

Wahpe Woyaka pi

(Talking Leaf)

South Dakota Council Teachers of Mathematics Newsletter

Presidential Ponderings

I have had the privilege of being involved with the Regional Math Circles program this past year as a facilitator. It was very rewarding to spend those days with educators from the area that were eager to “do math” – sometimes stepping outside of their comfort zone. At this summer’s facilitators workshop, Stephanie Higdon shared some enlightening information with us. In 2019, SD DOE worked with REL (Regional Educational Laboratory) Central to conduct research in regards to the school districts, schools, classrooms, and grade levels which had consistently experienced the greatest student math achievement and what strategies were being used. REL conducted interviews with teachers and administrators of students who scored significantly above or below average on the statewide assessment. They found that in schools with math scores significantly above average “alignment to standards was discussed almost 100 more times” and “math instruction/pedagogy was discussed 84 more times”. And in schools with math scores significantly below average “systems of intervention were discussed 41 more times”. “The research indicates that at schools with higher math scores on the statewide math assessment, teachers are teaching content standards to the required depth...” And at schools with lower achievement scores, “the research indicates that more emphasis is put on intervention than on teaching the grade level-aligned standards.” It is admirable that teachers place value on intervention, however, the research shows that we serve our students better when we are aware of the standards and align our instruction to the standards. Several years ago, a friend shared that he tried to ask his students *Why?* at least 10 times each class hour in an attempt to get them thinking about justifying their mathematical thinking. My challenge for each of us is to ask ourselves *Why?* at least once a week. If your justification doesn’t trace back to the standards, maybe you should rethink what it is you are teaching.



The SDCTM Summer Symposium was this past week. Our topic this year was the state Statistics standards. Mark Kreie, SDCTM Vice President and DESMOS Fellow, was our presenter. We spent time looking at and working with the standards at all levels. That vertical alignment experience was a good one. It gave all of us a chance to experience what the kids have already learned in previous grades or would be learning in the years to come. Personally speaking, it was a day of stretching my brain! There were concepts in the grade 6 standards that I had not heard of (calculating the MAD) and those that I haven’t experienced in *years*. I told Cindy that I was going to have to send Mark an email about my work on the last part of one question to see if I had done it correctly. (That whole idea of expect/accept non-closure is one I’m still working on!) It was a great day of doing math, feeling supported even while experiencing some discomfort. Thank you, Mark, for putting so much of yourself into a great symposium! If anyone has an idea for a future symposium topic or presenter, please feel free to reach out to any board member. We are always open to ideas/suggestions.

(continued p.2)

Summer 2021-2022

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<i>Higher Ed Viewpoint</i>	3
<i>Musings From Dan</i>	4
<i>9-12 Spotlight</i>	5-6
<i>Lesson Highlights</i>	7
<i>Elementary Highlights</i>	8-9
<i>Mark’s Thoughts</i>	10
<i>A Word from Stephanie</i>	11
<i>PAEMST Update</i>	12-14
<i>SDCTM Board</i>	15

Calendar Notes:

- Register and submit speaking proposals for the 2023 Stem Ed Conference now!



Presidential Ponderings

We have already started working on the 2023 SD STEM Ed conference. Please consider submitting a speaker proposal. Speaking at the conference is a great way to share the exciting things happening in your classroom. It is also a good way to stretch a bit. Teachers in SD are a humble group, but remember, if you are doing something that works for your students, there is someone out there searching for an idea. Registration for the 2023 conference is now open at: <https://sites.google.com/k12.sd.us/sdsta/sd-stem-ed-conference>

It is hard to believe that school starts soon! I hope that your summer has been one of renewal – one filled with opportunities to fill your bucket of hope, to refresh your desire to be involved in educating young people, and to remind yourself of why you love math. I thank you for your dedication, whether you're new to the profession or are an "old hat". South Dakota needs you!

