

***The Upper East
Tennessee Council
of Teachers of
Mathematics***

ATTITUDES

Vol 19, Issue 2

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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: Thursday, March 14, 2019, Daniel Boone High School, Gray



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The Understanding Math Classroom

- Tosha Bean

Math in the classroom? What is it like? It is easier than ELA, right? You just stand up front, show the steps, the students practice it a few times, and BAM you are done! A+ for you! Check off that list of standards then review a little and now you are an all-star teacher! The students will understand because you showed them steps and they may have even written them down on a cute foldable! These were just a few of my initial thoughts about starting this new adventure in my life! I had previously taught ELA in 6th grade and it was the hardest year of my life. I thought teaching math could never compare to what I had just been through!

The reality? Teaching math to fifth graders my first year was equivalent to feeding hungry lions hay! These creatures were scary, loud, and did not want what I tried to give them! To make things worse, I only knew about half of the things the textbook was wanting me to teach! There were new ways of teaching and more things I had never seen before!!! What would I do?

Things I wish I had known before beginning this wonderful journey! Yes! I said Wonderful! I would never want to go back to ELA after learning these next three things!

1. These kids are scared of math! They have had bad experiences, each concept is totally new, and the fact that there are actually 152,376,097 ways to do each problem. It absolutely scares the daylights out of them! Could I blame them? It scared me my first time also! You can help them overcome this! Show them that they control numbers. The numbers are not going to jump off the page and bite them. They get to move those numbers and tear apart those numbers until they are comfortable with them. The students control what happens with the numbers.

One example of how I did this: I started with problems that were not necessarily grade level problems. I gave them problems and made them feel comfortable with the numbers. This encouraged my students at a completely new level.

2. There is always another way to work out the problem! Every child will see the problem differently and that is okay! Yes, I said it! It is okay! All of those foldables are amazing as they show each step to find the answer but that may only be how 3 or 4 kids see it! These kids can learn these concepts but it may happen differently for each one! Once again, that is okay! The students can take apart the numbers, move them, and much more to make the numbers easier to work with. At first, this idea was my worst nightmare, but now I know this is an educational tool that makes math amazing!
3. It is 100% acceptable to admit that you were wrong or you do not know!! It actually teaches you more to admit defeat. I promise! It is the best thing you will ever do! Just let it sink in, wallow in it for a little while, you can even cry. It will make you a better person when you take it all in. You will grow from this, and here's how I did: I found that I can learn from mistakes, I don't know everything, and I opened my mind to new things!

These three ways will most likely make you the teacher amazing teacher you are going to be! In closing, know that you have been through a lot to get where you are today! You will control math! You will find the great ways to teach it! You can make a difference! Math will not get you down! In the words of Dr. George Poole "Numbers and the world of mathematics are dead! We and our kids are alive! Therefore we control numbers and how they are used! We and our kids are boss of numbers!" ❁

My Technology Experience

Technology has come a long way. The first time I remember having computers was in the 3rd grade. We didn't have them in the classroom yet and only had a computer lab that the teacher had to reserve. They were slow but awesome! As time went on, the computers ended up in the classrooms, about 4 or 5 in each. They were used to play educational games on and then typing practice. The first time I saw a smart board was in high school. Then when I student taught was the first time I saw an interactive white board. Technology has come so far in such a short amount of time. I own a 3D pen and it is interesting the way it works. With the boost of technology, 3D printers can be a wonderful educational tool in the classroom.

Most Interesting Thing

I never knew the excitement and what all could be taught using 3D printing. One interesting thing I found was how much you can use 3D printing with math and science. Using 3D printing you could use it to find volume, print equations, fractions, maps, and bugs. It is so creative and uses real world scenarios for teaching and learning. While continuing research, Edutopia stated that 3D printing is already being used to make organs, engines, food, and buildings. This is such a great tool for our little inventors.

The Process for 3D printing

3D printing is where 3D objects are created. The object is built one layer of material after another. The whole object is turned into thousands of little slices, then from the bottom-up the slices are stuck together to form a solid object. This is all done from a digital file. People can create their own design, use a template, or use a 3D scanner that takes measurements of something in the real world.

