



Wahpe Woyaka pi (Talking Leaf)

South Dakota Council Teachers of Mathematics Newsletter

SUMMER 2018-2019

Presidential Ponderings

Happy July Everyone!

I recently saw this meme on Facebook and it really resonated with me. I feel like my brain never shuts off. Even though it is summer, I keep thinking about school and work related to school. This is just who I am. The first item that is on my mind is our Summer Symposium. I cannot wait to hear all the amazing things Sharon Rendon is going to share from NCTM Taking Action: Implementing Effective Teaching Practices. Sharon has been a leader in South Dakota and across the nation. She will bring an energy that is contagious! If you are joining me on July 10th, don't forget to bring a computer and sign-up for graduate credit from DSU. The link for the credit is below. If you cannot make it this year, mark your calendars for next year. Sara Van Der Werf was a favorite at our SD STEM ED conference this year. She packed the room and the reviews on her sessions were outstanding. I am pleased to announce that she has agreed to come to South Dakota again and lead our 2020 Summer Symposium. Right now, we are tentatively scheduled for July 15, 2020!



Speaking of the SD STEM ED conference- This year we are going paperless! Check out our website for information pertaining to the conference including the speaker proposal forms. Summertime would be a perfect time to be thinking about a session you may want to lead. Is there an activity that you would like to share? Are you doing something innovative you think would be good for other teachers to learn? Are you looking for ways to grow as an educator? One of the most amazing things about our conference is hearing and collaborating with teachers across South Dakota. You will not find a friendlier audience than SD teachers. If presenting was never something you considered, seriously think about it, check out our website, and submit a proposal by October 30th. You will not regret it!

During the summer though, I think it is important to also focus on non-school related items that are important to us. My sister-in-law just finished her second year of teaching middle school math in Texas. This is her second career and her husband, my brother-in-law, commented on the fact that being married to a teacher is different. He said that her time spent on teaching is “really on or really off.” He noticed that there are these really, crazy-busy times and then times where there is not much going on. He had been hearing this from my husband for over 15 years, but it never really clicked until he experienced these highs and lows for himself. I need to remind myself to enjoy this “time of not much going on.” So I’m going to close this summer article with some much needed advice for all teachers: Focus on you, focus on your family. Take time to recoup and rejuvenate. Before we know it there will be a new crop of students entering our classrooms who will need us to be on our A-Game!

<https://store.dwu.edu/NonDegreeCredit>

<http://www.sdctm.org/conference/annualconference.htm>.

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Wahpe Woyaka pi

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Calendar Notes:

- 2019 Summer Symposium July 10, 2019
- SD STEM Ed Breakout Session Proposals Due October 31, 2019
- SD STEM Ed Early Bird Registration deadline December 15, 2019
- SD STEM Ed Pre-Registration ends January 24, 2020
- 2020 SD STEM Ed Conference February 6-8., 2020



Musings from Sheila

This past year, I taught an Algebra IA class in addition to my Geometry classes. It was a learning experience for me as well as for my students. I hadn't taught Algebra I (or IA) in more than 15 years. I have helped students in my study halls (when I've had a study hall) and even helped my own children when they progressed through their math courses, but I haven't taught an Algebra I course influenced by the Common Core Curriculum. All and all, it went well enough. My students learned and were successful and so I'll consider it a "win".

The most challenging thing for me was to plan ways for my students to encounter the information in different ways so that they could come to truly understand and synthesize the information rather than just completing the work through rote memorization. One such activity was in relation to the equation of lines. My students had achieved some mastery (I thought) in determining the slope and intercept of a linear equation but were struggling with the graphing of the lines. They had successfully graphed lines at the beginning of the chapter, but once we started working with the equations and determining the slope and intercepts it was as if they had never graphed a line! They didn't truly understand slope and intercept. Given an equation, they could find the slope and the x and y intercepts but given a graph of a line, they couldn't identify them. I set up the following activity (game) to help them make the connections.

Materials needed:

Graph Sheets (pp 3-4) - One sheet was on purple paper, the other on pink, laminated

Scratch paper & writing utensil

Teacher questions (p. 5)

Activity:

The teacher reads the clues one at a time allowing time for students to answer. Students select the graph(s) they feel will satisfy the characteristic and write the letter (or number) on their paper. The initial clues should only have one graph that it "fits". Once students understand the expectations, the clues should progress so that it takes multiple clues to narrow down the choices to a single graph.

Modifications/Extensions:

- * Set up a Google form as an answer document eliminating the need for scratch paper as an answer sheet.
- * Have students make up clues in regards to the line features being studied. They must use the math vocabulary (i.e. positive/negative slope, horizontal/vertical lines, x -intercept, y -intercept etc.)
- * Cut the graph sheets into cards so that students may sort them into groups according to the current clue.
- * Give students blank graph paper and have them draw the lines described by the clues
- * Have students rotate the graph pages to get a new set of graphs.

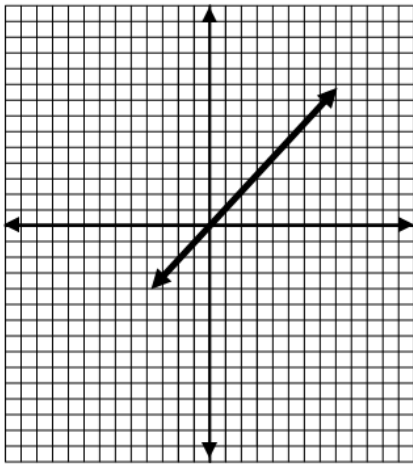
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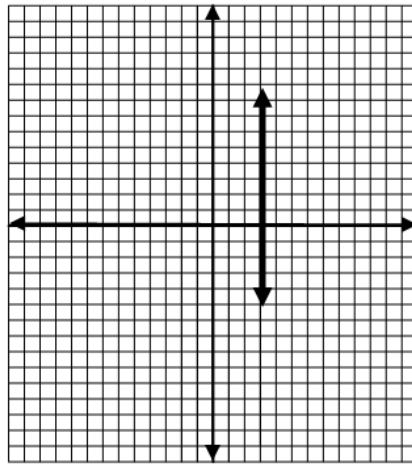
“students [to] encounter the information in different ways so that they could come to truly understand and synthesize the information...”