Wishing you a year filled with daily blessings that serve to remind you of how important you are,

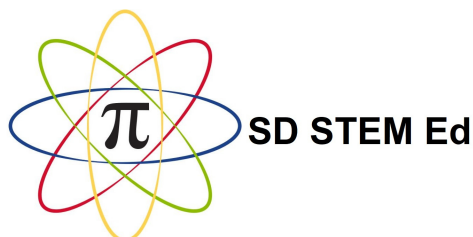
Sheila McQuade
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O⁺Gorman High School
SDCTM President
SDCTM/SDSTA JPDC Treasurer & Registrar

February 2-3-4, 2023 SD STEM Education Conference

Save the date! The 31st Annual SDCTM/SDSTA Professional Development Conference will be held in Huron February 2-4, 2023. Sessions presented by South Dakota's best (that's you) comprise a very large part of the success of this conference. If you have presented before, thank you. I hope that you will present again for the 2023 event. If you have not presented before, please consider it this year. Let others benefit from your ideas and experiences. You can present with partner(s) if you are hesitant to go it alone the first time.

Presenting a session is a fun and rewarding experience. You can be certain that you will have a friendly audience! Speaker proposal forms are now available at: <https://sites.google.com/k12.sd.us/sdsta/sd-stem-ed-conference>

Forms will be submitted electronically this year; follow the links on the conference page. The submission deadline is November 1, 2022 but why wait until the last minute? I can't wait to see what you all have in mind for your sessions!



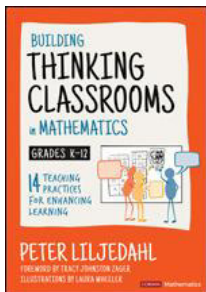


Higher Ed Viewpoint



July is always a tricky month for me. Should I mourn the fact that my summer is halfway done or celebrate the fact that I still have over a month of summer left to enjoy? I feel like I do a little of both. Yet, as each benchmark passes, for example, the 4th of July, the Brookings Summer Arts Festival, and the last Prairie Repertory Theater

show, I begin to think about the start of school. I have been a student or a teacher my entire life, so while others may think of January 1 as the “beginning” of the year, I have always thought the first day of school was the true beginning.



I start my reflection by asking myself questions like “what new techniques can I apply” or “how do I change my classroom this year to ensure students are learning?” This fall, I am excited to try several new techniques I started working on last year. I have been reading a book I mentioned in my article in January by Peter Liljedahl, “Building Thinking Classrooms in Mathematics Grades K-12.” His book describes 14 techniques to promote students’ thinking while learning mathematics. While trying to implement all fourteen feels overwhelming, choosing just one or two feels doable.

Alex Overwijk presented a Global Mathematics Department webinar on his implementation of the 14 techniques over the past eight years. Below is a table describing the Classroom Practices with a concise explanation of each practice. A more thorough explanation of the classroom practice, the research Peter Liljedahl has done on each technique, and his suggestions for implementation are available in his book.

CLASSROOM PRACTICES		OPTIMAL PRACTICES FOR THINKING
1	What are the types of tasks we use?	Use thinking tasks
2	How do we form collaborative groups?	Form frequent visibly random groups
3	Where do students work?	Use vertical non-permanent surfaces
4	How do we arrange the furniture in our classroom?	De-front the classroom
5	How do we answer questions?	Only answer keep-thinking questions
6	When, where, and how are tasks given?	Give tasks early, standing and verbally
7	What does homework look like?	Give check-your-understanding questions
8	How do we foster student autonomy?	Be intentionally less helpful
9	How do we use hints and extensions?	Create and manage the classroom flow
10	How do we consolidate a lesson?	Consolidate from the bottom
11	How do we give notes?	Use meaningful notes
12	What do we choose to evaluate?	Evaluate what you value
13	How do we use formative assessment?	Communicate to students where they are and where they are going
14	How do we grade?	Report out based on data (not points)

Alexander Overwijk, Global Math Department webinar, May 31, 2022

Enjoy the rest of your summer. I hope you find time to refresh and re-energize.