Introducing Jeremy Zelkowski!

Jeremy Zelkowski is the NCTM Membership and Affiliate Relations Committee (MARC) representative for the Southern 2 Region.

Jeremy is the past-president of the Alabama Council of Teachers of Mathematics and has served on the Executive Board for the past eight years. He served as the ACTM Annual Fall Forum Program Chair for two years, plus serving on other state mathematics panels and committees, as well as serving as a T³ National Instructor.

If you would like him to attend your Affiliate's conference or a meeting, contact him at the email address listed below.

Jeremy Zelkowski
NCTM Membership and Affiliate Relations
Committee (MARC)
Southern 2 Representative
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MARC CALENDAR

Regional Conferences 2018

Hartford, CT · Oct. 4 –6
Kansas City · Nov. 1 –3
Seattle · Nov. 28 –30

2019

Boston · Sept. 25 –27
Nashville · Oct. 2 –4
Salt Lake City · Oct. 16 –18

How can Educators Use This Technology?

Educators can use this technology in all subjects. As I mentioned previously teachers in math can build equations, fractions, and objects to measure. Teachers in science can use it to make life cycles, periodic tables, animals of all sorts,

and for engineering. This is such a wonderful technology that can be used in the classroom to really push the minds of our students and get them to use higher order thinking. I feel math & sciences could benefit most from this technology.

Specific Project

I would love to allow my students to take time to invent and execute their own thoughts and ideas. I like to teach with a hands on approach and let the students explore. If I had to choose a specific use of how I would use it in my classroom I would love to create projects for fractions. I felt this was the hardest concept for my students to understand when comparing fractions and feel the 3D printer would help them have more hands on experience than just using fraction tiles, number lines, and creating it out of paper. My students are very creative and innovative learners. My overall goal would be for them to create their own invention.

My Opinion

I would love to have a 3D printer in my classroom. I am very engaged with technology in my lesson and while I teach. This would be great for STEM projects as well. I think it is important to stay with the technological advances and allow opportunities for students to use the technology that they hear and read about. 3D printing has opened up a whole new opportunity for many inventions and uses. Many students don't have the opportunity to use their imagination and be the inventors they are. ⚙️

The Power of Choice

- Karen Price

Six years ago, I reflected on the educational milieu and the student population in my classroom. I had several students who had difficulty staying on task and staying seated. I realized I spent most of my time redirecting and correcting the aforementioned small student population's behavior instead of delivering curriculum to the entire class.

I read articles and suggestions regarding research-based ideas that would help these students redirect their energy and attention. The majority of my findings advocated the use of stability balls as an alternative to chairs. As a result, I wrote and received a health initiative grant that enabled me to purchase enough stability balls for my whole class. My colleagues all thought that I had lost my mind. I had a room full of first graders who were bouncing all over the place.

The first course of action was to introduce the stability balls to the students. After, the students and I made rules about how to sit on our stability balls. By the end of the semester, my students had developed the ability to balance on their knees while working. Some students would lightly bounce up and down while others enjoyed rolling back and forth on their stability balls. Some students even enjoyed laying over the ball on their stomachs while reading their books.

Last year, I took a bigger step in the direction of alternative seating. I moved out not only my students' desks, but mine as well. I brought in round tables and other seating options. I no longer assigned seats, but rather allowed students to find their own place in the room where they felt comfortable.

Upon walking into my classroom, it doesn't look like a traditional classroom. One might see students laying on the floor, sitting on a couch, sitting at low tables or sitting in chairs... or even bouncing on stability balls. One thing is for certain though, you will see students learning. Since implementing choice seating, student achievement has increased from a 3 to a 5 and student classroom disruption is almost nonexistent.

I feel that giving the students the power of choosing their way of learning gives them a feeling of ownership. Taking away the traditional seating chart and rigid learning environments my students have gained the responsibility of deciding better choices for their way of learning.



EARTH EXPEDITIONS

LEARNING IN THE WORLD COMMUNITY

Now accepting applications for 2019!

