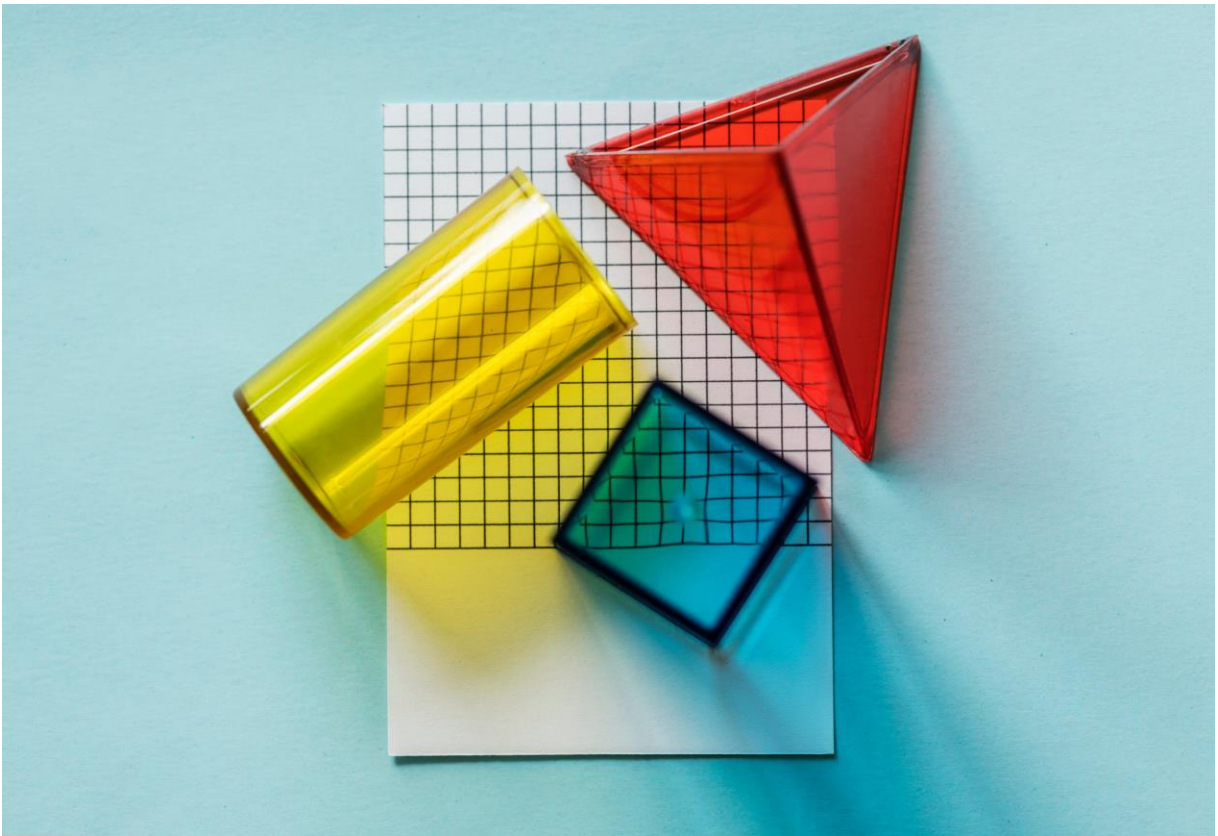


THE UPPER EAST
TENNESSEE COUNCIL
OF TEACHERS OF
MATHEMATICS
NEWSLETTER



VOL 20, ISSUE 1

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MEETINGS FOR 2019-20

Usual schedule: 4:00-4:45: Refreshments, announcements, business meetings, short presentations; 4:45-6:00: Programs for all levels.

Next Meeting: Tuesday, September 3: Robinson Middle School, Kingsport



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THE CASE FOR CALENDAR TIME IN KINDERGARTEN CLASSROOMS

- KIM GASSIOT -

In the present days of high stakes testing, more and more time constraints due to curriculum requirements, and higher numbers in classroom sizes, some people believe the 15 minutes devoted to a daily calendar time is frivolous and not time well-spent. The following will highlight reasons why a daily calendar time in Kindergarten is beneficial.

Number of Days in School:

Straw counting (bundling to practice place value) Place 1 straw in the ones place daily. Once 10 straws have been collected, wrap the bundle with a rubber band and move the bundle to the 10s place. Do this daily and students will begin to see the patterns involved with place value. Add a post it note and write the number of straws in the ones place then write the number of bundles on a post it note on the tens place.

