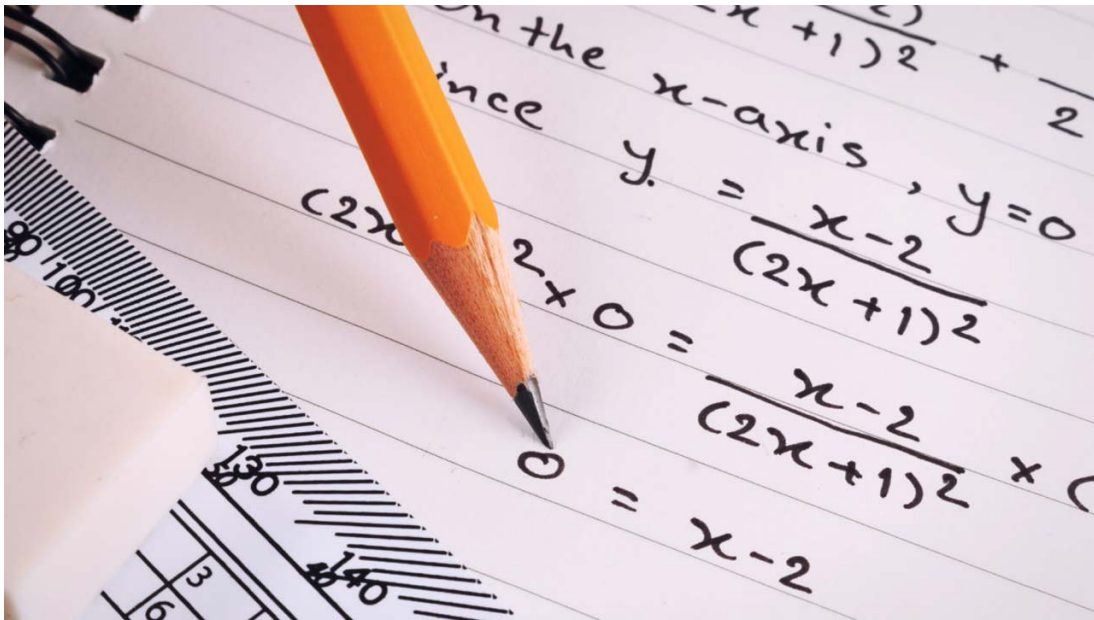


# THE UPPER EAST TENNESSEE COUNCIL OF TEACHERS OF MATHEMATICS



VOL 19, ISSUE 6

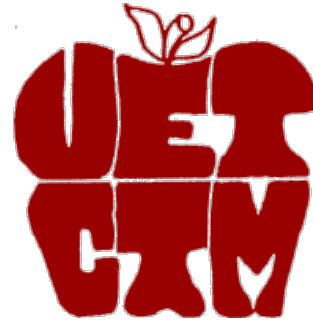
May, 2019

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## UETCTM Meetings for 2018-19 Officers for 2018-2019:

Usual schedule: 4:00-4:45: Refreshments, announcements, business meetings, short presentations; 4:45-6:00: Programs for all levels.  
Next Meeting: Please check the UETCTM website over the summer to see the schedule for the 2019-2020 school year. Have a great summer!



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## CELEBRATING OUR MISTAKES

-EMILY PETERSON-

“Oh my goodness, I hope I don’t make a mistake in front of all of these people...” If you are anything like me, you have probably had this thought. This thought crosses most people’s minds whenever they put themselves out there, put themselves on the line. Any time an adult is in the spotlight, they tense up, hoping they don’t make a mistake. This feeling is not a commonality shared by only those of the teaching profession. Rather, it is something that can impact any person of any profession. We adults have created this fear of failure of any kind. We think we are the only ones that have this fear, that it impacts only ourselves.

The reality of the situation is most of us have little people in our lives in some way, and those little people are observing us. They witness our fear of failure and of making mistakes. They learn from looking up to us that mistakes are something to hurriedly fix, something to be ashamed of or embarrassed about, or something that we should not admit that we have done. The problem there should be obvious. These little sponges soak up everything. Some students bring this learned fear of failure into the classroom. I heard multiple times in my classroom this year, all in reaction to making a mistake or failing to understand a concept, “I can’t!”, “I’m just not that smart,” and even “I’m no good, I’m just a loser.”

That kind of thinking makes this teacher’s heart sad! I repeated throughout this year that mistakes are **okay** because they are how we learn. Mistakes are to be celebrated and only become detrimental when we do not learn and grow from them, when we panic because of the mistake.