Miami University's Project Dragonfly is accepting applications for 2019 Earth Expeditions graduate courses that offer extraordinary experiences in 16 countries throughout the world! Earth Expeditions can build toward the Global Field Program (GFP), a master's degree that combines summer field courses worldwide with web learning communities so that students can complete the GFP master's part-time from anywhere in the United States or abroad. Project Dragonfly also offers the Advanced Inquiry Program (AIP) master's degree that combines web instruction from Miami University

Co-Teaching in the Math Classroom

-Sean Golden

In a few short weeks, I will be starting my 3rd year of co-teaching math. When I was hired, it was planned for me to co-teach 8th grade language arts. I spent the entire week before school planning with my co-teacher. The morning of the first day of school, I was notified that I would be co-teaching in Math 7 with Liesel Watkins, a teacher that I had only met once or twice.

Little did I know at the time that this was going to be a successful co-teaching team. A trainer described the co-teaching relationship as a marriage (minus the romantic stuff). In many ways it is. Both teachers share a classroom and all of the responsibilities that go along with it. In most co-teaching partnerships one teacher brings the expertise in the content area and the other brings the experience in working with students who have special needs.

Our co-teaching team is different. We both have the content area certifications. I also have the special education certification. I think this is part of the reason why we worked together so well at the start. However, we both still did learn things from one another. The purpose of a co-teaching classroom is to create a more inclusive environment for the students. We have been pretty successful with this so far.

There are some benefits to co-teaching. The relationship between the teachers and students is much stronger. Student with disabilities have access to the general education

curriculum and are in class with their peers rather than being pulled out into a resource room somewhere else in the school. Thus these students become more independent and confident in their abilities. The lessons are stronger and more creative due to the collaboration between the co-teachers. A camaraderie also develops between the co-teachers and they are able to draw upon each other's strengths and weaknesses. I think that we are able to think outside of the box when planning lessons and activities. We are more comfortable trying things we might not have done if we were teaching by ourselves.

While Mrs. Watkins and I understand that we share the responsibilities of the classroom and everything that goes along with that, the students do not always understand this. Our class met in Liesel's classroom. Liesel and I view it as our classroom. The students see her name on the schedule and the door, not mine. They automatically think that she is the teacher and I am either an instructional assistant or assistant teacher. They really struggle with understanding that we both are responsible for their class. On days where she might not be in class, this really shows, as they tend to not listen and respect me as much as when we both are present. I am hoping to present this a little differently at the start of this coming year. Hopefully it will not be an issue any more.

Planning with your co-teacher is the key to being successful in the classroom. Last year I had a mixed planning where I had mostly 8th grade planning time and about twenty minutes a day (realistically once I got to her room about 10) with Mrs. Watkins in 7th grade. This would have

been disastrous if it was my first year teaching with Liesel. However, we had a good routine going. We talked before/after school or through text messages and email. I'm not the type of person to "wing it." If we hadn't met to plan, our students would suffer because I would not be able to support them.

I have been to a couple of different conferences on co-teaching. In each of these trainings, there were six co-teaching models presented. They are recommended for use in the classroom. It is interesting that Mrs. Watkins and I were already using these models before we attended any training on co-teaching. These models are:

One Teach – One Observe:

One teacher instructs while the other observes students. Often times one of us will be walking around the classroom making sure students are taking down their notes; they aren't talking; assessing their performance; etc.

One Teach – One Drift:

One teacher is instructing the classroom, the second is providing support and assistance to the students as needed. This is very similar to One Teach – One Support.

Station Teaching:

The lesson is divided into segments as the teachers each instruct part of the lesson at independent stations or rotate between groups of students. We typically use station teaching one time a week. I will talk about this further later on.

Parallel Teaching:

The teachers divide the class into two groups and instruct each group with the same content simultaneously. The smaller groups allow closer supervision and more opportunities for interaction between the students and teacher. We will often do a variation of this strategy where one teaches a higher group some enrichment while the other works with a group who needs remediation.