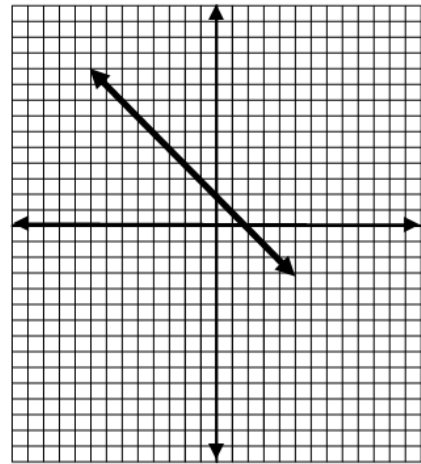
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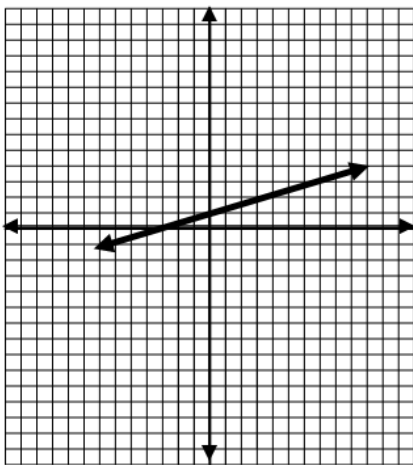
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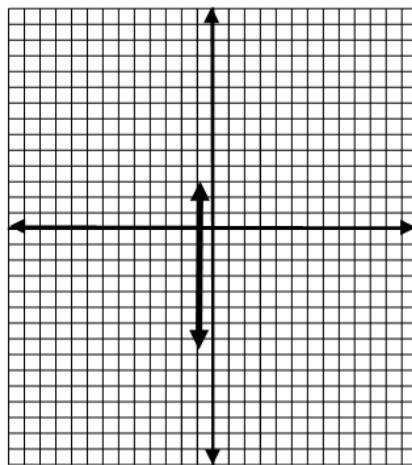
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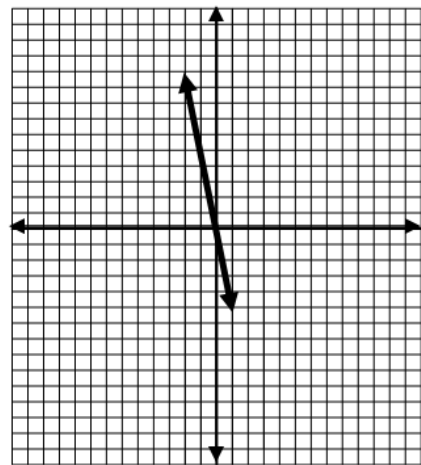
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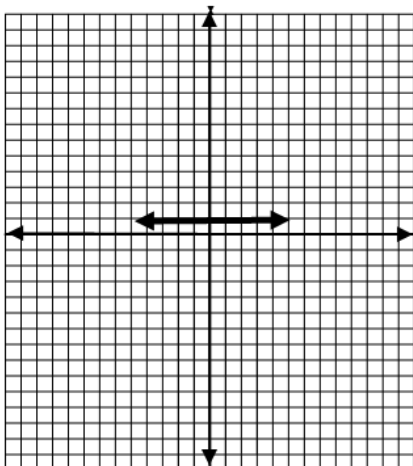
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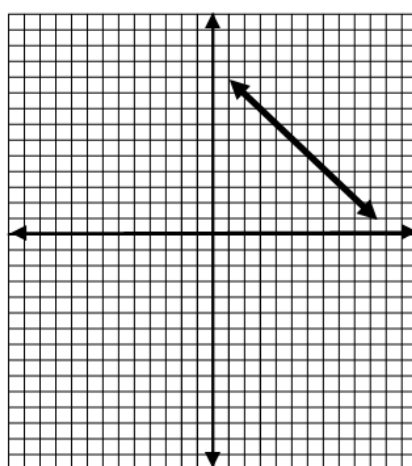
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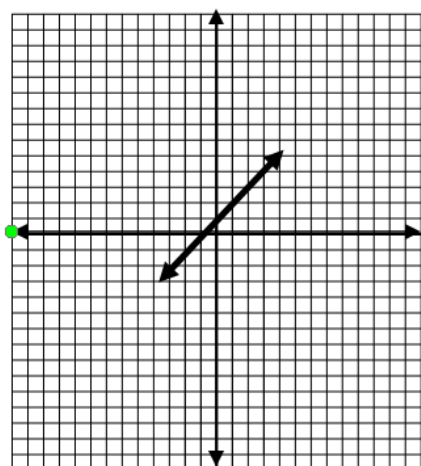
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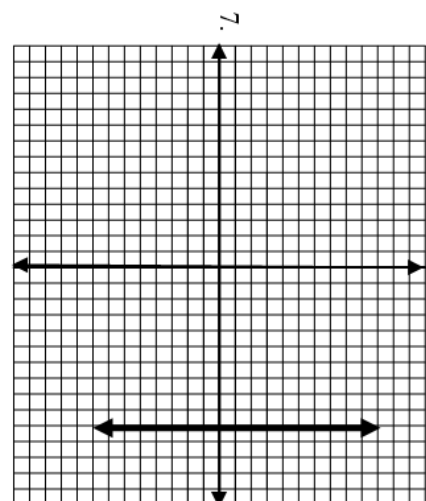
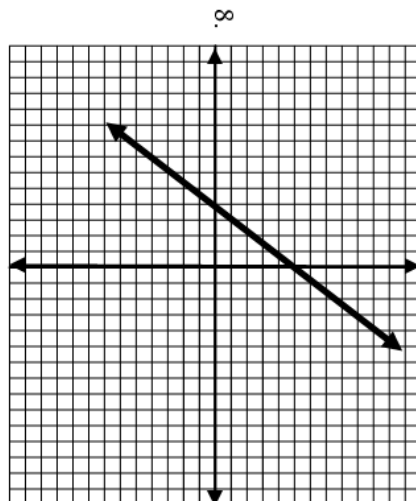
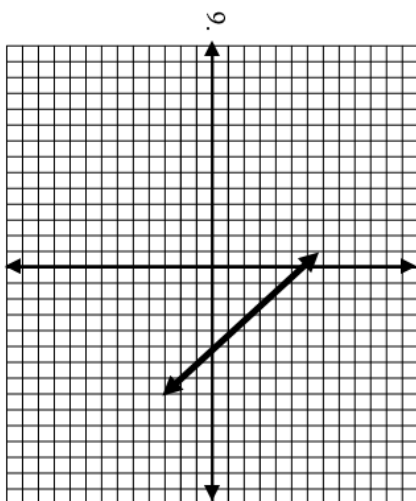
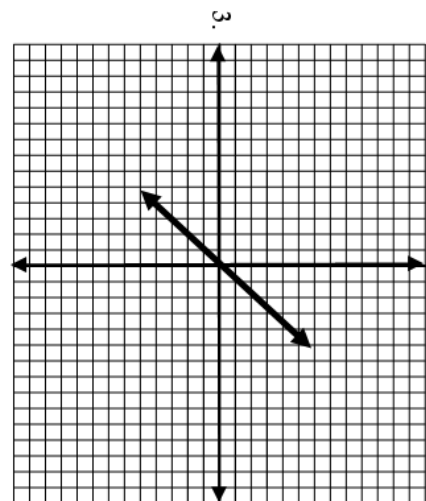
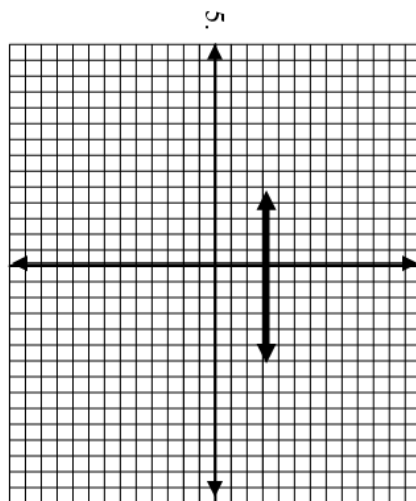
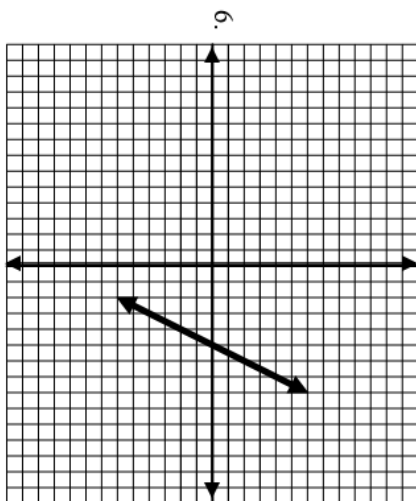
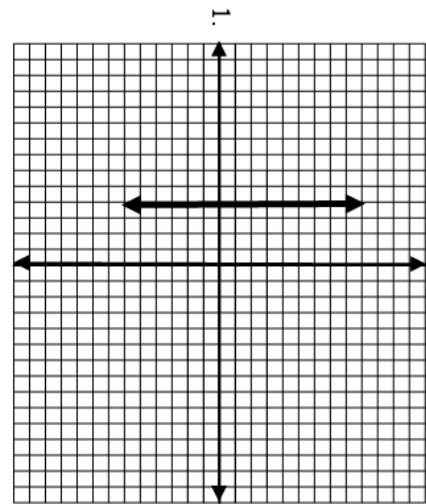
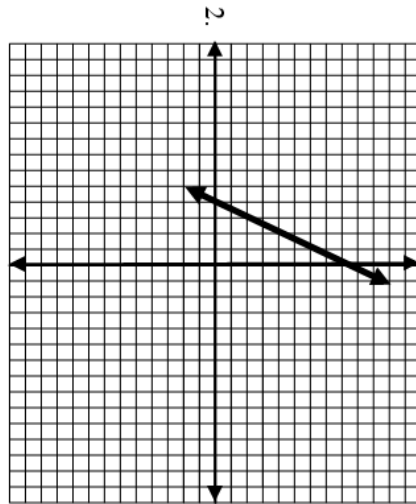
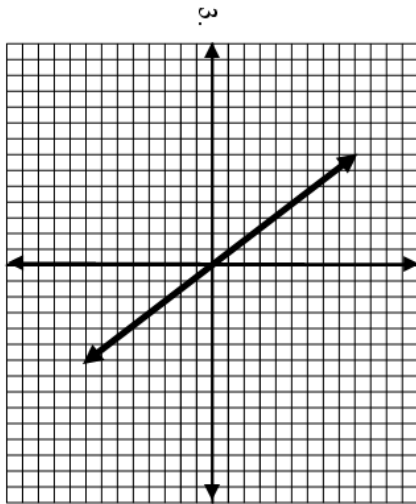
H.