Mistakes actually make our amazing brain grow. Too often, students get caught up on the fact that they made a mistake and cannot move past the mistake itself. As educators, we are in charge of cultivating an environment accepting of mistakes, one in which students feel comfortable and supported when those inevitable mistakes occur. It is not enough to instill a love of learning in our students. Educators should encourage risk-taking academically and challenge students to embrace their mistakes as a learning opportunity rather than shy away from them.

In my classroom this year, we will anticipate mistakes and failures because they will happen—and not just to my students. My personal goal this year is to challenge my students and myself when we are faced with mistakes, or even failure, to hold our heads high, admit the mistake, celebrate the mistake, and LEARN from it. Mistakes are a part of human nature. They will happen, perhaps happen often depending on the day, but the mistakes do not control nor do they define us. They teach us. So, the next time you inevitably make a mistake, or the little one in your life makes a mistake, go easy on yourself or your little one. A mistake means it’s time to reflect, time to learn, and time to celebrate how beneficial our mistakes can be.



# STUDENTS ARE LEADERS

-CINDI ROBERTS-

A couple of years ago, a small group of teachers from my school had the opportunity to attend a leadership symposium and visit a school which was following a well-known school leadership program based on Stephen Covey's Seven Habits of Highly Effective People (1989). As a result of the great things we saw going on at these schools, our Title 1 school in Hawkins County, Tennessee chose to implement our own vision of leadership in our PreK-2 school. The results of this first year have been astounding.

Some of the things we have implemented in our school are leadership roles for kids, leadership assemblies, leadership notebooks, and leadership clubs. Even in Pre K-2, students are able to take on many of the leadership roles and responsibilities in our school community. For example, our students are now in charge of things such as morning newscasts, a Sunday night robocall highlighting the upcoming events at our school, and the lost and found cart which comes around to classrooms on a weekly basis. The biggest accomplishments of our leadership program are the leadership assemblies and leadership clubs. We have assembly and club day once a month, and this has changed the climate of our school tremendously. As we have progressed through this school year, the students have taken ownership of these assemblies. There is very little speaking done by adults during these assemblies. The students are the emcees, lead the pledge and hold the flag, and they share their personal successes in meeting personal and academic goals. A personal highlight was seeing the pride of my students as they announced their goals. ESL students who were so unsure of their English abilities at the beginning of the school year, stood up in front of the entire

school to share academic successes in the later months. Students who thought that they might never reach their goals that they set month after month began meeting and even exceeding the goals they set for themselves.

Following the assembly, the students dismiss to clubs, including STEM Club, Science Club, Cooking Club, Cricut Club, Fabulous Fibers, and many more. While these clubs are only held once a month, they have had a huge impact on our students. Some may not consider this an important part of our curriculum; however, you haven't seen a student shine until they have success in making their own pillow, designing their own airplane, or working together to investigate the properties of matter of oobleck or slime. Connections are made during this time and successes are celebrated. These successes often carry over to the classroom as struggling students realize they can be successful.

To be honest, a lot of the faculty and staff were a little skeptical of adding one more thing to our already saturated schedule. Some days, we barely have enough time to say hello to our next door neighbor and it seemed impossible to plan and execute more than what we were doing; however, we are now seeing the benefits of this change, from an adult led school to a school where students are proud and take ownership of leadership and success, sometimes creating less work for the teachers. This is where it begins. In a world of social media, impersonal communication of text, email, and snapchats, it begins with us. Consequently, we have chosen to focus on our students and foster the leaders of tomorrow while we have them with us today. I can't wait to see what this year holds for my students!

# FOCUS: EXAMINING THE ROOTS OF STUDENTS' GROWTH MINDSET

-JESSIE CROWE-

I am an educator, raised by an educator, and have a school-aged child. I hold a Master of Arts in Teaching from East Tennessee State University. The 2018-19 academic year will be my second year teaching, and my very first year of teaching sixth grade science at John Sevier Middle School (GO WARRIORS!) in Kingsport, Tennessee. This essay is an exposition of my recent enlightenment as a learner and educator, which resulted from a late night of unintentional, procrastination-fueled, growth mindset-related reading.

I possess what Carol Dweck's revolutionary research on mindset refers to as a "strong growth mindset." My support for closer examination of the "roots" of students' growth mindset, specifically in their "least favorite" content area stems from my own personal experience as a student and as an educator.