Christine Larson
 Post-Secondary Liaison
 Christine.Larson@sdstate.edu



“This fall, I am excited to try several new techniques I started working on last year. “



Musings from Dan

Here we are at the end of June which essentially means summer is about half over already, especially by the time you read this. Summer is a time for both relaxation and professional development. I just completed two days in Pierre with the Math Circle group. It is always refreshing to see colleagues and have fun doing math together. By the time you read this, I will have also taken part of the math symposium on July 14 in Mitchell. I am also looking forward to what Mark Kreie will teach us with regards to statistics and probability standards. I mention both of these opportunities as I would really like to encourage you to get involved in your state. You are all professional educators and have something to offer and share with the rest of us. I know summer can be very busy already with all the activities kids and grandkids are involved in, but it really does help to reignite your passion for doing math when you can have fun with colleagues in doing so. Give it a thought and start planning for the STEM Ed conference in February.

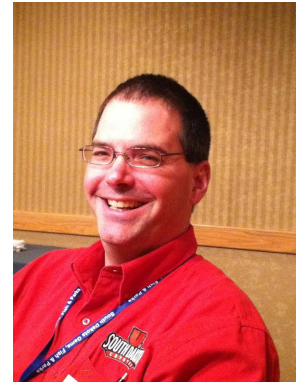
Here is a fun problem I came across this week. It is not trivial by any means, but you will find great satisfaction when you solve it. You can do it sitting at one of those sport activities your grandchild(ren) is/are in while another team is playing in the tournament. Here is a link to the puzzle.

<https://www.mathsisfun.com/logicpuzzle.html>

In closing, I do hope you get a chance to relax and recharge your batteries for the upcoming year. However, I also hope you take some time to look into something new. I greatly appreciate all you do for the education of our students in the state. Please know it is deeply appreciated by the vast majority of the parents you likely never hear from as well.

Sincerely,

President Elect-SDCTM
Dan.VanPeursem@usd.edu
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“...would really like to encourage you to get involved in your state. You are all professional educators and have something to offer and share with the rest of us. “



9-12 Spotlight

Conic Sections with Playdough

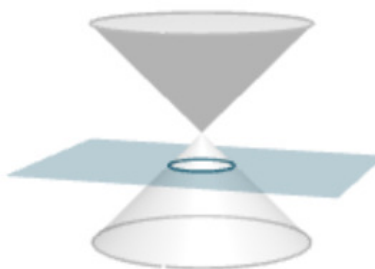
It's the end of the school year before my Precalculus with Trigonometry class makes it to conic sections. By that time, the students and I are all tired from a full year of challenging math, but it is important that the students leave the class with the ability to identify types of conics and key graphical characteristics from the equations. So, we approach conics in some fun and unique ways.

Playing with Playdough

My students are generally in their Junior or Senior year in high school, so they get a big kick out of the opportunity to play with Playdough. To introduce conic sections, I hand each student a ball of Playdough and a piece of string. After giving them a couple of minutes to play, I ask each student to build a cone with their Playdough. Some students are artistic or perfectionists, so their cones are excellent. Some are just happy to get close. Either way is fine because we can learn from watching each other as well.

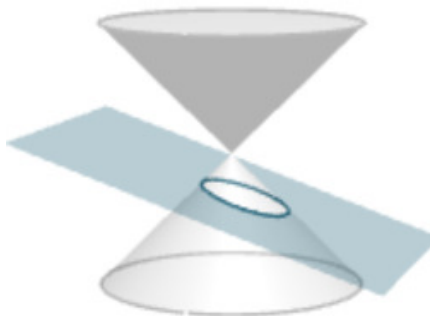
Circle

Then I challenge the kids to use the string to cut their cone so that the cross section is a circle. This physical application pushes students to really understand the meaning of cross section. After a few minutes, students get the hang of the idea and can cut the cone parallel to the base to create a circular cross section. I then challenge them to make a second cut so that the circular cross section is smaller. At this point, we can talk about our first **conic section**. The words "conic section" can seem abstract to students and hard to define, but after this Playdough exercise, we can connect the idea of a circle coming from a sectioning (or cutting) of a cone. This is something they will never forget.



