



Wahpe Woyaka pi

(Talking Leaf)

South Dakota Council Teachers of Mathematics Newsletter

Presidential Ponderings

We NEED you!

As we prepare for the 2027 SD STEM Ed conference, I want to talk about how many amazing mathematics teachers I have encountered in South Dakota! A few of them were my K–12 teachers, and many of them are reading this column right now! **What do we need you to do?**



1. We need presenters for the SD STEM Ed Conference on February 4 – 6, 2027 in Huron. If you are trying something new in your classroom, consider sharing this experience with other educators. In fact, it will likely be helpful to you to hear if they have suggestions for improvement. The best way to learn is from each other! **Session Proposals are due on October 31, 2026—submit them [here](#).**

2. Get more involved in SDCTM—we will be electing officers in Huron on Friday afternoon at the SDCTM business meeting. We will need a President-Elect and (maybe) other officers. If you are interested, please reach out to [me](#).

3. Apply for one of our Outstanding Mathematics Teacher Awards. Again, there are SO many great math teachers in our state. Many of you work tirelessly to help your students become better mathematicians—consider applying for one of our two awards. For secondary teachers (6–12), we offer the [Daktronics Outstanding Mathematics Teacher Application](#). For elementary teachers, we have the [SDCTM Outstanding Elementary Math Teacher Application](#)—**applications close at 11:59 PM on November 15th**. You need an updated two-page resume, an application essay addressing certain things, and two letters of recommendation. All required information is included on the forms linked above.

4. Join us at the conference in Huron. If you don't want to get involved by presenting or becoming an officer or applying for an award, you can simply join us in Huron for the wonderful sessions. This year we have great invited speakers: [Kevin Dykema](#), former NCTM President (2022 – 2024); and [Dr. Nicki Newton](#), math coach and author. The SD STEM Ed Conference is always a great event, and the best part of it is always the people! **[Register](#) by January 20th to save money!**

As always, thank you for all that you do for Math Education in South Dakota!

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Fall 2026-2027

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<i>NCTM Representative Tips</i>	2
<i>Elementary Highlights</i>	3
<i>6-8 Highlights</i>	4-5
<i>Classroom Highlights</i>	6
<i>Around the State</i>	7-8
<i>Trig-Star</i>	9-10

Calendar Reminders

<i>SD STEM Ed Conference Speaker Proposal Deadline</i>	<i>Oct. 31</i>
<i>SD STEM Ed Conference Online Registration Deadline</i>	<i>Jan. 20</i>
<i>SD STEM Ed Conference</i>	<i>Feb. 4-6</i>



NCTM Representative Tips

Three Ways to Connect, Learn, and Grow with NCTM

One of the best things about being part of SDCTM is that we're also connected to a much larger community of mathematics educators through NCTM.

Here are three ways to take advantage of that community. Visit [kevindsmith.org/nctm](https://www.kevindsmith.org/nctm) for links to the resources below.

1. Experience an NCTM Conference

The 2026 NCTM Annual Meeting & Exposition is coming to Denver, October 28 - 31. NCTM expects thousands of mathematics educators from around the country and world, with 650+ sessions planned. If you've never attended an NCTM conference, put one on your professional bucket list! There's something energizing about spending a few days surrounded by thousands of people who are excited about teaching and learning mathematics. You'll come home with new activities, new ideas, new connections — and usually a renewed excitement for what you do.

If you can't go to Denver this year, no problem! Start closer to home! The 2027 SD STEM Ed Conference, hosted by SDCTM and SDSTA, will be February 4 - 6 in Huron. It's a great opportunity to learn from and connect with other math and STEM educators right here in South Dakota.

2. Try KenKen!

Looking for a great way to get students thinking? Give KenKen a try. KenKen puzzles combine arithmetic with logic and problem solving. NCTM has highlighted KenKen as a way to challenge students' logical thinking while reinforcing mathematical reasoning, and they've created a page on their website with the game.

These puzzles can make a great warm-up, early-finisher activity, or quick opportunity for students to persevere, look for patterns, and talk about their strategies. I love these types of games/puzzles for making math fun and getting students to THINK!

3. Get Involved!

NCTM isn't just a collection of resources—it's a community, and there are lots of ways to become more involved. NCTM encourages educators to attend conferences, contribute classroom ideas and lessons, write for NCTM publications, and connect with other mathematics educators.

