SPRING NEWSLETTER 2024

MESSAGE FROM THE PRESIDENT

Dear CTCTM Members,

I would like to take a moment to introduce myself. I currently serve as Midway ISD's Director of Elementary Education and am very excited to be the incoming president of CTCTM. I have actively worked in mathematics in central Texas over the last 17 years and am excited to lead this organization of amazing educators and influencers of mathematics.

I want to take a moment and thank you for the passion and dedication you bring to your mathematics classrooms and fields of mathematics every day. As we navigate joys and challenges of teachers, I want you to know that your work in mathematics is seen and is shaping the minds of future mathematicians! Thank you!

Mathematics is more than numbers and formulas; it is an opportunity to unlock opportunities and perspectives for our students. Your roles as mathematics educators are critical to guiding students by instilling in them not only mathematical knowledge, but also critical thinking skills, problem-solving abilities, and a deep sense of confidence in seeing themselves as mathematicians.

We will have our annual in-person conference this fall. Be on the lookout for registration and call for proposals. I hope each of you finishes the 2023-2024 school year well.

All my best,

Kimberly Johnston
CTCTM President

MESSAGES FROM SOME OF OUR VICE PRESIDENTS

HIGH SCHOOL

The Dog Ate My Homework

We have heard all the excuses in the book about why a student doesn't have their homework, and quite frankly I probably have used a few of those excuses for my own school work that has been "turned in" late (including this article). When I first started teaching almost 15 years ago I was insistent on homework and took a grade for it, but as technology has evolved and I have evolved in my teaching practices I have a different approach. At the beginning of the year, I tell my students that homework is optional, in which cheers ensue, and in fact, I will give them the answers to the homework, in which more cheers ensue. I have several reasons for this and I know this is not a popular opinion amongst math teachers, but hear me out. When we assign homework we don't know who or what (AI) is doing their homework. I know of countless times when students give their computers or homework papers to another student who then does the work for them. That was before chatGPT or any other AI that will work the problem out for them, and so now I can only imagine who or what that grade is actually for. So, I have combated that with every grade in my gradebook comes from what happens in class under my watchful eye. The students take a quiz at the end of the week to assess their knowledge of the material we learned in class.

I begin the year, and therefore set the expectation, how "homework" is used in my class. I show the students that I know how to juggle. They are pretty mesmerized and ask me to add more tennis balls or other objects and it is a cool way to connect to them. I then tell them how I learned how to juggle, my grandfather taught me, again another connection, because I get to brag on him which makes me beam. I tell them that my grandfather made me start out with one ball, tossing it back and forth, then add two, then eventually three. So I ask if anyone in class can juggle, usually no one can, so I say "What if we had a juggling competition at the end of the week? Who would need to practice more? Me or (any student's name that can't juggle)?" The class usually responds with the student who can't juggle. Exactly! Why would someone need to practice a skill if they already know how to pretty perfectly perform this skill? They shouldn't! And their grade shouldn't be affected by that. I have a Calculus student, who is a mathematical genius (or close to it), made this comment to me about my class, "I love this class, because the grade isn't about 'busy work.' " This comment really got me thinking about how their math classes prior to this probably put a grade on "busy work" or practice of a skill he already mastered but didn't see the point in practicing any more. This student could "juggle" and didn't need to practice all week before the competition, however, the students that did need to practice got the grade for homework.

I hope this gets you to thinking about your homework policies and the reason behind those policies. Are your policies about "busy work" or is it really about practice and perfecting the skill?

Meaghan Lewis
Robinson High School Math Teacher & Teacher Leader
Vice President, High School

I hope this semester is going well for all of you!

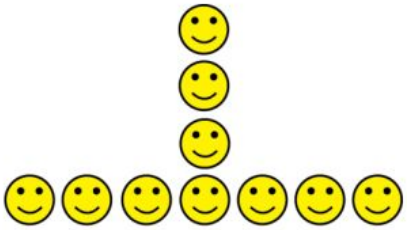
This past year I have been tutoring a student and found that pattern-recognition tasks have supported the skills that he needs to build a deeper understanding of the mathematics he learns in class. The Happy Counting Task and the Hexagon Trails Task were both from NCTM and my 5th-grade student loved engaging in these tasks. At the time of completing the tasks, he had not yet learned variables and how to write equations, but he was able to verbalize his thinking and the pattern he recognized. By engaging in growing pattern tasks, students build their algebraic thinking skills and become better equipped to problem-solve, make connections, and justify their reasoning. Students discover the equations that explain the pattern which in turn also engages them in productive struggle and builds their confidence. Growing pattern tasks support algebraic thinking and strengthen students' conceptual understanding of equations. I encourage you to check out the resources for growing patterns from NCTM and challenge you and your students to try something new!

Happy Counting

Build Step 4 and Step 5 of this happy pattern. As you are drawing, think about how you know what to draw next.