I.



Guess the Line





Guess the Line

Teacher Clues

Purple page – Graphs A – I only

Find the line that “fits” the clue given.

1. Which line is a horizontal line?
2. Which line has a slope of positive $\frac{1}{2}$?

Answer: G

Answer: D

Find the lines that fit the first clue in each set.

Then, using the remaining clues in each set to narrow the answer to a single line.

- 3A. The line has a y-intercept of 0.
- 3B. The line has a positive slope.

Answer: A

- 4A. The line has an undefined slope.
- 4A. The slope has an x-intercept of -1.

Answer: E

- 5A. The line decreases (falls) left to right.
- 5B. The line has a slope of -1.
- 5C. The line has a y-intercept of 10.

Answer: H

Pink page – Graphs 1 – 9 only

Identify the line that fits each of the three clues given.

- 1A. The line has a positive slope.
- 1B. In the equation of the line, $m = 1$.
- 1C. In the equation of the line, $b = 0$.

Answer: 4

- 2A. The line has a slope of positive 1.
- 2B. The line has an x-intercept of -4.
- 2C. The line has a y-intercept of 5.

Answer: 8

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K-5 Corner

Summer Greetings!

I hope you are all finding time to refresh and reflect. You all did something wonderful during the school year. Celebrate your successes. I thought I would share two more “games” I use in the classroom. One I will explain, the other I am going to give you a link for. The creator of the game has a great explanation. They can easily be adapted for higher and lower levels. I apologize if these are old news. I like to think I am “hip and cool” but my five year old reminds me that is not always the case.....