Tally Marks to keep track of days in school. Add a tally mark for each day. Once there are 4 tally marks, cross the 5th tally mark. Keep up this pattern throughout the year. Students will begin to notice the

pattern of counting by 5s. Skip counting by 5s can be practiced daily.

With post its (red, dark yellow, dark green, orange, dark blue, pink, light green, light blue, light yellow, heart shaped) write one number per day, consecutively, which will build a 100s chart. Keep the pattern constant as you build it which will allow for the patterns to become obvious as it is built.

Months of the year:

Read the months of the year daily.

Choose a student to hold a pointer and point at the months as they are read.

Remind students to touch the month as it is read, practicing One to One correspondence.

Point out that the months remain in the same order (pattern) every year. May discuss what would the effects be if the months changed order.

Calendar days:

Add a square for each day to help to show the date. Students can use a post-it note to write the name of a special event that will occur in the coming month. As students ask "when is our field trip?" count the days until the post-it note showing the special day.

Coins:

Introduce one coin a week at a time.
Focus on name, attributes, how much it is worth. Sing money song.
Piggy Bank: as year progresses add a combination of coins and count to determine how much the coins are worth

Clock:

Highlight the numbers on the clock.
Numbers never change on the clock.
Focus on hour hand in Kindergarten, extending to include minute hand as students become ready.

Yesterday Was, Today Is,

Tomorrow Will Be:

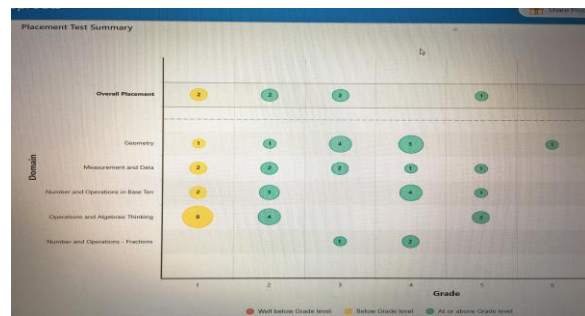
Create and Laminate 3 short sentence strips that have
Yesterday Was _____.
Today Is _____.
Tomorrow Will Be _____.
Complete the sentences daily.
Use "Today Is" as a way to begin a morning message, written by students.
Calendar time in a Kindergarten classroom provides daily practice for skills that are vital for the success of students.
Opportunities abound throughout the process that allow students to think deeper and to also discuss thoughts and ideas with their classmates.

BENEFITS OF PRODIGY

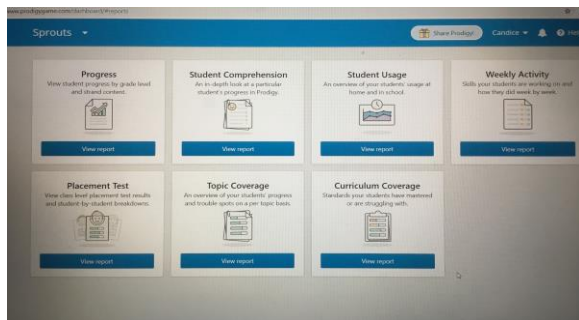
- CANDICE SPRADLIN -

Prodigy is a wonderful classroom resource that provides review and practice. It is very user friendly for both teachers and students. A teacher can set up multiple classroom accounts all for free. There is a student login card that can be printed and a parent letter that can be sent home.

The first step in Prodigy is the placement test. This test will show if a student is placed below, at, or above grade level. This can be viewed as a summary of individual domains or as an overall placement on a chart. A teacher can also view detailed individual placements of their students that will show a breakdown of correct and incorrect problems. This is beneficial data to begin placing students in groups for center rotations and to get an idea of where my students are within the curriculum.



As a teacher you can let students work through skills on Prodigy based on their ability level, this is great for differentiation or assign individual assignments for targeted skills and standards. Prodigy even sends emails when there is new student activity so you can always keep track of students progress. This image shows the different types of reports you can view for your students.



My students use Prodigy in a variety of ways, such as part of our Technology rotation in centers, assigned lessons to help reinforce specific skills, and even test practice. Students come to school and talk about how they battled their friend last night, so they are practicing at home as well. They can earn neat things within the game by leveling up and compete for class rank. My students love Prodigy and I love seeing them learn and enjoy Math!

