund
204 S. Exene Strert
Gettysburg, SD 57442

Name _____

School Name _____

Subjects or Grades Taught _____

Addresses

Home _____

School _____

Mailing Address: _____ Home _____ School _____

Home Phone _____

School Phone _____

Fax Number _____

E-mail _____

Membership categories (Check only one)

- _____ Elementary School \$5.00
- _____ Middle School / Junior High \$20.00
- _____ High School \$20.00
- _____ Post Secondary \$20.00
- _____ Retired \$5.00
- _____ Student \$5.00
- _____ Other \$20.00

We now offer the option to use PayPal to pay your dues for a minimal processing fee of \$1.00. The processing fee will cover the processing fees incurred by SDCTM and fees charged for having checks cut by PayPal.

*Instructions can be found online at:
<http://www.sdctm.org/joinsdctm.htm>*



SDCTM Newsletter
C/o Sheila McQuade
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www.sdctm.org