Alternate Teaching:

One teacher handles a larger group, while the other teaches a small group who need specialized attention and additional supports. Liesel and I have not had much success with this strategy. One of the challenges of a co-teaching class is that there are a lot of students who are performing low academically (with or without and IEP). Often times these students would rather act out than do what they are supposed to do. The groupings may not work due to the behavior of the students.

Team Teaching:

This requires the strongest partnership. The co-teachers share responsibility and deliver instruction at the same time. They are "tag teaming" the class. This is my favorite of the strategies. Liesel and I typically take turns in teaching each day or class. When one of us is teaching the other is walking around the room helping students, monitoring their work, etc. I will often ask the questions that students are not willing to ask or ask Liesel to repeat something she said. It is helpful to have multiple dry erase boards in the room. One of us will write down the important information (definition, formula, example problems) on a side board. The students benefit from hearing that information twice.

Our first year of co-teaching was great. We taught lessons every day and quizzed or tested periodically. We used formative assessments almost daily. The curriculum for Math 7 can be quite challenging. We attended a co-teaching training at the start of the second year. The co-taught Algebra class at the high school had an interesting schedule for each week. We decided to model our class after them. We also thought that it was a good idea to provide some consistency upon entering the high school co-teaching classes. We were pretty excited about our new schedule. Each class was about 60 minutes in length. Here is the schedule we came up with:

Monday and Tuesday:

First 20-minutes: intervention time. The students would use the MobyMax program- fact

fluency or Math 7 (practicing problems for our current topic). We may also give them a short EdPuzzle to watch (preview the topic or review a topic). Towards the end of the year we found a program called Formative Loop. This an intervention program that assesses skills based on grade level. The students take a 5-minute assessment on paper. It's graded very quickly and the assignment for the next day is prepared. New material is taught. We use a lot of graphic organizers and guided notes. The students work independently and/or with a group. Mondays we hand out the weekly homework packet.

Wednesday:

Station Day (Our favorite part of the week)

Station 1: Independent work/technology station; students using MobyMax, EdPuzzle, Kahoot, Edulastic, etc....

Station 2 and 3: Activity involving the new material taught this week. One station may be set up to work on or reteach a previous skill/lesson.

We adjust the groups almost weekly. This is based on their understanding of the content and how they are doing in the class. The higher students are given more challenging tasks to complete. They may also require less assistance. The lower groups are given the same task; it is just modified to help them be more successful. Liesel and I work with a station. This gives us the opportunity to assess the students' abilities and/or provide support some of the students may need.

We like to use stations because we can provide our students with remediation and/or enrichment. The students are able to work in collaborative groups. The tasks involve problem solving. They are also a little more challenging, so there is some productive struggling going on. It's an easy way to formatively assess the students.

Thursday:

Quiz/Test Day

New material

Review concepts/topics (areas that need to be retested)

Friday:

Enrichment opportunities

Students complete quiz or test autopsy for any mistakes made on the assessment

Re-teach skills/content

Catch up day

Homework packet is due

We send home homework packets every Monday. It consists of about 10-12 spiral/review problems. The rest of the problems, about 10, consist of the new content covered for the week. The homework is due on Friday. However, the students may turn it in early if they like. One of us will grade it and return it to the student. They can then make any necessary corrections and turn it in for a higher grade. They can do this until it is due on Friday. For every class we set a goal score for their homework. If they meet that goal score three weeks in a row, they receive a reward during class. The prizes included, a Sprite, donut, cupcake, cookie, or some other treat we purchased or made. At the end of the 9-weeks, the students who met the goal score and turned in their homework consistently had a pizza party during class. The students who did not get any pizza were upset and tended to work a little harder so they received the reward the next time. Surprisingly, we had about 50% of the students turning in their homework in both of the co-taught classes together.

Rewarding is a huge part of our co-taught classes. We give out Jolly Rancher candy or breath mints to those students as they get a problem correct or even attempt to answer a question or problem. There are times we may just allow a student to have a piece of candy for being in class, which usually brightens their day. Students are also give the opportunity to sign the reward board. We have laminated a large poster with a grid- across numbers 1-6 and columns A-F. The student may write his/her name on the board if they make a certain score on an assignment/quiz/test, peer tutor other students, meet a goal on common assessments and exceeding a previous score, go above and beyond

in helping someone, etc. Once this board is filled up, Mrs. Watkins or I randomly select three spots on the board. The student whose name is in that spot wins a prize.