CHANGING MINDSETS

- HANNAH WILSON -

In a couple of weeks, my new group of students, along with their families, will be given the opportunity to meet me for the first time at our annual Meet the Teacher Day. As I prepare for this day, I think back to previous years when wide-eyed students enter my room timidly for the first time, shake my hand, and tell me their name. Although the beginning of the interaction has always been positive, many times somewhere in the conversation, I will hear them say "I don't like math" or "I'm not good at math". Oh how this hurts my teacher heart!

By fifth grade, I have found that students have already established a mindset about math – whether positive or negative. Even though, I know this mindset can change, it still takes a lot of work by the student and me to accomplish a change. Over the past few years, I have struggled with how to change students' thinking and feelings towards math and school in general. Although I have tried numerous tactics, I still feel there is room for improvement.

Here is a list of strategies I am committing to try this year in order to change the mindsets that need to be changed and keep the rest in the right place.

Begin the year with growth mindset lessons that show students it is okay if you cannot do it...yet. We will revisit these lessons as needed throughout the year.

Establish a respectful culture that teaches students how to respond to classmates when they disagree or make a mistake. I will spend time modeling appropriate ways to respond and give students time to practice these interactions until they become natural responses.

Teach students how their brains work and what helps their brains work best.

Teach students that mistakes are expected, inspected, and corrected.

Regularly implement activities and problems that require students to think and share their thinking with others to promote different methods and strategies to solve problems. These may be in the form of open ended problems that have multiple correct answers or problems that have multiple paths to the correct answer.

Require students to share their thinking with the class, with a partner, or with me through speaking, writing, or drawing pictures.

Teach using different strategies and methods to show students there is more than one way to solve a problem.

Give students opportunities to make their own choices with the strategies they choose, materials they use, or the assignments they complete.

As a teacher, I have a strong desire for my students to feel comfortable in my classroom to share their thoughts, feelings, and answers (even if they are wrong). I want them to love math, not because it is the class I teach, but because I want them to understand that they will need math in order to be successful in the future. My students need to understand the concepts I am trying to teach them, so they can be successful in high school, college, a career, and in life. It is my hope that these strategies will create a classroom environment that is welcoming, warm, judgement free, challenging, engaging, and empowering. How are you going to change mindsets in your classroom this year?



THE IMPORTANCE OF PLAY IN ELEMENTARY MATH CLASS

- KAMI PRESTON -

“Play is the highest form of research.” – Albert Einstein

“What books are to reading, play is to mathematics.”

– Dan Finkel, founder of Math for Love

“Math is like ice cream, with more flavors than you can ever imagine. If all your children ever do is textbook math, it's like feeding them broccoli-flavored ice cream.” – Denise Gaskins, author of Let's Play Math blog

The first time my principal walked into my classroom last year, it must have looked like complete chaos. A cluster of students were on their bellies in the cubby room, with plastic coins and laminated play money scattered around them. Four students lounged on pillows thrown across a big rug, with laptops on their knees. Perched over a low table, four boys were flipping playing cards in rapid succession with serious competition in their eyes. Another group sat around the largest table in the room with me, dominoes strewn haphazardly across the surface. Four girls flitted around the room, clipboards and pencils in hand. Indoor recess? Nope. Friday free time? Not exactly. My principal was passing through during my math block. Is this a preschool class? No, but I taught preschool for six years. Kindergarten? No, but I did spend

5 years teaching kindergarten. This is third grade. This is math. This is learning through play.

My undergraduate and master's degrees in Early Childhood Development prepared me well for a career in teaching small children. Believing whole-heartedly in the importance of play in learning, I thrived in preschool and kindergarten settings. Developmentally appropriate practice, child-centered teaching, and the project approach were obvious in my teaching. Creating enticing, engaging environments and enriching learning opportunities for my students became my passion. But when the opportunity presented itself to stretch to the upper end of my early childhood licensure, I jumped at the chance to take on a new challenge. No more wiping noses or tying shoes! I would be able to write instructions on the board and expect students to follow them! I envisioned reading chapter books aloud together and having meaningful discussions with these older minds. I thought of my own excitement as a child for all the “big kid” sorts of things one learned in third grade and remembered how much I loved my own third grade teacher. I simply could not wait! Then reality began to set in. Third grade? Wait...THIRD GRADE? Desks in rows? Multiplication? Fifty states? Main idea? Motion and electricity? Cursive? What exactly had I signed on for? Could I teach without centers? What about thematic units? Would I miss story time and songs? It did not take long for me to

realize that the components of early childhood development around which I centered my teaching philosophy would have to follow me upstairs to third grade. The belief that children, even third graders, learned through play was deeply ingrained within me. Centers and songs, storybooks and play would have to be part of my teaching in order for me and my students to be successful.