On a side note, I bought a set of number cards at the Target Dollar Spot – printed numbers 1-40 on one side and a model of that number using objects on the other side. My five year old recently took them along to a restaurant. My husband and daughter spent the entire time we waited for our food (30 minutes) playing with those cards. They played a guessing game giving various clues; odd, even, higher, lower, in between. Let me tell you, it made my teacher/math/problem solving/parent heart so happy. She didn’t want to stop playing when the food arrived. So simple, so much thinking, and so much better than using a tech device.

Game 1:

SANTA, also known as SKUNK, also known as any word you want to use to match the time of the year you need a little math game break for. I learned this game from an instructional coach. I also found it explained at NCTM.org.

Each letter of “SANTA” or “SKUNK” represents a different round of the game. Play begins with “S” and continues through the next letter. The object of the game is to accumulate the greatest possible point total over the five (or however many letters) rounds. The rules are the same for each of the five rounds. This is how I play for whole group in the 4th grade classroom:

Everyone in the class should starting in standing position.

Roll two dice – I display them using a doc camera because I play this game as whole group, add or multiply the numbers, record it in his/her column. If a student wants to be “safe”. They sit down and bank their points. They are not allowed to keep adding to the point total for the round if they sit. If they want to risk it, they stay standing, watch for the next roll, add or multiply the numbers and add to the running total of the round.

If a “one” comes up, play is over for that round and all the player’s points in that column are wiped out, unless they chose to sit down earlier. If double “one” is rolled, all points are wiped out from previous rounds also!

If a one or double one comes up on the first roll, you decide how you want to play – face the consequences, or re-roll.

This game can easily be adapted – use only one die, add, multiply, use a larger sized die, fractions, play as a whole group, play as partners or small group, etc.

Any questions, I would be happy to clarify or send a video to you of the game in action.

Game 2:

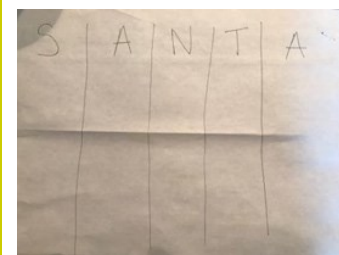
<https://www.google.com/amp/s/www.saravanderwerf.com/5x5-most-amazing-just-for-fun-game/amp/>

Have a wonderful summer!

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“...it made my teacher/math/problem solving/parent heart so happy. ... So simple, so much thinking, and so much better than using a tech device.”



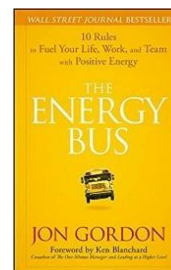


6-8 Highlights

Summer....It is a great time to refresh, recommit, and relax (add appropriate eye rolling if you are a mother of children like me!) One thing I really make sure to do in the summer is READ! I rarely have time during the school year, however in the summer I can always squeeze in a few minutes between lessons and taxing children around.

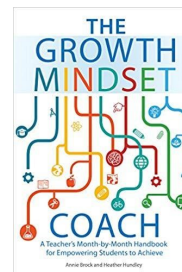
Here are three great books to help you REFRESH, RECOMMIT, and RELAX this summer!

1. If you want to REFRESH your mind and get ready for a great year, I suggest the book "Energy Bus" by Jon Gordon. It is a fictional book about someone who has lost their motivation and is hating everything about themselves and then they meet someone who helps them find their way. It is a QUICK, and I mean QUICK read, and such a great book to bring to your staff! I really encourage you to read it and then pass it on to a colleague!



"...take some time to Refresh your mind, Recommit to your passion, and Relax your soul!"

2. If you want to RECOMMIT to your vision as a teacher of Mathematics, I suggest the "Growth Mindset Coach" by Annie Brock and Heather Hundley. I read this last summer and have incorporated "mindset Monday" into my weekly math routine. It comes with lessons for each month, so all the planning is already done for you!



3. If you want to RELAX, my suggestion is #IMOMSOHARD by Kristin Hensley and Jen Smedley. Yes, it says mom in the title.... However If you are a woman, or LIKE women.... this book is full of laughs! I try to read at least one book that has NOTHING to do with teaching each summer, and this is one that I have bookmarked all sorts of stories to share with my friends.



No matter what your summer has planned, I hope that you take some time to Refresh your mind, Recommit to your passion, and Relax your soul! We all know that the first day of school always comes faster than we think!

Molly Ring
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9-12 Spotlight

Watch Out, Khan! High School Students Create Math Instructional Videos.

Well, I have been wanting to do it for years, so this Spring I took the plunge. As a review for the final exam, I had students create instructional math videos. We all learned a lot. (I learned that taking on a new project in the last 3 weeks of school is insane.) In the end, students created a library of instructional videos that we used to review for the final exam this year and that will serve as a resource for future students.

The Goal: My goal with this project was two-fold. 1) I wanted students to review their topic deeply. (You have to know the material to teach it.) 2) I wanted my students to be able to review math topics by watching videos created by their peers.

The Challenge: I started by creating a list of topics that were included on our final exam. These were the topics that students needed to review in preparation for the final. Students decided to work with a partner or work alone. Students then drew a topic from the list. Their challenge was to create a five-minute video that would review the topic for their classmates. The video needed to describe the topic and the location of the topic in our class (what unit?), give a link to an additional online resource, provide two completely worked practice problems, and provide a third problem for viewers to use as practice.

Examples of Final Exam Topics

1. Linear Word Problems
2. Linear, Quadratic, Exponential Regression Using Calculator
3. Solving a linear system
4. Solving linear inequalities
5. Finding equation of line given 2 points

Creating the Videos: I gave this assignment to both my Freshmen taking Math 1 and to my Juniors and Seniors taking Pre-Calculus with Trigonometry. Obviously, the math topics were different, but I also gave my upperclassmen more flexibility with video format. For my Freshmen, I suggested that they create the video using Powerpoint with animation and audio recording using the Record Slideshow feature. This was less glitzy than some other options, but students were able to create the videos using existing technology on school laptops. I gave the students 3 class days to work on the project. We took one day each week for the final three weeks of school. On the first day, students found their topic in their notes, found their online resource, and selected their practice problems. On the second day, students created their PowerPoint and added animation to show problems step-by-step. On the third day, students recorded their slideshow. On the last days of school, we watched the videos as our review for the final exam.