Ellipse

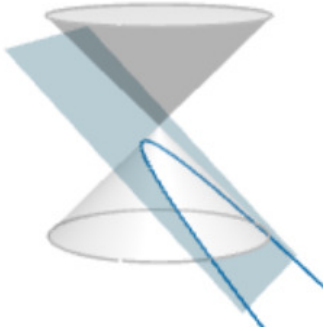
After rebuilding their cone, students are ready to explore the next conic section, the ellipse. The first thing that students need to process is the meaning of the word ellipse. Some students remember it well from previous experiences, but some students do not. We generally have a quick conversation about the words oval and ellipse, as oval is the word that most students use more commonly. Then the challenge is to use the string to cut the cone such that the cross section is an ellipse. After a little trial and error, students will notice that cutting the cone like before but at an angle instead of directly horizontal will make an ellipse. I then ask students to explore what happens if they make the cut more or less slanted. With students working in groups, they can explore a variety of cuts without having to make them all themselves.



"...the students and I are all tired from a full year of challenging math...So, we approach conics in some fun and unique ways."



9-12 Spotlight *continued*



While exploring the depth of slant of the ellipse cut, students will inevitably make a cut so steep that they catch the base of their cone. When they do this, they realize that cut no longer makes an elliptical cross section. At this point, I ask students to explore the cross section they see when the cut intersects the base of the cone. After a while, students will identify this cross section as a parabola. (Ok, the real math gets a bit dicey here. That diagonal cut that catches the bottom is technically only a parabola when the slope of the cut is parallel to the slope of the cone, but remember our purpose here. Our purpose is just to expose students to the conic sections and help

them understand how they are related to cones and to each other. From my perspective, the details of the slant are not important here.)

Hyperbola

So, at this point students have explored 3 of the 4 conic sections. Students have spent time studying circles, ellipses, and parabolas earlier in the year and in prior courses, but hyperbolas are brand new for most students. To get students into the hands-on exploration, I tell students that they need to work with a partner to create a double-napped cone – two cones connected at the vertex. Students enjoy the challenge here of creating a shape that is not stable. Then, I ask students to cut the double-napped cone on a diagonal that cuts through both bases. Students can generally see that cut creates a cross section with 2 parabolas with a space between the vertices. This is not exactly the definition of a hyperbola, but again, it is enough of an understanding to start.



Obviously, this is just the start of our exploration of conic sections, but it is a fun way to help students internalize the connections between these previously unknown or distinct shapes.

Other Options

Don't have the time or energy to explore with Playdough? This website provides a great opportunity to explore the same concepts on the computer. It is often helpful to explore here even after the Playdough exploration. <https://www.intmath.com/plane-analytic-geometry/conic-sections-summary-interactive.php>

Want to be even more creative? Try making cones of rice crispy treats by pressing into cone shaped paper cups. In this case, you will need plastic knives rather than string for the cuts.

Jennifer Haar
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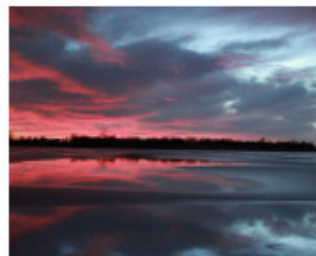
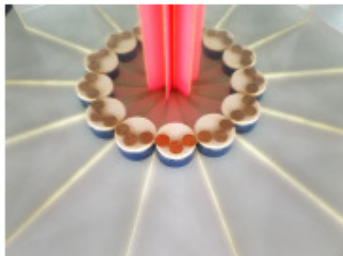


Lesson Highlights

SD AAPT HS Photo Contest

Photo Contest Results

At the February 2022 Joint Professional Development Conference (SD STEM Ed), the SD Chapter of the American Association of Physics Teachers met to conduct various business items including the final voting on the Photo Contest. Consideration is given for both the picture itself and the description of the Physics in that photo. Cash prizes are awarded to the top three. Congratulations to first place - Tyreese Loudner (The Halo); second place - Diamonique Defender (Reflections); and third place - Jocelyn Prewett (Red Sunsets). Entries must be received by January 1st to be considered for that year's competition.



The Halo

This photo depicts a reaction called a halo, specifically a circular halo or 22° halo. A halo is an absolutely breathtaking optical phenomena. A halo is an optical phenomenon which is made by sunlight or moonlight and ice crystals in the atmosphere. These beautiful phenomena can be seen when light reflects off the ice crystals. Halos can display colors in many different wavelengths. The rays can display a single color, a combination of colors, or the full color spectrum. In this image the halo rings have multiple colors which means the reflection process created a dispersion. This means that the white light has been split up to show the rainbow of colors. This photo was taken on Wednesday, January 10 of this year in Mitchell, South Dakota.