Step 1

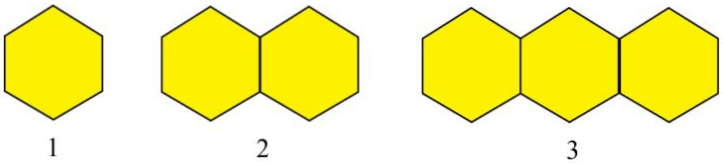
Step 2



Step 3

Hexagon Trails

1. Build Step 4 and Step 5 of this trail.



2. Record the perimeter for each hexagon trail.

Number of Hexagons	1	2	3	4	5
Perimeter of Trail					

3. Describe your counting strategy for finding the perimeter. Write your description clearly enough that anyone else can count in the way that you are describing.

Have a wonderful last few months of the school year!

Mallory Siemer
Vice President, Pre-Service Teachers

I hope that everybody's spring is off to a great start and that you are all ready for the eclipse! According to NASA, the next total solar eclipse won't cross North America until August 23rd, 2044, so I hope you got to witness the eclipse on April 8th!

Speaking of solar eclipses...what a great opportunity to talk about math! Students and teachers are often asking and attempting to answer the question of why the content they are learning is important and relevant. Moreover, research shows that student buy-in is one of the most critical steps! Connecting the mathematics you are covering to something that everybody will get to experience is a great way to get this buy-in (more ways of helping answer the "why" question can be found here: https://www.edweek.org/teaching-learning/opinion-responses-to-why-do-i-have-to-learn-this/2020/05).

For my classes, I plan to follow NASA's "Pi in the Sky" math challenge, pictured below. This activity deals with both areas of circles, finding unknown lengths, and similar triangles, all concepts that come up in high school and college mathematics. Perhaps most importantly, it will give my students the opportunity to practice taking apart a problem that is not-so straightforward from the onset.

This is just one of the many types of mathematics you could discuss in the coming month. The important thing is that we are taking every opportunity we can to make mathematics relevant to our students. My challenge to you over the rest of the school year is to find the little connections that will increase your student buy-in. Did you school just win the women's state basketball championship and you are teaching about parabolas? Great! Talk about the path of a basketball during a free throw. Unsure of how to motivate studying sine and cosine functions, but you have a lot of musicians in the class? Talk about how sound waves can be modeled by these functions.

And if you have a once-in-twenty-years eclipse that everybody just experienced? Well, you know what to do.

Ian Grigsby
Vice President, College and University

FROM YOUR NCTM REPRESENTATIVE

Innovative Lessons and Activities

Math in Action

The set of 3-Act Tasks in this collection features the mathematics that is used in 10 careers, ranging from architecture to veterinary medicine. The tasks were designed to preempt the clichéd question, "When will we ever use this?" The set comprises 50 three-act tasks, with five tasks per career: one for each grade level from grades 2 through 6. Much of the mathematics discussed in the interviews is appropriate for higher-level mathematics in grades 7–12, such as working with solutions, functions, and three-dimensional geometry.

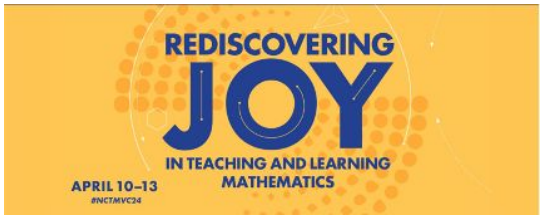
More information available at:
https://www.nctm.org/Classroom-Resources/Innovative-Lessons-and-Activities/Math-in-Action/Math-In-Action/

Annual Meeting & Exposition

2024 NCTM Annual Meeting & Exposition in Chicago, Illinois
September 25-28, 2024

NCTM's Annual Meeting & Exposition is the premier professional development event for mathematics educators, from PreK-12 teachers to university professors. This event will feature hundreds of education sessions and provide a full range of program content, including learning opportunities, networking, and collaboration.

https://www.nctm.org/annualmeeting/



NCTM Virtual Conference

Join your colleagues for the NCTM Virtual conference and share in the excitement and love of math! The exciting online platform provides opportunities for networking, small chat rooms, discussions with exhibitors, and much more!
Go to: https://www.nctm.org/virtual2024/

Available Grants

Apply for NCTM's Mathematics Education Trust grants, scholarships, and awards. Funding ranges from $1,500 to $24,000 and is available to help math teachers, prospective teachers, and other math educators improve the teaching and learning of mathematics.

More information available at
https://www.nctm.org/Grants/

MET Mathematics Education Trust

NCTM NATIONAL COUNCIL OF TEACHERS OF MATHEMATICS

Keep your Membership Up to Date

If you are not an NCTM member, be sure to join today! If you are a member, be sure to keep you membership up to date, so that you do not miss a single resources!

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To learn more about what each option offers, go to
https://www.nctm.org/Membership/

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