The Results: The students were able to create instructional videos and learned both some math and some presentation skills along the way. The quality of the videos was varied and reflected our novice status as video creators. Some of the things I learn included:

1. I need to find a way to gate-check the math. There were a few cases where there were significant math errors in the finished video. I asked students to submit their worked examples before creating the video, but not all students met that requirement.
2. PowerPoint is totally functional for this application, but there are a couple of things that we need to tweak. It is not possible to pause a PowerPoint slide show while it is playing, so we need to build wait time in before giving the viewer the solution to the final problem. Also, using the microphones built into the school laptops does not work in a classroom full of people. We must find ways to let students record in a quiet space. Finally, the PowerPoint video does not play correctly in the online version of PowerPoint, so viewers must have PowerPoint installed to watch the video.



“I learned that taking on a new project in the last 3 weeks of school is insane.”

continued



9-12 Spotlight *continued*

The Results: *continued*

4. I need a better system for collecting, storing, and grading electronic assignments. We are not a one-to-one school, so I do not collect assignments electronically. I was overwhelmed with emails and links and flash drives with files. As we move forward with technology, I would like to setup some sort of learning management platform for my class. I would love to have students post the video and then be able to watch and respond to other students work using a discussion board. I guess our district will be using Canvas in the future. I would love to hear what works for you.
5. The upperclassmen created some great videos using all sorts of different videos tools. The added flexibility allowed students to be more creative and to use some existing strengths in video design.

Check it Out: Want to see how they turned out? Go to Haarmath.weebly.com. You can find the Math 1 Videos under Math1 -- Math 1 Videos – Math 1 Student Videos. You can find the Pre-Calculus Videos under Pre-Calculus – Pre-Calculus Student Videos. Two excellent videos to check out would be Simplifying Quadratic Expressions in Math 1, Unit 7 and Challenging Trig Problems in Pre-Calculus, Unit 9. To watch a PowerPoint video, you have to open the video using PowerPoint offline.

Final Verdict: When I think about our mission to ensure that students have the skills necessary to be successful in the workforce, I am confident that this project which requires students to communicate their math thinking using technology is a noble endeavor. I will push forward next year looking for better ways to gate-check the math possibly using peer review, better ways to create quality videos using at least a quiet classroom or perhaps allowing a more varied set of tools, and better ways to allow students to view videos and respond to the creators perhaps using a learning management platform such as Canvas.

Want to try it?: I am always happy to share my materials as a starting point. Just let me know. By the way, I think it would be super cool to trade videos with another class across the state and let students peer review work from another class. If you would be interested in trying that with me, get in touch.

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Classroom Treasures

Did the spring cleaning bug bite you this year? I have been purging and tossing;/giving away excess in my classroom as well as in my home for the past 6 months. 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. Plan to 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.)

“I think it would be super cool to trade videos with another class across the state and let students peer review work from another class.”

“Bring your excess, good, working equipment or resource materials ...”



Higher Ed Viewpoint

Greetings from the BOR institutions across the state. Hopefully you are all enjoying a little bit of summer and some more time with family and friends. Maybe even some of those house projects are getting attention. I know mine tend to pile up during the school year.

On our campuses we are already busy with fast track registrations for incoming students this fall. In fact, the majority of students are now registered. With the new guidelines and Math Pathways that we discussed with you in Huron, it has created a few changes as to the popular courses that most incoming freshman take. It appears that College Algebra is no longer the dominant course of choice. Mathematical Reasoning, along with the co-requisite if needed, has gained a lot of momentum and is picking up a lot of ground at USD and the other campuses with a Liberal Arts emphasis. This is a great course for students that will not need the strong algebra skills or the abstraction of using many variables in an equation. However, our future scientists and engineers, should be taking the standard pre-calculus and calculus courses. If you have students interested in these tracks, do encourage them to take the dual credit pre-calculus courses instead of college algebra. It saves them the extra semester of needing to take trig before calculus if they only have college algebra. If there are ever any questions on this, please do not hesitate to ask.

Another item I mentioned in the last several newsletters was information about a graduate certification in math. This would be for those that want to be certified to teach dual credit courses in the system. To do so, you essentially need 18 graduate hours of math along with a masters degree. For those interested in doing so, we designed two separate graduate certificates of 9 hours each in order for you to obtain this certification. The six BOR institutions will take turns offering different courses that could be used for this certification. The table below lays out the criteria.

Courses slated for fall delivery on the various campuses are those listed below. If you are interested in any of these courses, I would encourage you to reach out to the chair at these institutions.

I hope you all have a very enjoyable and safe summer and get to spend some extra time with loved ones.

Sincerely,

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



Prefix	Number	Course Title <i>(add or delete rows as needed)</i>	Credit Hours
Abstract Component: choose one of the following			
MATH	513	Abstract Algebra I	3
MATH	514	Abstract Algebra II	
MATH	536	Number Theory and Cryptography	
MATH	537	Cryptography and Codes	
MATH	561	Geometry	
MATH	713	Advanced Algebra I	
MATH	714	Advanced Algebra II	
MATH	716	Theory: Algebraic Structures	
Analytic Component: choose one of the following			
MATH	523	Advanced Calculus I	3
MATH	524	Advanced Calculus II	
MATH	571	Numerical Analysis	
MATH	622	Difference Equations	
MATH	625	Advanced Calculus	
MATH	721	Complex Variables	
MATH	723	Real Variables I	
MATH	724	Real Variables II	
MATH	741	Measure and Probability	
MATH	751	Applied Functional Analysis	
Graduate Math Elective:			
Any MATH or STAT content course 500 level or higher not used as the Abstract or Applied Mathematics course for this Certificate.			3
Subtotal			9

Fall 2019			
University	On Campus	On Campus with DDN	Online
DSU			Math 561 Math 537
NSU		Math 512 (Linear Algebra)	
SDSU	Math 571 Math 625		Stat 601 (Modern Applied Statistics I)
USD		Math 514 Math 575 (Operations Research) Math 723	



A Word from Stephanie

Greetings,

Happy summer! I hope you all are finding the time to reflect, refresh and reboot this summer. I don't doubt that all of you have different ways of going about finding energy for starting the school year in August. I recently heard a speaker who stated teachers deserve every bit of their summer vacation and need this time to refocus for the fall! Take this time to read, learn, camp, fish, nap, hike, spend time with family and friends, or what ever it is that revitalizes you to go back the best possible you.