Naturally, some subject areas or units of study lend themselves easily to an early childhood, play-based approach. Others require a bit more research and creativity. Math to me, with its manipulatives, seems to be the most seamlessly aligned. Play in math class offers children the opportunity to explore the concrete before converting to the representative and ultimately the abstract.

Early childhood in my third grade math class means students are using engaging activities and materials to support curricula while teachers are meeting standards through playful instruction. In my classroom, play is not merely free choice chaos, but intentional, goal-in-mind, planning that provides choice, active engagement, the manipulation of materials, group collaboration, and content exploration. So what does that look like? In my class, math is board games, scavenger hunts, SCOOT! challenges, songs, real-world problem solving, free-play exploration, hands-on projects, rolling dice, math

literature, demonstrations and manipulatives, dancing and hand motions, number of the day play, 3 act video lessons, card games, rotating learning stations, and so much more. Does that mean there is never direct instruction? Of course not!

Does this methodology include small groups, partner work and independent learning? Absolutely. Is there homework? Yes, when appropriate. Are these play-based activities aligned with standards? You'd better believe it! And our test scores? Fantastic! The National Association for the Education of Young Children explains that "there is no need to choose between play and teaching academic knowledge and skills. Abundant research has demonstrated that young children enjoy learning math and can learn far more than was previously assumed—without a single flash card or worksheet" (Stipek, 2017).

Even the National Association of Elementary School Principals acknowledges the importance of play in the classroom. "The children's own play and the content offered by teachers embrace one another," (Almon, 2013). Play is not unlike the inquiry-based approach to science we have implemented in our schools. We engage, explore, explain, elaborate and evaluate. Students are encouraged to contemplate "what if" thinking during play. Play allows children to explore possibilities, experience disequilibrium, and revise

strategies. The teacher in this setting serves as facilitator, enhancing and guiding learning with the end goal and curriculum pacing in mind. Children scaffold as they play, building on one another's knowledge. Perhaps most importantly, in play, the process is of greater importance than the outcome. Teacher and student are allowed to explore the why or the how, rather than solely offer a final regurgitated answer.

This is how I third grade. This is how I do math. This is how we play. Admittedly, I was nervous when my principal walked into my classroom that afternoon last fall. Not all educators, especially those looking at test scores, understand the value of play. Play isn't necessarily quiet. A low hum buzzed through the air that day, punctuated with the occasional squeal of delight. Play can be messy. My eyes flitted to the math shrapnel scattered across the room. Play can look chaotic. At first glance, no two students seemed to be doing exactly the same thing. But her smile calmed my nerves. "We're in the middle of math stations," I explained. But she held up a hand and nodded. "I can see that," she replied, "and I love it!"

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Finkel, Dan. Math for Love. <https://mathforlove.com/who-am-i/>.
Gaskins, Denise. Let's Play Math! <https://denisegaskins.com/about/>.
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WELCOME TO MY CLASSROOM!

- RACHEL CLOYD -

Whenever I tell people I teach middle school, they look at me like I am crazy. Then I tell them I teach middle school math, and I really get the looks. I want to take a minute to allow you to step into my classroom to see what middle school math is all about.

When students walk through my door, they are greeted. Sometimes it is accepted and returned, other times I get a glare, a growl, or no interaction at all. No matter what the students give me, I will give them my best. Students make their way to the desks and out come math spirals. After a week or so, I don't have to tell them to take them out because the classroom is ran on routine. Middle schoolers thrive on routine and expectations. Most have the opinion that students want to do whatever, whenever, but in actuality these routine allow the students to function in the classroom. Outside of school too many have the free reign to do as they please, and this structure gives them comfort to be successful. Students are allowed to have independent thinking time to work on morning math – problems that allow students to review previous skills. This independent work allows students to have quiet work time and to get their minds math focused. While they are working, it allows me time to get a perspective of the group for the day. Each day, although I have the same 30 students, class dynamics vary day to day.