I readily admit that the article written by veteran educator, writer, and Mathematics Learning Specialist, Sunil Singh, initially ruffled more than a few feathers on my proverbial teacher war bonnet. By his own admission, Singh often takes the role of "disruptive agent/voice on the mathematical content found in most schools" in his writing, and that his article, "[Growth Mindset in Learning Neglects 'Fixed' Mindset in K-12 Math Curriculum Design](#)," is a "personal" topic as his "own kids (K to 6) already hate school mathematics." However satirical and controversial the article may be, and while I do not necessarily agree with or support all of the views he expressed in the article, I was explicably drawn to Singh's statement that "the goal shouldn't be getting good at

mathematics, it should be, as simple as it sounds, liking mathematics. Liking math will lead to loving mathematics and the inset quote by Antoine de Saint-Exupery: "If you want to build a ship, don't drum up people to collect wood and don't assign them tasks and work, but rather teach them to long for the immensity of the sea."

The article and quote led me to reflect upon my own personal experiences with math and mindset. Without going into excessive detail, long division was the bane of my 8-year-old existence, and I spent the remainder of my K-12 education after that devastating experience "not liking" math. Until recently, I had not truly considered that the aversion towards math I developed in the 4<sup>th</sup> grade could have been the catalyst for why, despite my ability to consistently reach or exceed "proficiency" throughout the remainder of my compulsory education, I still spent years feeling that I was "not good at math." Ironically enough, the very first teaching position I accepted happened to be teaching seventh grade math and pre-algebra. I was simultaneously overjoyed to discover that I possessed a passion for teaching math, and devastated to realize how many of my students actually admitted that they "didn't like" or did not feel "good" at math. As no stranger to the misery of that feeling, I dedicated my entire year with those students wholeheartedly encouraging the acceptance of mistakes, and belief in "the power of yet."

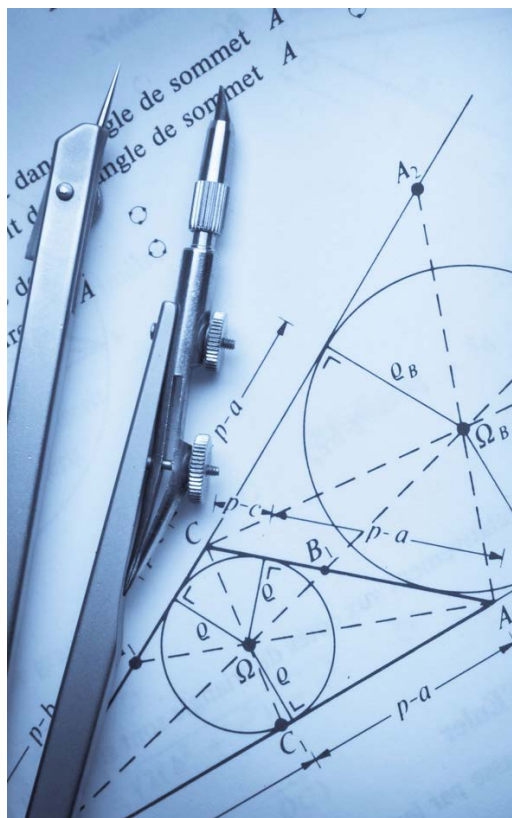
In summary, I posit that, while Singh focused his article on growth mindset in mathematics education, the same basic idea holds true across all content areas: A student's belief that they CAN achieve conceptual understanding of a topic, or reach "proficiency," is not enough to truly nurture a healthy growth mindset if they do not possess the "longing" to for "growth." Furthermore, based on my own personal experiences, I posit that developing a deeper

understanding of students' individual experiences (i.e. the “why” behind their “least favorite” and/or “hardest” subjects) is an essential component to fully encouraging development of an optimal growth mindset.

#### Ideas for Examining “Roots”

- Student Inventory or Survey
- Ask Parents
- One-on-one conferring with students
- Writing Activities
- Eat lunch with your students
- Community-building activities

(Note: If you're not familiar with Scolab, they are the edtech studio that developed Buzzmath, and also collaborate on other exciting mathematics edtech projects including Exploding Dots and Graphingstories.com.)



## CLASSROOM CULTURE

-JOSH BEARD-

The culture of a classroom is an important aspect of student learning. The goal of a teacher is not only to educate their students but to aid them in becoming respectable members of the community. Over the years, my classroom culture has been praised by my administrators. There are many components that go into making this happen. From my experience, these are components that have worked for my classroom. The first component is having good procedures and routines. These are practiced from day one and are set up to promote functionality and respectfulness.

As a teacher, you are a role model. Every day in class you are modeling how to interact with people, whether they are students or adults that enter your room. For some of your students, this might be the only proper interactions they witness all day. Positive attitude goes a long way in being a role model. Even when students are frustrated, having a positive attitude handling their frustration helps ease their frustration.