On a personal note, two of my sweet nieces graduated this spring. The first weekend of May, my niece Payton, made the trip across the stage at Black Hills State University, earning her degree in Outdoor Education. Over Memorial Day weekend, we made the fifteen-hour trek to Kalamazoo, Michigan where the eldest grandchild, on my side of the family, graduated from Comstock High School. She will attend Miami University of Ohio this fall with plans to study chemical engineering. Both graduations caused me to reflect on the girls' wonderful education experiences and my wish that more students in our state and nation had similar experiences and the same love of learning as both girls. The celebrations also made me feel incredibly old and very proud, in addition to providing some wonderful time with family, a perfect remedy for rejuvenating my soul!

As I have written in past newsletters, the South Dakota Mathematics Content standards will be fully implemented this fall and assessed in the Spring of 2020. One of the highlights of my summer, thus far, is facilitating two unpacked cluster document workshops, discussing these new standards, components of the documents and exploring best practices to use the documents to implement these standards. At the Mentoring Academy the first week of June, Teresa Berndt, the Department of Education Reading Specialist, and I facilitated a one-hour workshop focusing on the new standards and the unpacked documents. It was great to see the connection between new teachers and their mentors, and their energy in implementing the new standards. Teresa and I then traveled to Chamberlain the next week to each facilitate a full day teacher workshop. Here, the teachers focused in on three key portions of the math unpacked documents and engaged in great conversations regarding their plans to execute the standards and utilize the documents for lesson planning. Meeting teachers from across the state, facilitating workshops and having the privilege to listen to these discussions, reenergize me for the next steps in the standards implementation work.

This October, I will hold another full day mathematics unpacked document workshop, and plan to host webinar workshops to highlight the additional components of the unpacked documents. As always, please watch for specific dates for these workshops on the DOE Math Listserv. If you are not receiving these emails, you can send an email to listmanager@k12.sd.us, do not include a subject, and then for the message write: Subscribe DOEMath. As always encourage colleagues to also sign up for the DOE Math Listserv.

Have an excellent summer,

Stephanie Higdon
Math Specialist
SD Division of Learning & Instruction
Stephanie.Higdon@state.sd.us



*"...send an email to listmanager@k12.sd.us do not include a subject, and for the message write: **Subscribe DOE Math.**"*

*PD Opportunities include:
Standards Workshops,
SD Math/Science
Leadership Cohort,
SD Mentoring Program*



Mark's Thoughts

NCTM Centennial Annual Conference in Chicago

Happy summer! I hope you are able to find some time to relax and recharge for the upcoming year.

Did you know that NCTM turns 100 this year? As your NCTM Representative, I would like to invite you to attend the NCTM Centennial Annual Conference in Chicago on April 1-4, 2020. I have never been to the NCTM Annual Conference, but I hear that each year it is the premiere conference to attend.

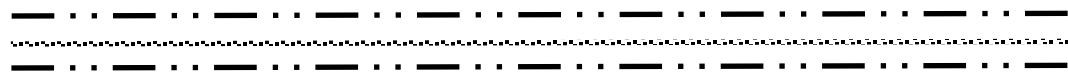
This year's conference highlights the following strands:

- Implement the Effective Teaching Practices
- Experience the Depth and Excitement of Mathematics
- Look Back and Move Forward: A Centennial View
- Create Positive Change
- Build Student Agency, Foster Student Identity, and Promote Social Change

Registration opens later this summer. For more information, visit <https://www.nctm.org/100/>.

For individuals who have not previously attended the NCTM annual conference, there is a grant opportunity (for up to \$1500) to help offset the cost of travel and registration fees. For more information, visit <https://www.nctm.org/Grants-and-Awards/Grants/Future-Leader-Initial-NCTM-Annual-Meeting-Attendance-Awards/>.

Mark Kreie
NCTM Representative
Mark.Kreie@k12.sd.us



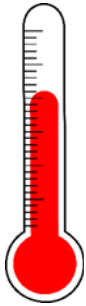
Share the Wealth

South Dakota Teachers are some of the most creative, dedicated professionals. Whenever I have the opportunity to visit with our teachers, I always hear of a project or lesson idea that I could use in my classroom. I invite you to share your wealth of ideas with our membership. Please consider submitting a favorite idea, lesson, activity... for publication in our newsletter.

Send submissions to:

Sheila McQuade, SDCTM Newsletter editor (SMcQuade@OGKnights.org).





A card game for any number of players

One deck of cards with face cards and jokers removed: Use two decks if more than 4 players

6.NS Apply and extend previous understandings of numbers to the system of rational numbers.

6.NS.5. Understand that positive and negative numbers are used together to describe quantities having opposite directions or values

6.NS.6. Understand a rational number as a point on the number line. Extend number line diagrams and coordinate axes to represent negative number coordinates.

6.NS.7c. Understand the absolute value of a rational number as its distance from 0 on the number line; interpret absolute value as magnitude for a positive or negative quantity in a real-world situation.

How to Play:

- The dealer shuffles the cards and deals one card facedown for each player, including himself. Then he deals one card face-up to each player (including himself.)
- Each player may peek at his own facedown card as often as he likes, but it remains hidden from the other players until the end of the round. The face up card(s) remain visible to all players.
- Each player mentally calculates the sum of the numbers on his cards, both hidden and face-up. Aces count as 1. Black cards (positive numbers) are added to the total; red cards (negative numbers) are subtracted. A player's score may go below zero.
- When all players have had a chance to check their cards, the dealer asks each in turn whether he wants a hit — an extra card, also dealt face up so everyone can see it. If the player wants the extra card, he says, "Hit me!" Last of all, the dealer may take a hit, if he wishes.
- Each player mentally calculates his sum. Then each player in turn has a chance to ask for a second hit, and then a third, and so forth.
- Each player may take up to 5 hits, for a maximum of 7 cards, or they may hold (stop with the cards they already have) at any time.
- The round is over when all the players have either taken their maximum number of hits or refused any more cards. At the end of the round, each player turns their hidden card face up and announces his score.
- The player with the lowest **absolute value** (the sum closest to zero, whether positive or negative) wins the round. Play eleven rounds. Whoever has won the most rounds is the champion.