After morning math is complete, homework time is next. Homework always becomes a touchy subject among

educators: give homework, don't give homework, use it as classwork, assign it but give a participation grade, grade for accuracy...the list could go on forever. Many students need math practice, so in my classroom, I give homework. Homework is an opportunity to practice the skills that have been covered thoroughly in the classroom. Homework consists of 10-12 problems MAX. If a student can successfully complete a few problems, there is no need to complete 40. Homework is also something I take an accuracy grade. If students are going to give effort and time to complete it, they want credit for it. Checking homework can become a whole class activity or cooperative groups. When checked in groups, students have the opportunity to have discussion on problems that were both correct and incorrect. This allows students to help each other clear up misconceptions.

Next, we move to the lesson for the day. I rarely do a lesson in one day – I'm a slow-moving teacher. □ My lessons are based on an Essential Question (EQ) that has been derived from Tennessee State Standards. The EQ is presented to the student, which leads to the activator of the lesson. These two should go hand in hand. The EQ guides the focus for the lesson, and the activator gets students thinking on the lesson topic. Within the lesson, students use graphic organizers for note taking. Middle schoolers still have difficulty picking out the important facts that are worthy of being written down. Some try to write every single piece of information, while others write nothing. The organizer helps to guide students to know what is important enough to write.

As the class moves through the lesson, we are up and moving. Teenagers need to move! If they don't, usually one of two things happen: they get too antsy and lose focus or nap time! Group work and collaboration are major parts of each lesson. Grouping of students is a cumbersome but necessary task. Time and effort must be put in at the beginning of the school year to make it work. One grouping technique I use is cards on each desk. I take 6 different colors of note cards (5 of each color). I then divide the card into 4 sections. In the different sections, I use sticker themes to divide students. To get groups of 2, one square might have sunglasses in the top left corner. That student would have to find a partner that had a sun in the top left corner. For groups of 4, Disney princesses may be represented. To form a group, all of the Cinderellas would work together, all of the Belles, Ariels, and Snow Whites. Out of my grouping cards, I am able to create groups of 2 members up through 6. Stickers can vary from sports, super heroes, alphabet, whatever I can find. After I make the cards, I am deliberate about my seating charts. For grouping, it is imperative that you know your students by math strengths/weaknesses and individual personalities. The group cards make it quick and easy for groups to divide during the lesson. I don't have to divide students – I call a section on the card, and students form groups based on that section.

By students working in groups, many things are accomplished. Students are able to teach and learn math from the others in the group. Often if another student explains the concept, it helps the light bulb come on for a classmate. I am

able to assess my students, have conversations, and build relationships. I use this time to learn about math skills but also learn about the baseball game from last night, a new pet, a fight with mom before school. Teachers must take the time to build the relationships with the students. If these relationships are not fostered, often students will not work as hard for math achievement.



To wrap up the day in math, summarizers are used. Even though it is the end of the class period, it may or may not be the end of the lesson. This final check for understanding is key to driving my instruction. It allows me to determine if reteaching is necessary or lets me know I can move forward with the lesson. Summarizers do not have to be elaborate or a big production. I often use ticket out the door checks, with the students writing a quick statement about today's class – show me an example of what we did today, what questions do you have, where are you confident or confused. After the lesson is wrapped, and students are out the door, I take a two second breath, chug some coffee, and do it all again as I welcome my next group of students through my door.

FIXING MY MISTAKES

- BRIAN TRENT -

As a teacher of 33 years, I have always looked for ways that would help my students look at what they have made a mistake on and why they made the mistake. When working with teenage students, convincing them that it is worth the time to do that is not the same as a college student, or as an older adult. I have noticed over time they have to see a value in fixing their mistakes on any assignment and the concept of just doing for the purpose of learning is not a valid reason for most teenagers.

I did notice that most students will ask the question, while doing any assignment, "is this for a grade". Over time, this helped me realize that for a teenager, a grade is what they value. Whether it was to make an A in the class, or just to pass the class, the grade is their value at school.

As time passed, I realized that if I could use their grades as leverage to get them to focus on the mistakes would be a valuable asset. About 15 years ago, I got the idea from another teacher of giving the students some extra points on a quiz if they went back and corrected the problems they missed. They would then, turn in the corrections with their original paper. I would check back over the

problems. The students would do the ones they could figure out but leave the hard ones blank. This helped some but they also needed to look at the more difficult ones as well.