Organization is a challenge for most middle school students, not just students with special needs. Each student is given a notebook to keep in class. It is divided into sections: notes, graphic organizers, homework, and quizzes. We work with each student making sure that their papers make it into their notebooks each day.

A good portion of the students that we have in class come from a low socioeconomic class. Some live with one parent (occasionally both parents), grandparent, another family member, or a foster family. Their life at home is terrible. Many do not have the support system in place to help them when at home or wherever they are (away from school). This home environment can lead to academic and behavioral issues in the classroom. School is the only consistent part of their lives and being in class is the important thing.

In closing, I would like to share some advice on co-teaching in a math class. Do not be afraid to try something new. Failure is okay. We tell our students that it is okay to make a mistake, why can't we. In a co-teaching class, we wear different hats, teacher, counselor, parent, etc. It is okay to step into one of those other roles. Sometimes the students just need to see and feel a little compassion from us.

✿ *We All Need Grace*
- Whitney Whitaker

As my team and I were looking at our list of kids on the path to failing the 7th grade, I noticed that if they were in danger of failing the 7th grade, the subject with the highest percentage of failure was in math. Something that I knew down deep, but it was still disheartening to me, their Math Teacher. I looked back to my math

Upcoming Online Event!

<https://www.nctm.org/News>

Deepening Children's Mathematical Understanding with Children's Literature

- **Webinar Series: Author Talks**
- **November 14th, 2018 7p.m. EST**

"Personalized learning is one of many instructional approaches to support mathematics teaching and learning. However, a consensus on the definition of personalized learning is lacking, which leaves a range of ideas on what it might entail. Flexible instruction includes not only pacing of instruction but also time and space for students to engage with mathematics."

<https://www.nctm.org/News>

education and tried to analyze how I learned math. I thought I was a fairly good math student. Even though it's been nearly 20 years since I've been in school, things haven't changed that much. I modeled some practices, took some of my own and then applied them in my classes. When my kids remember me, I want them to remember that math wasn't the most important thing; it was one of many things they learned in my class.

At the beginning of the year, when I am first getting to know my students, I explain my procedures to them. I know consistency is key. I tell them I give homework every night. Most whine and complain, but some don't take me seriously. In addition, I give notes detailing every single step, so many that their hand will cramp. I want my students to have had as many examples to see and apply patterns to their homework. Many sit down and do their homework under no supervision. I understand that many students will

not get the concept the first, second, or twentieth time. So a few years ago, I started handing out redo assignments to everyone. There were stipulations to these redos. They had to be on a separate sheet of paper. They only were allowed to redo them if the grade was below a 70 and were to only correct the problems that they missed. They had to have it turned in within a week of receiving the assignment. Anxiety levels dropped when they learned they could redo if they performed poorly. This increased homework and participation during notes.

We are all different in how we learn, behave, and the opinions we have. We can learn from or teach each other. We celebrate differences in my class. Many years ago when I attended school, differences were frowned upon. So that I have a different approach, I try to start a healthy argument on something we will differ about, with my students. Nothing relating to Math at all. We usually talk about cars. I start in the beginning days of school explaining that the best car on the market is a Chevrolet and the worst one on the market is a Ford. This usually get the class riled up. Having such differing opinions on such a nonrelated item, allows us to differ on questions, test items, answers and anything else in the classroom, without anyone being offended sometimes giving confidence to a shy child.

Every day is a new day. Everybody makes mistakes, including me, sometimes on purpose. I have probably made more mistakes than all my students combined. I have a terrible time spelling. It's not something that I hide from my students. They know from the beginning of the year to watch out for misspelled words. When students come to the board to work out a problem, and a spelling or math error happens I encourage everyone to show grace. Everyone needs grace; the student who doesn't do their homework, the student who seeks attention in the most negative way, and the teacher who stands in front of them doing the problem completely wrong. Something that I am so grateful for but know I'm not deserving of.