Cindy Kroon
Montrose High School
Cindy.Kroon@k12.sd.us

Inspired by <https://denisegaskins.com/2008/05/29/hit-me-math-game/>





2019 PAEMST State-level Finalists

Congratulations to the following middle school and high school mathematics state-level finalists for the 2019 Presidential Award for Excellence in Mathematics and Science Teaching:

Carla Diede, Harrisburg South Middle School
 Molly Ring, Brandon Valley Middle School
 Mark Kreie, Brookings High School

As state-level finalists, they are automatically candidates for the National Presidential Award. The teacher selected as South Dakota's Presidential Awardee will be notified officially by the White House. 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.

SDCTM will celebrate the achievements of each of the state-level finalists on Friday, February 7, 2020 in Huron, SD during the evening Banquet at the SD STEM Ed Conference. Each state-level finalist will receive a paid two-day conference registration, Friday night's hotel accommodation, a paid one year membership to SDCTM, a plaque to commemorate the achievement, a free Banquet ticket (plus 1), a free breakfast Saturday morning, and 3 CEU's toward certificate renewal.

Beginning this fall, SDCTM will be looking for outstanding K-6th grade mathematics and science teachers for the 2020 Presidential Awards for Excellence in Mathematics and Science Teaching. Do you know a GREAT K-6th grade mathematics or science teacher? Nominate him or her to receive the Presidential Award! Nominations for the 2020 cycle will open shortly after the 2019-2020 school year begins.

For more information, including nomination and application forms as they become available, please visit www.sdctm.org and click on the Presidential Awards link.

Allen Hogie
 SD PAEMST Mathematics Coordinator
Allen.Hogie@k12.sd.us

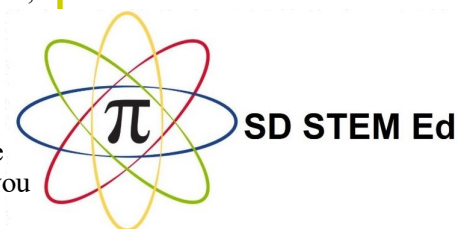
2020 SD STEM Ed Conference Breakout Session Proposals

The 2020 SD STEM Education Conference, hosted by SDSTA and SDCTM, will be held at the Crossroads Event Center, Huron, South Dakota (1-800-876-5858) on February 6-8, 2020. We invite all teachers interested in presenting at the conference. If interested, please fill out the session proposal form at:
<https://sites.google.com/k12.sd.us/sdsta/sd-stem-ed-conference>.

The main presenter will receive an email confirming your submission. The Conference committee will meet in early November 2019 to schedule and approve proposals and you will receive confirmation of tentative acceptance by December 1, 2019.



*“Congratulations...
 Carla Diede...
 Molly Ring... [and]
 Mark Kreie”*





2020 SD STEM Ed Conference Registration Information

We would love to see you at the 2020 SD STEM Ed Conference. The conference will be February 6, 7, and 8, 2020. We will once again be in Huron, SD because the Crossroads and Huron Event Center are so very good to us and help us to keep our costs affordable with several “perks” for which we do not have to pay such as meeting rooms, suites with work space, and conference rooms to name just a few. That being said, food costs have increased and it is necessary for us to raise our rates to cover our increases. It is very helpful to us to have our paid registrations completed two weeks before the conference. The following 3-tier fee structure reflects the cost increase and our efforts to reward early registration.

An additional change in registration for 2020 is that we will no longer accept paper registration forms. ALL registrations will be on-line. You will continue to have an option to mail in a check to complete your registration.

Sheila McQuade
 SD STEM Ed Conference Registrar & Treasurer
 SMcQuade@OGKnights.org

In 2020 all registrations will be on-line. Mailing in a check for payment will still be an option.

2020 SD STEM Ed Registration rates		
Early Bird - June 1 - Dec 15		
	2 day registration	1 day registration
member	\$85.00	\$60.00
student	\$30.00	\$20.00
non-member	\$135.00	\$110.00
Pre-registration Dec 16 - Jan 24 (payment must be postmarked 1/20 or online payment COMPLETED by 1/24 or you will be "bumped" to the next tier)		
member	\$100.00	\$75.00
student	\$35.00**	\$25.00
non-member	\$150.00	\$125.00
On-site Registration		
member	\$120.00	\$95.00
student	\$65.00	\$55.00
non-member	\$170.00	\$145.00

Be sure to include the 2020 SD STEM Ed Conference in your budgets for next year!

** There is a smaller increase for students at this point because of their schedules. Students interested in attending may not be in contact with the content area professors before the beginning of second semester.



2020 SD STEM Ed Conference

Hosted by SDCTM and SDSTA



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

ADVANCE REGISTRATION

Huron Event Center, Huron South Dakota
February 6-8, 2020 1-800-876-5858

Download and complete this form. Postmark by January 20, 2020. After this date, please register on-site.

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

2020 Conference Registration

Online Only!

sdctm.org or sdsta.org

1. SDCTM/SDSTA MEMBERSHIP(s) 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 \$20	Elementary \$20
Mid-Level \$20	Mid-Level \$20
High School \$20	High School \$20
Post-Secondary \$20	Post-Secondary \$20
Student \$5	Student \$5
Retired \$5	Retired \$5
Other \$20	Other \$20

NOTE: First year teachers are eligible for a scholarship providing a free registration. See www.sdctm.org for details.

2. CONFERENCE ADVANCE REGISTRATION

Please select 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/Retired	
One day \$60	One day \$110	One day \$20	
Two days \$85	Two days \$135	Two days \$30	

College credit will be available; information/registration will be available at the conference registration table.

3. PAYMENT: By Check Only

Make checks payable to SDCTM/SDSTA JPDC.
 SD STEM Ed does NOT accept purchase orders.
 To use credit card, you must register and pay ONLINE:

Membership(s) total	\$ _____
Registration	\$ _____
Friday Night Banquet (\$25 each)	\$ _____
On-site Late Registration Fee (+\$35)	\$ _____

TOTAL ENCLOSED \$ _____

Requests for refunds must be received by January 20, 2020.
 The conference does not issue refunds due to weather events.