You don't have to be a researcher or a national math expert to contribute. Classroom teachers have experiences, activities, questions, and ideas worth sharing. Visit the NCTM Get Involved page to learn about the opportunities.

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Elementary Highlights

Fall Fun in Math

Fall is here and the season brings many things to love like colorful leaves, pumpkins, apples, changing temps, and hot cocoa. All of these things can also provide a fun way to do a math lesson with a little fall inspiration.

Many of us have cut and counted the pumpkin seeds. I recommend the book "How Many Seeds in a Pumpkin?" by Margert McNamara and G. Brian Karas as a great lead up to this activity. It talks about the lines in the pumpkins to help make predictions along with other external factors you may not have considered when guessing seeds in the past. It also talks about ways to bundle seeds when counting them.

Pumpkins can also be used to weigh and measure with either standard or non-standard units. If you have various pumpkins and gourds, the students can sort by size, color, or type. They can also tally and graph. You can also use a string and find the circumference.

Leaves are a fun way to include symmetry and even design your own leaf out of shapes. They can also be graphed, counted, bundled, or even used to find fractions of a given color of leaves in a basket.

Apple seeds and pumpkin seeds can both be used to count but also can be used to sort, bundle, build arrays and show repeated addition.

If you want to get really fun, bring in your crockpot and do some measuring to make some apple crisp! You can also make some hot chocolate to measure out, and don't forget to count the marshmallows! Food will always make the hallways smell good and make kids wonder what you are up to!

No matter what you are learning, hopefully you can find a way to incorporate some fall fun in your math lessons.

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"...hopefully you can find a way to incorporate some fall fun in your math lessons."



6-8 Highlights

Happy fall and welcome back! I wanted to throw together some fun resources and games for you to use with your middle schoolers. These are great for warm-ups, or they can be used when your lesson accidentally gets finished early, and some can be used for individual early finishers.

The first one is The 24 Game. The original game is a set of cards with 4 numbers. The kids need to use all 4 numbers exactly once with the four basic operations to make the number 24. For example, the card might say 1, 2, 4, 6. Kids might immediately say $4 \times 6 = 24$! But they have to use all 4 numbers. At this point, other kids might notice $2 - 1 = 1$ and $24 \times 1 = 24$, but maybe they will see something else: $6 + 2 = 8$, $4 - 1 = 3$ and $8 \times 3 = 24$. Some of the cards will have more than one way to solve, and others will not. I always encourage my students to write the solution as a single expression such as $(4)(6)(2-1)$ or $(6+2)(4-1)$ to make things a little more challenging and to build their expression writing skills. The 24 Game has expanded since the original game and there are now multiple variations with variables, fractions, integers...you name it! I recommend finding the original and all of the variants at The24Game.com, or you could do a quick google search for some knock off versions at the preferred teacher price (free).

Another fun card game is Set. This is another card game, but it has no numbers! This game promotes logical thinking skills more than computation. The object of the game is to find sets in a group of cards. The objects on each card vary in color, shape, pattern, and amount. For example, one card may have 3 green striped ovals, and another might have 2 solid red diamonds. To make a "set" 3 cards must be all the same or all unique for each characteristic. You can buy the physical cards and get a lot of teacher resources and variations from playmonster.com, or play online [here](#).

If you are looking for a game that includes specific math skills, check out Number Hive. Number Hive is more of a board game than card game and has multiple variations. The basic version focuses on multiplication. The board, made of hexagon-shaped tiles, has numbers on it. At the bottom there are factors students use to determine which hexagon they can claim. If the factors selected are 2 and 3, the player puts a token on the 6 tile. Each turn, the player can change one factor. The goal is to get 4 tiles in a row before your opponent. Number Hive has expanded to include addition and subtraction boards, integer and fraction operations, polynomial operations, and even graphing.

(continued p. 5)



"I wanted to throw together some fun resources and games for you to use with your middle schoolers."



6-8 Highlights (*continued*)

My last game is an online only game called All 10. If you have ever played four 4s with your class, this is similar. In four 4s, you use four 4s to make as many numbers as you can. Rules vary on which operations you can use because to get some numbers, you must use exponents, roots or even factorials(!). In All Ten, you are given 4 numbers and only the basic operations and you are challenged to get all of the numbers 1 through 10. So in a way, it is similar to 24, only you need to get 10 different numbers instead of just 1. You can find the daily All Ten puzzle [here](#).