Reflections

I remember as a kid being curious of how two mirrors create more of the same reflections. But with these calculations, I had thought that a 360-degree angle divided by a 30-degree angle would equal 12 sections including 1 original & 11

images. But when I measured with a protractor, I figured out they are created by 360 degrees divided by 13 is equal to 27.7 degrees with 13 sections, 1 original and 12 images. Depending on where you place the object and where it stands. In the photo you will see that the object is placed in the front center of the angle, anything smaller than 180-degrees will cause more images to appear. What I'm showing as my object is three pennies on top of a bronzer sponge on a seasoning cap. The pink centerpiece would be the tape holding two mirrors together at a specific degree angle. If you look at the first two reflections right and left from the original image of the three pennies, the penny of Abraham Lincoln is reversed of him looking to the left. On the second set of the images, they are reflections of him facing back to the right like its original image. The remaining reflections alternate facing back and forth as they circle its way back around to the original image. It is a very interesting project and I'm hopeful you will think so too.

Red Sunsets

This image shows how light refracts at different wavelengths in the sky. In the visible light part of the electromagnetic spectrum, violet and blue have the shortest wavelengths while red has the longest wavelength. The sky's normal blue appearance is due to blue light waves scattering in all directions and becoming absorbed by the molecules in Earth's atmosphere. Red, yellow, and orange lights with shorter wavelengths pass through and are not scattered or absorbed. During sunrise and sunset, the light from the sun has a farther distance to travel. By the time the light reaches our eye, most of the blue light has been scattered until the red, orange, and yellow light waves are left. When larger molecules are in the sky such as rain clouds and dust, the longer wavelengths will be absorbed. Therefore, when it is cloudy at sunset, the sky tends to take on a vibrant red hue.



Elementary Highlights

Greetings!

I hope you all have had a relaxing summer. I have an activity for you this month. It's an oldie, and more appropriate for later in the school year, but I thought some of you might teach graphing earlier in the year.

The website this activity came from is no longer in existence – hence it's an oldie – back when teachers pay teachers didn't exist and teachers shared things for free.

I also apologize it is not editable, but can be easily made to fit your cereal needs.

Marshmallow Treasures is the Lucky Charms version from Hy-Vee.

Directions: Count the different Marshmallow Treasures in your bag. Record the total number of each treasure beside the appropriate number below using tally marks, and then record the total for each.

- 1. Pink/Yellow = _____ Total = _____
- 2. Blue Shooting Star = _____ Total = _____
- 3. Green = _____ Total = _____
- 4. Orange Flower = _____ Total = _____
- 5. Purple Swirl = _____ Total = _____
- 6. Pink Star = _____ Total = _____
- 7. _____ = _____ Total = _____

Make a Prediction!

Using the information above, make a prediction of which Marshmallow Treasure you think will be the most for the entire class and then put a circle around it. On the line below, tell why you think this Treasure will be the most.



“My students were very engaged and so much math came out! “

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	Pink / Yellow	Blue Shooting Star	Green	Orange Flower	Purple Swirl	Pink Star	



Elementary Highlights *continued*

Questions to answer on your own:

1. Of which Treasure did you have the most? _____ How many? _____
2. Of which Treasure did you have the least? _____ How many? _____
3. How many total Treasures did you have in your bag? _____

Questions to answer as a whole group:

4. Of which Treasure did the entire class have the most? _____ How many? _____
5. Of which Treasure did the entire class have the least? _____ How many? _____
6. What was the total number of Treasures for the entire class? _____
7. Was your prediction of which Treasure would be the greatest amount for the entire class correct? _____ If not, how close was your prediction? _____

If you have any questions feel free to email me. Hope you find this activity helpful.

Credit: Cheryl Richard

I just used this activity in March of 2022. My students were very engaged and so much math came out!

I hope you have a wonderful school year!