I know that I'm not doing anything special that makes me stand out as a teacher. I'm not out to reinvent the wheel. I just want my students to look back and see how they grew in grace and they learned a little bit of math. ✿

Perennial Math Tournament!

Hurry and preregister!
Before October 27th!



- When: Saturday November 3rd, 2018
8am – 12:30pm
- Where: North Middle School, Lenoir City TN
- Cost: \$10 per student
- Both Individual and Team Awards!

Tournament:

Each team is composed of any five students from the same school who are in grades [3-4], [5-6] and [7-8]. A team may have students from different grades-the team will be tested by the highest grade level of the team members.

Individual tests will be based on the student's individual grade level. Individual tests have 15 questions in 30 minutes and team tests have 10 questions in 20 minutes.

What to Bring:

Bring **sharpened pencils** and **money for concessions**. Calculators are **not** permitted for this event.

Awards:

Certificates of participation for all students. Medals for high scorers for both individual winners and teams for each grade level. All winners qualify for National Championships in May.

For further information, e-mail info@perennialmath.com or call Dr. Sylvia Dean at 256-797-7063

Music in Mathematics

- Alexandra Miller

I developed my love for both music and mathematics at an early age. I started singing in choirs in elementary school and learned to play the violin starting at age 10. Ever since the second grade I wanted to become a teacher. Fast forward a little over twenty years and here I am a musician and teacher. However, I do not teach music, I teach mathematics. I love both and I feel like you can use both though many may think that you can only use one or the other at a time.

Most people attribute the left side and the right side of the brain to certain activities or tasks. It is said that the left side of your brain is used for analytic thought, logic, language, science and math. The right side of your brain is known to be used for holistic thought, intuition, creativity, art and music. However, when you use or create music you are engaging both the right and the left sides of the brain.

In music you use mathematics to count, keep rhythm, play scales, create patterns, harmonies, tones, pitches, and read time signatures. During the whole creative process, you are engaging in the use of mathematics. Even by just listening to music it engages your ears as you hear the patterns in melodies in the music you hear. The students I have had the pleasure of teaching love to use music as a tool through learning. The top two topics I have found as a fifth-grade teacher that engages students the most is music and sports. I try my best to incorporate both of these topics as much as possible.

So how can you use music in the classroom? There are some resources out there that have already recorded catchy tunes that will interest and engage your students. There is a rounding rap that my students love that I teach when learning to round decimals. I have several

funny stories of how students were supposed to be in trouble and started chanting out some of their favorite math songs or raps (Teacher win!!!). There are cool drum patterns you can use as well. One of my favorites though is one in which students can take ownership in. When we are covering a topic, I will challenge a couple students and sometimes the class to come up with a tune that incorporates what we are learning and the rules we are using to make it easier for them. It keeps them engaged and they will remember those songs for years to come!

So, do I think that music has a place in mathematics...ABSOLUTELY! If you would be interested in some of the resources I use feel free to email me and I would love to share them with you! Alexandra.miller@sullivank12.net ⚙️

Technology and Math Classes

- Amy Arnold

We have come a long way since the days when adding calculators in the classroom was a giant leap in technology. Today's classroom looks very different than in years past. You will find computers, iPads, OSMO, robots, STEM activities, and many others that were not even thought of a few short years ago. All of this new technology does take an adjustment period for the teacher and extensive directions in the beginning for the students, but once the foundation has been laid the teacher can take a step back and watch them fly.

All you have to do is look around and you will see people looking at a phone or iPad, even the smallest of children. While the use of all the wonderful technology may be contributing to the short attention span teachers are seeing in students, it seems to be a necessary evil that we will need to embrace. If we can take this love of interaction and apply the new technology in our math classes, then we can create a meaningful and

lifelong relationship with mathematics for with these small children. There are so many more positives than negatives that come along with technology. These virtual manipulatives give instant feedback that concrete manipulatives just cannot always provide. How many teachers have spent their evenings grading papers or students agonizing for days over the test grade that you're just not sure how you did? Technology makes it possible for both student and teacher to have instant feedback. How great is that? Well, maybe not so much for the student. Yes, it takes time to learn the ins and outs of the new stuff, but over time it will save you much, much more time than it takes to learn.