I hope you can find something fun to do with your students this year. Mine are looking forward to our annual Number Hive Integer Operation Tournament!

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Let's make our social media presence heard, SD Math Teachers!
You can follow SDCTM on the following social media platforms:



Instagram: SDCTM_Math



Facebook: South Dakota Teachers of Mathematics



X (Twitter): @SouthDakotaCTM

Be sure to watch for updates on all platforms!



Classroom Highlights

Playing the Product Game

I have this game printed and in a plastic 3-ring binder sheet so students can use dry-erase markers. This allows them to reuse the paper and play multiple games. This is a great activity for working on multiplication facts. It often takes only a few minutes to play, so it also works well at the end of class. Sometimes I project it on the board and split the class into two groups. This gets students talking and thinking about other strategies.

Product Game

1	2	3	4	5	6
7	8	9	10	12	14
15	16	18	20	21	24
25	27	28	30	32	35
36	40	42	45	48	49
54	56	63	64	72	81

Factors: 1 2 3 4 5 6 7 8 9

Directions:

Student 1: Choose a factor

Student 2: Choose a factor, Cross out the product of the two factors.

Student 1: Move one of the factors to a new factor. Cross off that product.

Student 2: Move one of the factors to a new factor. Cross off the product.

The first student to get 4 in a row wins.

The same factor can be selected twice during the same turn.

Example:

Student 1 chooses 3, Student 2 chooses 3. The product Student 2 crosses off is 9.

Student 1 uses one of the 3's, chooses a factor of 5, and crosses off the product 15.

Play continues until Student 1 or Student 2 has crossed off four products in a row.

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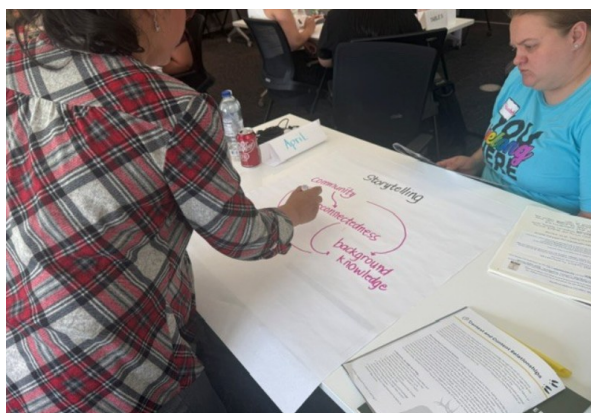
"This is a great activity for working on multiplication facts."



Around the State

The Center for the Advancement of Math and Science Education (CAMSE) at Black Hills State University had a busy summer facilitating professional learning opportunities across South Dakota!

Here are a few highlights from the workshops I had the opportunity to facilitate this summer.



During the second week of June, a team of facilitators traveled to Sioux Falls and the Augustana University campus to facilitate the CIRCLES Alliance workshop, *Building Curious and Courageous Classrooms with Connections to Indigenous STEM*. This was the newest addition to the South Dakota CIRCLES Alliance teaching practices series. During this workshop, educators spent time exploring resources that best support

teaching and learning Indigenous STEM. Educators dug into the Sicangu Indigenous Principles of Learning (SIPL), Oceti Sakowin Essential Understandings (OSEU) and the WoLakota Project website, looking for ways to incorporate these resources in their own lessons and classrooms.

The last week of June, we headed back to the eastern side of the state to Vermillion and the University of South Dakota campus. There, a team of facilitators offered the *STEM Classroom Connections - Exploring the Environment* workshop for the first time. Educators engaged in learning experiences designed to bring joy, help them see hope in the world around them, and explore ways to bring these experiences to their own students. During the workshop, educators visited Spirit Mound, designed and tested a water-filter model, and learned more about research happening right here in South Dakota.



“Be sure to watch for our 2027 summer workshop offerings, which will be announced in February at the STEM Education conference!”

(continued p. 8)



Around the State *(continued)*

I also had the chance to work with some amazing teachers in Chamberlain during a CIRCLES Curriculum writing workshop and our first Veteran STEM Leaders workshop. I wrapped up the summer during the last week of July with our second cohort of STEM Leaders, who gathered in Pierre for five days. This group of educators had a full week exploring topics ranging from leadership and advocacy to systems thinking and effective teaching practices. They visited the State Capitol, collaborated with research scientists and spent plenty of time building connections and networking!



STEM Leadership—Cohort 2

It was a wonderful summer filled with opportunities to learn with amazing educators from across South Dakota!