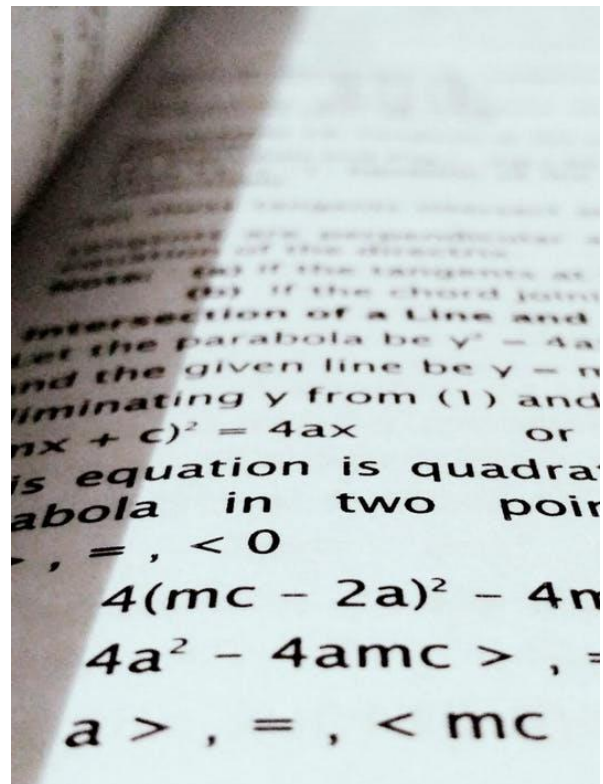
My process has evolved over time and I now give them time to work on the ones they can figure out while working in groups. After a period of allotted time, I would then work out the problems they were not able to figure out. This is actually doing the problems for them but them writing down that problem and the work that is involved in completing it is still a valuable process, even if it is done for them.

I have noticed, over the last few years that students learn more by going over problems they have missed multiple times will help them to gain confidence in doing the mathematical processes. If it is done over a few years, then they gain more understanding in concepts that they would normally have remained stagnant in. I believe that giving them extra points on their quizzes and tests is a way to motivate students to do something they would not normally do.

There is an argument that this would cause us not to see the true grade of the student but we for some reason this argument is not used when we inflate students' grades in higher level classes.

With students having GPAs higher than 4.0, does not bother the fact that the top students grades are inflated. I believe if grades are increased by 25% or 50% then the increases are proportional and it becomes a big deal for the students that may have done really bad but it gives them a big encouragement into doing corrections on missed problems.

The most disheartening thing for a teacher to see is a student that has lost all hope of learning something and believing they will never learn it.



2020 NCTM CENTENNIAL—CALL FOR PHOTOGRAPHS

NCTM is looking for photos or memorabilia from previous NCTM conferences and events to share at the 2020 Centennial Celebration. If you have any mementos from 1920–1970 that you would be willing to share, please submit scans of the documents to centennial@nctm.org for consideration.

IS YOUR INFORMATION CURRENT?

The 2019 Board of Directors online election opens on September 30. Take a moment to log in to your profile to make sure your membership is current and your email address is up to date to receive ballot information when voting begins. You have through August 30 to make changes. We look forward to receiving your vote; NCTM is its members!

CALL FOR SPECIFIC MANUSCRIPTS

NCTM is looking for submissions focused on the PK–2 and 3–5 grade bands.

LOOK FOR THEMED EDITIONS

Before you start receiving the new monthly journal, *Mathematics Teacher: Learning and Teaching PK–12 (MTLT)* in January 2020, you will have access to three separate themed publications, with articles that span all three school journals. These editions will appear online in July, September, and November. Use #MTLTPK12 to stay updated.

- The Best of TCM, MTMS, and MT on "Questions, Discourse, and Evidence" **Now available!**
- The Best of TCM, MTMS, and MT on "Fluency, Understanding, and Productive Struggle" **Available September 2019**
- The Best of TCM, MTMS, and MT on "Goals, Tasks, and Representations" **Available November 2019**

WRITE AND REVIEW FOR MTLT

NCTM will launch its newest journal, *Mathematics Teacher: Learning and Teaching PK–12*, in January 2020. Visit Manuscript Central to create an account and submit articles for peer review and publication. View the guidelines and submission process online for more details.

Authors are encouraged to submit article and department manuscripts to NCTM for consideration in the 2020 journal. Find more details about types of feature and department articles here.



Upper East Tennessee Council of Teachers of Mathematics

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UETCTM may be asked to share your information with other math organizations (NCTM, TMTA, etc.) that promote mathematics education.

Please check all applicable statements below.

- I am currently a member of NCTM
- I would NOT like my information to be shared
- I am interested in leading a session at UETCTM
- I am interested in serving as an officer at UETCTM