4. SEND THIS FORM WITH PAYMENT

Sheila McQuade
smcquade@ogknights.org School (605) 336-3644
 Sioux Falls, SD 57105 Home (605) 371-1803
 If you have not received confirmation after one week,
 please contact: smcquade@ogknights.org

Advance registration must be postmarked by January 20, 2020.
 After this date, please register on-site.

Please check here if you have also submitted a speaker proposal form for the 2020 Conference.

Contact SD STEM Ed with any special needs requests as defined by ADA by emailing cindv.kroon@k12.sd.us by January 20, 2020.

Your contact information may be shared with Conference Exhibitors/Sponsors. Check here to opt out of sharing your contact information.



“GOEHRING/VEITZ 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 SD STEM Ed Conference (hosted by SDCTM and SDSTA), 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 attached form, have it signed by the building principal, and upload a pdf copy when you complete your conference registration online at: <https://forms.gle/nB5bxikUExzZHDvP7>

Contact Sheila at SMcQuade@OGKnights with any questions.

APPLICATION “GOEHRING/VEITZ 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

(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.”

Signed: _____, Building Principal



2301 Research Park Way
Brookings, SD • 57006
605.688.6231
www.sdepscor.org

ABOUT US

The National Science Foundation (NSF) created the first Experimental Program to Stimulate Competitive Research (EPSCoR) program in 1980. Its success led congress to expand the program and since 1990 create EPSCoR-like programs in several federal agencies, including: USDA, NIH, DoD, DoE, NASA and EPA.

Now named the Established Program to Stimulate Competitive Research, EPSCoR identifies develops, and uses a state's academic science and technology resources to support its economic growth and promote a more productive and fulfilling way of life for its citizens. EPSCoR acts on the premise that universities, their science and engineering faculty, and their students are valuable resources that can influence a state's development in the 21st century. To achieve this goal, NSF provides lasting improvements to the state's academic research infrastructure that increase its national research and development competitiveness.

Research

- EPSCoR recognizes that universities are valuable resources. Their science and engineering programs, as well as faculty and students, are major assets to the state. Currently, SD EPSCoR supports facilities, faculty, students, and equipment at South Dakota Universities.
 - EPSCoR/IDeA universities, their faculty, and students are leading the way in the 21st century. These researchers are needed for the nation to meet its most pressing priorities in health, cyberinfrastructure, and homeland security. A broad science and technology base is especially important in an era when different regions have unique issues involving resources, health, security, and the environment.
- Scientific and technological research cannot be limited to a few states if the nation is to maintain world leadership and reach its full potential. Along with stimulating competitive research and promoting excellence in education, EPSCoR/IDeA improves access to that high-quality education and cutting-edge research, expands economic opportunity, creates jobs, and improves the quality of life across the nation.

Economic Development

- To nurture economic development in South Dakota, SD EPSCoR partners with the SD Governor's Office of Economic Development, the SD Office of Commercialization, and the SD Board of Regents. Through these collaborations business/technology education programs are created.
- Global competition demands a highly skilled workforce, and the country's economic future depends on scientific and technological advances everywhere, not just in a few places. Through EPSCoR/IDeA, participating states and territories are building a high-quality, university-based research infrastructure, a backbone to their scientific and technological enterprises, and a strong and stable economic base into the next century.

Education

SD EPSCoR promotes and supports educators, research faculty, and programs in the areas of science, technology, engineering, and mathematics (STEM).

- Advances in science and engineering are essential for ensuring America's economic growth and national security. During the next decade, U.S. demand for scientists and engineers is expected to increase at four times the rate for all other occupations. Today's high school students overall are not performing well in math and science, and fewer of them are pursuing degrees in technical fields.
- Outreach and informal science education activities engage more than 35,000 SD residents per year.

Diversity

The SD EPSCoR diversity plan represents bold, catalytic, strategic and systemic approaches to recruiting and supporting citizens of all races, ethnicity, nationality, gender, age, economic status, and sexual orientation within STEM. With a small population, South Dakota must take advantage of all its human resources if it is to advance.

SD EPSCoR Diversity Goals and Strategies:

- Develop a mechanism for sharing successful diversity initiatives and discussing policies, progress and barriers statewide. The annual SD EPSCoR Diversity Summit will be a venue for sharing and linking promising, but currently disconnected diversity initiatives.
- Develop meaningful partnerships between state government, K-12, higher education and the private sector to strengthen STEM education for diverse audiences and to diversify STEM-related workforce. Utilizing statewide initiatives to improve instruction for underrepresented groups and those in remote regions as well as diversifying SD's STEM workforce.



THE SANFORD PROMISE

Inspiring the next generation of scientists.

2018-19 K-12 SCIENCE EXPERIENCES

The mission of the Sanford PROMISE is to increase the community's understanding of science and their awareness about the benefits of research to our society. Visit us online at: www.sanfordresearch.org/education, connect with us at 605.312.6417 or SanfordOutreach@sanfordhealth.org to learn more about these programs or to inspire us with your own ideas for connecting youth, educators, and scientists!

Visit the **Sanford PROMISE Community Lab** for a tailored, hands-on experience in the heart of Sanford's working research facility to learn what it takes to be a biomedical scientist through hands-on activities, tours, and interactions with Sanford scientists.

Middle Level Biomedical Exploration

In early March we set aside a week for large middle school groups to learn about how biomedical scientists work towards finding the *cure to cancer*.

Research Shadowing

Students age 16 and older explore a working research lab environment and learn about the qualities required for a career in biomedical research. Teachers are invited to shadow too!

PROMISE Scholars

Immersive research experience for rising high school seniors. Juniors apply in fall 2018 for summer 2019 experiences.

Science Discovery Days

In November 2018 and April 2019, we invite high school sophomores and juniors to connect with regional scientists and biomedical researchers through interactive career presentations and exhibits from area industries and universities.

Elementary Inquiries

K-6th grade students practice the research process with hands-on activities. *Science to make you sweat* (K-2 grade, October 2018); *Diabetes: Finding the Cure* (3-6 grade, December 2018); *Power-up Brain Science* (K-2 grade, January 2019); *Enabling Technologies* (3-6 grade, May 2019).

Check the website often for student and teacher workshops in summer 2019 and additional events and opportunities.

Like Sanford Research on Facebook

Follow @SanfordPROMISE on Twitter

SANFORD
RESEARCH



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
OGHS
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Sioux Falls, SD 57105

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www.sdctm.org