Lindsey Tellinghuisen

SDCTM Elementary Liaison

Lindsey.Tellinghuisen@k12.sd.us

Do you have a lesson that you would like to share?

Your colleagues would love to see it!

Send your lesson ideas for publication consideration to:
sdctmnewsletter@gmail.com or Amy.Schander@k12.sd.us



Mark's Thoughts

A CALL FOR LEADERS

Happy summer!

At our SDCTM Executive Board meeting on July 14, board members discussed ways to find members willing to serve in leadership positions within our organization. The general consensus in the meeting was that the same small handful of people find themselves in the leadership roles, and often are asked to continue to serve out of necessity because of lack of alternative replacements.

The Executive Board positions are: President, Vice-President, Secretary, Treasurer, President-Elect, and NCTM Representative. Those six positions team with six board members from the South Dakota Science Teaching Association to assist on the SD STEM ED conference committee. Other SDCTM Executive Board positions include the Past-President, Newsletter Editor, Webmaster, as well as Elementary, Middle School, High School, and Higher Ed Liaisons.

If you scroll to the last page of this newsletter, you will see the names of the current Executive Board. I ask that you notice some of these members hold multiple positions. In addition, if you happen to peek into the archives of this organization, you will see that some of these members have been in these leadership positions for many years. This is not to imply that it is a bad thing to have leaders be in place for extended periods of time, nor that it is bad to have stability and continuity in the leadership positions. Rather, it is to help you understand that some of the pillars in this council are inching toward the sunset and leadership opportunities exist.

It is fair to say that one reason some of the people in leadership roles have served extended periods is because they move "up" the leadership ranks on the board. For example, I served as the NCTM representative for two consecutive terms (2015-17 and 2017-19) and now have moved into the Vice President role. My "promotion" was due to the fact that we knew of no one else who was willing to serve in that role. As I said before, board members are often asked to continue to serve out of necessity. While I am not disappointed in serving as VP, I would have been happy to continue to serve as NCTM representative or, better yet, stepped out of the leadership role for a term in order to allow fresh faces to step into the role.

Here is my belief: we have numerous mathematics teachers around the state who are very capable of serving in leadership roles in the SDCTM. A subset of them are intrigued by the idea of serving in a leadership role but do not know how to get their foot in the door. Others are afraid of or nervous about serving in a leadership role and therefore never consider stepping out of their comfort zone. Finally, a third subset don't identify themselves as leaders and have never really considered serving in a leadership role. These subsets are not mutually exclusive.

If you're in one of these subsets, I encourage you to consider stepping into a leadership role. How might you do that, you ask? Lucky for you, this is an election year for the SDCTM. We will elect new Executive Board members this February during our annual meeting (following the SD STEM ED conference). Reach out to President Sheila McQuade if you are interested in having your name on the ballot for one of the roles. If you have any questions about the level of time commitment, job descriptions, etc. for any of the roles, please contact Sheila or myself and we would be happy to provide more information.

Mark Kreie
SDCTM Vice President
Mark.Kreie@k12.sd.us



“...we have numerous mathematics teachers around the state who are very capable of serving in leadership roles in the SDCTM.”



A Word from Stephanie

Greetings,

I hope you are doing well and getting some well-deserved rest and relaxation. This summer, I have taken several walks with my pup, enjoyed time with friends and family, and spent as many Saturdays as possible at the farmer's market. As with every summer, I also have enjoyed my time with educators from across the state.

In June, cohort 5 of the SD Math/SD Science Leadership program met for the delta retreat in Pierre. In this retreat participants share their keystone projects. As I said to the cohort members, the theme of this group was "Go big or go home!" They had some wonderful ideas to impact positive change for students in math and science education. I look forward to connecting with them in years to come to see where they are on their journey. This program has been discontinued moving forward into the 2022-23 school year.

The SD Best Practices in Mathematics Teaching Regional Math Circles facilitators also met this June. It was exciting to have a few new faces this year. This group of dedicated math leaders and educators spent two full days engaging in math tasks and collaborating to develop math tasks that will be used for the 2022-23 Regional Math Circle events. I am so grateful for this group and look forward to another great year of Regional Math Circles, with the opportunity for educators to learn from and with one another, network and, above all, build their capacity to engage students in high quality mathematics.