Building positive relationships with students is a daily occurrence. This is an ongoing process that lasts all year. There are many positive outcomes from this interaction. You are showing an interest in your students and in turn they are learning about you. This allows you to integrate their interest into lessons when appropriate to help engage their learning. I use nicknames with my students (they earn these by something they have done and if they do not approve I do not use) and by the end of the first semester, they are all wanting one. This helps to create a connection with my students.

In my classroom, mistakes happen. It is important for students to know how to handle making them. Early in the school

year, I make a mistake purposefully, this made so that the students see that anyone can make a mistake. They also witness how I respond to making the mistake. This is an important moment in my class. They do not see me get frustrated, they see me reevaluate the problem (perseverance). The students see that it is ok to struggle and make a mistake. They also see the importance of showing their work, since the work is shown, I do not have to recalculate the entire problem. From this instance and watching their peers, students eventually become comfortable with asking questions and searching for help, without fear of being ridiculed.

There are numerous other concepts that help create a positive classroom culture. Strategies that work for some teachers, may not work for others. The components I have listed have helped foster a positive culture in my room over the years. My classroom is a safe place for my students. They not only learn the curriculum, but also how to interact with their peers in a positive way. By the end of the year students are not afraid to make mistakes in front of their peers. They will give their best effort, their mistakes are learned from, and they leave my room a better person than when they entered it.



## I DO NOT TEACH MATH

KRISTI SANDERS

When someone asks the question, “What do you teach?” I do not tell them, “I teach math.” Instead, my response is “I teach eighth grade students.” This distinction is extremely important to help focus instruction on what truly matters. Each student enters my classroom with varying experiences, attitudes, and abilities toward math. My goal is to guide them to discover that they are the most important part of their learning. My job becomes getting to know who they are, developing the best practices to help them, and guiding them as they grow and become strong Math students and better citizens. To the argument that there is too much content to spend time building relationships, I counter that students who believe that their teacher cares about them, and wants the best for them will in turn give you their best effort as well as insight into the best methods for teaching them math.

From the first day of a new school year, one of the most important initial goals is establishing good relationships. Not only do I work to establish a good rapport with each student, but to foster an environment of community in the classroom. Initially, we will spend time on class “team building” activities. Starting in week two of the school year, I spend the first few minutes of class every day on “category of the day.” During this time, each student gives his/her response to that day’s question. These are things like favorite movie, sports team, music group, etc. By spending only a brief amount of time on these light, non-threatening categories every day, I get to know my students better, and they become comfortable speaking out in class. This establishes a safe classroom community, which greatly improves their participation in

group activities and oral presentations, and their willingness to answer or ask questions during whole group discussions.

In addition to building strong relationships with students, I work hard to establish the “Growth Mindset” in my classroom. I tell them from day one that the phrase “I Can’t” is not allowed. They must either add “yet,” followed by an action they can take to work toward the goal or express what they are struggling with and ask a question they need to help make progress toward understanding. I have posters all over the room with growth mindset quotes. I rotate these throughout the year to keep it fresh. I also use quotes from famous people, such as Michael Jordan and J.K. Rowling to inspire this positive mindset. All year, we work on encouraging each other to work toward the goal of improving.

Accompanying the Growth Mindset, I stress to my students that mistakes are not only ok, they are actually essential to their learning. We discuss how mistakes help us improve, and extend our understanding. At least three times each week, this year, I will incorporate the strategy of “My favorite no,” in which all students work a problem on an index card. I collect the cards and after quickly checking them I choose one incorrect response. This is “my favorite no,” which I will show the class, without naming the student, and we will break down the problem identifying the errors that led to the incorrect answer.

Continuing my focus on the students, I have developed an important tool that increases student success by helping them to keep their math organized. We use a version of an interactive math notebook that I have gradually modified over several years to work with my instruction. This math notebook is where they maintain notes and foldables, complete daily warmup activities, and keep completed assignments and tasks. It becomes an excellent resource for the

students to refer to throughout the year. Because it is all completed by them with some feedback from me, they develop pride and ownership over the resource. It is also important to note that information and examples that are color coded, organized, and recorded by the student’s own hand are more likely to be retained.

As I have spent many years with middle school students, I seek to find teaching strategies that appeal to this unique group. In general I have found they enjoy group activities, cooperative games, movement and music, and most of all laughing. Incorporating humor, and especially being willing to laugh at myself reduces stress in the classroom, and makes math class an enjoyable, non-threatening place to be. In fact, many students would even say it is FUN! In this atmosphere, learning is greatly improved.

The next time you are asked, “What do teach,” how will you respond?