Be sure to watch for our 2027 summer workshop offerings, which will be announced in February at the STEM Education conference!

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Trig-Star 2027: Encouraging Mathematical Excellence, STEM Career Exploration, and Scholarship Opportunities for South Dakota Students

The Trig-Star program is an exciting opportunity for students and teachers to showcase excellence in mathematics while discovering practical, real-world applications of trigonometry. Sponsored by the National Society of Professional Surveyors (NSPS) and coordinated locally by the South Dakota Society of Professional Land Surveyors (SDSPLS), Trig-Star challenges students to apply their mathematical skills through a timed exam focused on solving problems similar to those encountered in surveying, engineering, construction, architecture, and geospatial sciences. The program helps students connect their classroom education to meaningful careers while promoting academic achievement and problem-solving skills.

For students, Trig-Star offers benefits that extend far beyond a traditional math test. Participants gain valuable experience applying trigonometric concepts in real-world situations and have the opportunity to earn recognition for their academic accomplishments. Participation can strengthen college and scholarship applications while introducing students to rewarding STEM career paths they may not have previously considered. Students who enjoy mathematics are encouraged to test their abilities, compete with their peers, and explore professions where advanced math skills are used every day.

Teachers also benefit from involvement in the Trig-Star program. The exam reinforces classroom instruction by demonstrating the practical importance of trigonometry beyond textbooks and standardized testing. Participation provides an engaging enrichment activity that recognizes student achievement and highlights the value of mathematics education. Teachers who support Trig-Star help inspire future STEM professionals while building relationships with local surveyors and industry leaders who depend upon strong mathematical skills in their work.

Trig-Star participants have the opportunity to compete at multiple levels. A representative from the SDSPLS will administer the local exam, where students compete against their peers for state-level recognition. The three highest-scoring students will receive prizes and recognition by the SDSPLS. The student awarded 1st place in South Dakota will be named the State Trig-Star Champion. This individual is subsequently entered into the NSPS Trig-Star Competition, where they compete against state winners from across the country in a second exam also administered by the SDSPLS. This progression from state to national competition provides students with opportunities for recognition while measuring their skills against some of the nation's most talented mathematics students.

One of the most attractive aspects of the Trig-Star program is the opportunity for students and teachers to earn financial awards. In South Dakota, a total of \$875 was awarded to the top three state finishers in 2026, recognizing outstanding achievement in mathematics and encouraging participation among students across the state.



(continued p. 10)



These awards celebrate academic excellence while providing a tangible reward for dedication and hard work.

Students who advance to the national competition become eligible for even larger awards. Beginning in 2026, the NSPS increased the national student awards to \$4,000 for First Place, \$2,000 for Second Place, and \$1,000 for Third Place. In addition, the coordinating teachers of the national winning students are recognized through the Richard E. Lomax National Teaching Excellence Awards, receiving \$1,250 for First Place, \$750 for Second Place, and \$500 for Third Place. These awards recognize both exceptional student achievement and the dedicated educators who help students develop their mathematical talents.

Beyond prize money, Trig-Star participation can create opportunities for future scholarships and educational advancement. The NSPS offers scholarship opportunities for students pursuing degrees related to surveying, geomatics, and geospatial sciences. Participation in a nationally recognized academic competition demonstrates a commitment to learning, analytical thinking, and STEM-related fields—qualities that are highly valued by colleges and scholarship committees. For many students, Trig-Star serves as an early introduction to professions that combine mathematics, technology, and problem-solving in meaningful and rewarding ways.

As planning begins for the **Spring 2027 Trig-Star Exam**, mathematics educators are encouraged to take advantage of this opportunity to challenge students, recognize academic achievement, and promote STEM career exploration. By connecting mathematics education with real-world applications, Trig-Star helps students understand how the concepts they learn in the classroom can lead to fulfilling careers and future opportunities.

Any high school mathematics educator interested in participating in the Spring 2027 Trig-Star Exam is encouraged to contact Ruthie Wetzel, the South Dakota Trig-Star Coordinator, at ruthie.wetzel@dgr.com. Additional information about the Trig-Star program, sample exams, and national scholarship opportunities can be found on the NSPS Trig-Star website at [Trig-Star Program](#).

We look forward to working with schools across South Dakota and to making the 2027 Trig-Star another successful year of promoting mathematics excellence and student achievement.

Ruthie Wetzel, PLS



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