Next week is a full week of math professional learning. I start the week finishing final preparations for the SD Foundational Math class that will be held Tuesday and Wednesday. Just like last summer, there are six amazing teachers that have helped plan and will help facilitate the course, Heather Beck, Julie Bruckner, Becky Kitts, Jodi Neugebauer, Elizabeth Stetson-Frisch and Dina Vanderwilt. These educators have worked so hard to ensure this workshop is engaging and packed full of resources that educators can take back and use with students. This summer, we are also hosting a keynote speaker to kick off the workshop. Deann Kertzman, Deputy Director of the Center for Advancement in Math and Science Education at Black Hills State University, has spent much of her career supporting educators in early mathematics learning, and I am so excited to hear what she will share. After this course, I will facilitate the Best Practices in Teaching Mathematics course. This course is focused more on the upper grades, with time provided for educators to dig into the SD Assessment resources. I know it will be a busy week, filled with great conversation, new learning, and connecting with educators passionate about teaching mathematics.

At the end of July, I will join educators from across the state to participant in the Sanford Underground Research Facility Education and Outreach team, Summer Math workshop. I look forward to collaborating with educators to create activities that integrate the math and science standards.

I hope you all are finding activities this summer that rejuvenate you. Have an excellent summer!

Take care,

Stephanie Higdon
Stephanie.Higdon@state.sd.us
SD State Math Specialist



“As with every summer, I also have enjoyed my time with educators from across the state .”



Presidential Award for Excellence in Mathematics and Science Teaching

We are awaiting the announcement from the White House for both the 2021 and 2022 Awardees. Here is a list of outstanding teachers from each award year who are South Dakota's state-level finalists.

2022 South Dakota State-Level Finalists (Mathematics)

Chelsey Coverdale, a mathematics teacher from Harrisburg, SD has been teaching for 9 years. She is a 6th grade mathematics teacher at Harrisburg North Middle School. Chelsey graduated from Augustana College with a Bachelor's degree in Elementary Education in 2012 and earned her Master of Arts in Teaching degree from Morningside College 2018. Chelsey is a National Board Certified Teacher, an Apple certified teacher, and has participated in the South Dakota Department of Education SDMath/SDSci Leadership program.

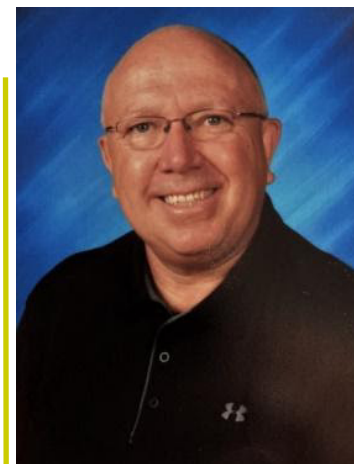
Jodi Neugebauer, a mathematics teacher from Garretson, SD, has been teaching for 13 years. She is a 2nd grade teacher at Garretson Elementary. Jodi graduated from Dakota State University with a Bachelor's degree in Elementary Education/Special Education in 2008. Jodi is a National Board Certified Teacher and has participated in South Dakota Department of Education professional development programs such as the SDMath/SDSci Leadership program and as a facilitator/leader in Foundational Math Teacher and Math Circles workshops.

Rebecca Van Roekel, a mathematics teacher from Brandon, SD, has been teaching for 17 years. She is a 6th grade mathematics teacher at Brandon Valley Intermediate School. Rebecca graduated from Northwestern College with a Bachelor's degree in Elementary Education 2005 and earned her Masters degree in Curriculum and Instruction in Mathematics from Black Hills State University in 2009. Rebecca has been a SD Counts Teacher Leader and currently serves as a Formative Assessment PLC Team Leader in her school.

2021 South Dakota State-Level Finalists (Mathematics)

Brittany Green, a mathematics teacher from Brandon, SD has been teaching for 12 years. She currently teaches Algebra 1 and Algebra 2 at Brandon Valley High School. Brittany graduated from South Dakota State University with a Bachelor of Science degree in Mathematics with a Specialization in Education in 2009.