## WHY MATH AND SPORTS ARE RELATABLE

-CODY SNYDER-

I get asked often, “Why do you relate everything in math to sports?” First of all, I do not relate everything in my classes to sports, but I do strongly set up my room to encourage the involvement in sports. There is a lot of math that goes into sports to show a person or team’s success or failures. This is how other teams strategize against one another. Also, it brings out the competitors in us.

Why are Bryce Harper and LeBron James one of the best players in their respected sport? One, because they work hard, and two, because they have successful numbers within their sports. Sports analyst have made these players famous by calculating their batting averages, their shot percentages, and their winning percentages. For example, Bryce Harper is batting 2 for 15 in his last series and 24 for 132 throughout the season so far. By comparing series batting average to season batting average, you can see what his future holds. This relates to many units in 6<sup>th</sup> grade math such as ratios, statistics, and number sense. There are many ways the students can find this, either through proportions, or simply dividing the numerator by the denominator. No matter what you do to find the batting average of Bryce Harper, you must use math.

However, sports can be more than finding the average or percent of a person or team’s success rate; it can simply help you know how to train for a certain event. For example, a marathon is 26.2 miles or 42.195 kilometers. The goal of the math problem is to figure out how long it would take you to run it if you ran a 9 minute mile. Therefore, you will have to be able to multiply how long a marathon is by how long you can run one mile. The answer is 235.8 minutes

which you would have to convert to hours. Many children I see struggle to convert measurements. I feel like this is a skill that is often passed over by giving students a conversion worksheet instead of actually teaching the material. I believe the conversion sheets can help; however, students these days tend to struggle with the concept of how to set up the problem or form a method to obtain the correct answer. Sports can be a great help because it is something the students can relate to math. I like to show students a picture of a baseball field and a football field from the sky view and many students do not know which one is actually larger. This is because they have no concept of perspective. However, since my school is nearby both facilities, I will have the students run the length of a football field and the length of the baseball field. Then, I ask them which one felt longer after running on both fields. This is a great activity to compare and contrast the difference between yards and feet.

Although math is very important in all sports, the most important reason math and sports are relatable is that it builds relationships and encourages competition. I strongly believe an effective teacher is one who builds the strongest relationships with their students. Students will perform better if they respect the teacher and enjoy the class. I tell students all the time if you enjoy what you are doing, you will learn more. This is where sports comes into my classroom. To be successful in a sport, you must be able to trust the process. Either trusting your teammates or your coach, there needs to be a strong relationship between each other. Most people will work for those they believe in, and the competitor will come out in you to do your best. This is the second benefit of relating sports to your lessons, competition. Competition is in everyone but it comes out in different forms. However, when students establish relationships with teachers, they

become competitors. Students want to make teachers proud and they want to succeed. As teachers, our goal is to see students strive to get better every day and compete as they walk into the classroom. Sports is a great gateway into showing students that failure happens, but never give up and keep moving forward. Just like in sports, athletes will not win every game they play, but they will learn and continue trying to do their best. In comparison, every time students fail in math class, they also are learning new concepts and continue to become smarter every day.



## NCTM CENTENNIAL ANNUAL MEETING & EXPOSITION

### *Celebrating 100 Years – Looking Back and Moving Forward*

NCTM turns 100 in 2020. Join thousands of math education professionals as we celebrate our 100th anniversary. In addition to compelling sessions, networking opportunities, and the content you've come to value, there will be special events and surprises to mark the occasions.

### STRANDS

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

### Call for Proposals

Proposals for NCTM's Centennial Annual Meeting & Exposition in Chicago will be accepted from April 4 through July 1, 2019.

[Call for Proposals](#)



**Upper East Tennessee Council of Teachers of Mathematics  
Membership Application for 2017-2018**

Complete and return to Sunshine Light with a check for \$10.00 made payable to UETCTM. Completed application and check may be mailed to:

Sunshine Light  
c/o Robinson Middle School  
1517 Jessee Street  
Kingsport TN 37664

Name: \_\_\_\_\_

Home Address: \_\_\_\_\_

\_\_\_\_\_

Home Phone: ( \_\_\_\_\_ ) \_\_\_\_\_ - \_\_\_\_\_

District: \_\_\_\_\_

School: \_\_\_\_\_

School Address: \_\_\_\_\_

\_\_\_\_\_

School Phone: ( \_\_\_\_\_ ) \_\_\_\_\_ - \_\_\_\_\_

Email Address: \_\_\_\_\_

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

Please check the following statements if applicable:

- I am a current member of NCTM.
- Please check if you do NOT want your information to be shared.
- I would be interested in leading a session at UETCTM
- I would be interested in holding an officer position with UETCTM