Math is perfect for using technology. Animations and software that show the different ways to perform math tasks in far less time than traditional methods and reach students much more effectively. How much more fun is it to learn to decompose numbers, addition, and subtraction while popping bubbles and building an aquarium on the Osmo Numbers game than doing the same old boring worksheet that has been used for the last 10 years. Using technology also allows students to progress at their own pace while stimulating them to want to advance the way a worksheet never could. The subject of binary code is another that could be insanely boring, but when there is an option of programming a robot that will teach the same thing. It seems to be an easy choice.

Love it or hate it, technology is here to stay. It seems that it is all new, when in fact, we have been advancing since the beginning of time. I'm sure there were those who saw electric lights as some "new-fangled thang" and wanted to keep things the way they always had been. I think we all would agree that would have been a huge disservice to everyone. Could we live without it? Sure we could. But who wants to? Certainly not me! This same thought also applies to technology. Although every classroom won't have access to the latest and greatest new technology, we can make an effort to make every classroom take full advantage of the technology that is available to

them so that our children can embrace this technology-filled world that is in front of them. ⚙



KENTUCKY ASSOCIATION
OF MATHEMATICS
TEACHER EDUCATORS

Please join us for a special KAMTE Strand at the KCTM Conference on November 3, 2018, in Lexington, KY!

The KAMTE Strand will have sessions specifically chosen to address the needs and interests of mathematics teacher educators. We hope to see you there! Early registration for the KCTM Conference ends October 19, 2018. You do not have to do anything extra to register for the KAMTE strand – just register for the conference and the KAMTE Strand sessions will be denoted as such in the conference program.

Call for Presenters

To present a poster, please send Bethany Noblitt, KAMTE President an email at noblittb@nku.edu with the following information by October 10th:

- Presenters name(s)
- Poster Title
- Poster Description (100 words)

Early registration ends October 19th!

Visit www.kctm.org!

30 Years of Change in Math Classrooms

- Rhonda McCracken

Close your eyes for a minute and think back to when you were in kindergarten. It's according to your age what you might remember, but 30+ years ago math in kindergarten was very simple concepts. Concepts included counting and writing numbers to 10 (possibly higher), nursery rhymes (which included numbers), learning the days of the week, basic shapes, age and birthday. Most of the learning was whole group, playtime, memorization, teacher led (I do) and worksheet oriented with very little real world applications. There was no homework and no testing. There were possibly some songs, fingerplays, and/or puppets incorporated into the teaching/learning. Technology in the classroom consisted of tape players, VHS tapes, record players and film strips. The items (supplies) that were used were pencils, erasers, chalkboards, lined paper, crayons, and flashcards. Now let's jump ahead 30+ years.

Math in kindergarten today is all about differentiation. The learning includes individual, small group, large group and partners. It is also embedded throughout the day and into other subject areas. Standards are the main focus with a teaching style as teacher/student based (I do, we do, you do) which include mathematical practices. The standards include adding and subtracting to 10, writing and identifying numbers to 20, identifying coins and the values, comparing numbers and using the terms greater than, less than or equal to, counting by 1's, 5's and 10's to 100, and recognizing and drawing 2D and 3D shapes.

Math today focuses on the why and how using different strategies to solve problems while using real world applications. Math in kindergarten today includes exploration, workstations, practice, practice, practice and even math homework. The problem with the math homework is the parents have a hard time helping because they are used to one way of working the

problems instead of multi-step solutions. Computer based tests, CFAs and end of the chapter tests are being used. Portfolios are also being used to assess students. The goal even in kindergarten is to get the students ready for college. The items (supplies) that are used now are dice, spinners, a wide variety of manipulatives, highlighters and math tool boxes. Technology in the classroom includes Ipads, Smartboard, computers, headphones, CDs, and a variety of music.

Putting yourself in the shoes of a kindergartner 30+years ago to now makes you realize how times and expectations have changed dramatically and drastically in the area of math in kindergarten. ❁