Mark Kreie, a mathematics teacher at Brookings High School in Brookings, SD, has been teaching for 20 years. He currently teaches Geometry and Advance Algebra 2. Mark graduated from the University of Minnesota – Morris with a Bachelor's degree in Mathematics in 2002. Since then, he has earned his Master's degree in Curriculum and Instruction from Black Hills State University. Outside of his classroom, Mark has presented sessions at the NCTM Regional, SD STEM Ed, TIE, and DSU STEAM conferences. He has hosted a Desmos camp for teachers, served as a virtual math coach, blueprint writer, and South Dakota Counts instructor for the SD DOE, is serving on NCTM's Classroom Resources Committee, and has been active as a Desmos Fellow. Mark is a SDCTM member and serves on its executive board as the Vice President.



“We are awaiting the announcement from the White House for both the 2021 and 2022 Awardees.”

(continued p. 13)



Presidential Award for Excellence in Mathematics and Science Teaching *continued*

Amy Schander, a mathematics teacher from Gayville-Volin, has been teaching for 21 years. She currently teaches Trigonometry, Physics, Geometry, Algebra II, and Consumer Math in person and Trigonometry, Geometry, and Algebra I virtually at Gayville-Volin High School. Amy graduated from the University of South Dakota with a Bachelor's degree in Biology and Psychology in 1997. She then pursued an Associate of Science degree as a Physical Therapy Assistant from Northeast Community College in 1999. In 2001 she earned a Master of Arts degree in Secondary Education from the University of South Dakota. Amy has presented sessions at the SD STEM Ed conference, served as a virtual math coach, a table Lead for the Geometry State Standards writing workgroup, a contributor and editor for Goalbook, a lesson and assessment developer and reviewer for APass Education Group, and is now serving as a member on the SD DOE Math Advisory Team. Amy is a SDCTM member and serves on its executive board as the Secretary.

Presidential Award for Excellence in Mathematics and Science Teaching Overview

The Presidential Award for Excellence in Mathematics and Science Teaching (PAEMST) is the highest recognition that a kindergarten through 12th grade mathematics or science teacher may receive for outstanding teaching in the United States. Since 1983, more than 4,000 teachers have been recognized for their contributions to mathematics and science education. Awardees serve as models for their colleagues, inspiration to their communities, and leaders in the improvement of mathematics and science education.

State-Level Finalists automatically become candidates for the National Presidential Award. Two teachers from each state may be selected as the state's Presidential Awardees and will be notified officially by the White House. This will take place after a national committee reporting to the National Science Foundation makes its selection from the state-level finalists submitted by each state.

Presidential awardees receive a citation signed by the President of the United States, a trip to Washington DC to attend a series of recognition events and professional development opportunities, and a \$10,000 award from the National Science Foundation.

State-Level Finalists are nominated because someone thought of them as teachers who exhibit a passion for the subject they teach; who approach their work with creativity and imagination; and who strive daily to improve individual teaching practices.

Anyone--principals, teachers, parents, students, or members of the general public--may nominate a teacher by completing the nomination form available on the PAEMST website. For more information, please visit www.paemst.org.



PAEMST *continued*

Why else would a nominee want to complete the application process?

45 continuing education contact hours from the South Dakota Department of Education can also be earned toward certificate renewal by completing the application process. To be eligible, a PAEMST candidate must complete all components of the application process and submit a scorable application that can be sent on to the state selection committee. All applicants submitting a scorable application will earn credit, not just the state finalists whose materials will be sent on to a national selection panel.

Now that you know more, **Do YOU:**

Teach mathematics in grades 7-12?

Have a Bachelor's degree from an accredited institution?

Have at least 5 years of full-time employment prior to the 2021-2022 school year?

Teach students full-time at least 50% of a school's allotted instructional time?

Have a passion for the subject you teach, approach your work with creativity and imagination, and work to improve your individual teaching practice daily?

If you have answered YES to the previous questions and are a mathematics or science teacher in grades 7-12, consider applying for the 2022-2023 PAEMST award this FALL! The nomination window will open in late August or early September. For more program information, visit www.PAEMST.org

If you have any questions, please contact:

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