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# Upper East Tennessee Council of Teachers of Mathematics

NEWSLETTER

VOLUME 18 ISSUE 1

SEPTEMBER 2017

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Aug. 29 Meeting:  
Mt. Carmel Elem. School  
Churchill, TN

4 p.m. - 6 p.m.

4:00-4:20 Refreshments

4:30-4:40 Business  
meeting

4:45-6:00 Breakout  
Session of Choice:

- K-5: Closing the Gap for Students with Disabilities
- 6-8: Growth Mindset in the Mathematics Classroom
- 9-12: Investigating the LEMMA Curriculum from New Zealand (Graphical Antiderivatives)

Upcoming  
UETCTM  
Meeting:

Oct. 24, 2017

Ross N. Robinson Middle  
School  
Kingsport, TN

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# Link to Lift: Meetings, webinars & grants!



**Connect to upgraded funding and a higher level of knowledge!**

## FALL REGIONAL CONFERENCES

Network and collaborate with peers, explore dynamic exhibits, and collect impactful no-cost instructional materials.

**Orlando: Oct. 18 - 20, 2017**

[\(Click here for details.\)](#)

**Chicago: Nov. 29 - Dec. 1, 2017**

[\(Click here for details.\)](#)



## FALL WEBINARS

### ***An Introduction to Mathematics Grants and Scholarships from the Mathematics Education Trust (MET)***

Don't just dream about better funding. Find out the facts—the what's and how's of the process—and enrich your knowledge first!

**Sept. 6, 2017**

**7 pm – 8 pm**

[\(Click here for details.\)](#)

### ***Author Talks: Reimagining the Mathematics Classroom***

Rearranging the classroom this fall? Why not reimagine it? The possibilities are endlessly rewarding for your instruction, and for your students.

**Sept. 13, 2017**

**7 pm – 8 pm**

[\(Click here for details.\)](#)



## NEW GRANT OPPORTUNITIES: NOVEMBER DEADLINE.

MET grants are a great way to improve your classroom practices and increase your knowledge, and now new grants are available in these three areas:

- Designing Innovative Lessons and Activities for Teaching (K-8)
- Teacher-Leader Professional Learning Grant
- Fostering Support of Learning in Multi-Lingual Classrooms (Pre-K-12)

[\(Click here for details.\)](#)

Membership = More:  
NCTM resources + impact.



### More Resourceful Teaching

From free webcasts of NCTM's Shadow Con to new ARCs (Activities with Rigor and Coherence), from Principles to Action toolkits to blog posts packed with insights and info—your NCTM membership is your connection to a host of strategic resources.

[\(Click here for more information.\)](#)



**Make an Impact.  
Make Your Voice Heard.**

With more than 60,000 members and 230 affiliates across the U.S., the National Council of Teachers of Mathematics (NCTM) is the world's largest mathematics educational organization, and one of the most influential in supporting and advocating the highest quality mathematics instruction for every student. Four new members will be elected to the NCTM Board of Directors this fall. If your membership is current as of Aug. 31, 2017, you are eligible to cast a ballot; voting opens Sept. 29, 2017. Make your voice heard, and make an impact!

[\(Click here for more information.\)](#)

### Oak Ridge Teacher named national STEM Ambassador

Congratulations to Elaine Vaughan, named one of ten 2017 STEM Teacher Ambassador by NCTM and NSTA (National Science Teachers Association). Vaughan and other ambassadors met in Washington, D.C. for intensive training in communications, media and policy.

# New Year, New Opportunity

## ***NCTM President Matt Larson shares tips for setting and achieving 2017-2018 goals.***



NCTM President Matt Larson urges a fresh start this fall, particularly for those teachers who are ready to be intentional in implementing new learning, effecting improvements in the classroom environment and building new and more productive relationships with students and colleagues.

Of course, being intentional means setting goals, and in his back-to-school message Larson offers three solid suggestions for inclusion in your to-do list.

**1) Make a commitment to collaborate with your colleagues:** Knock down your school's "silos" correctly. Make PLCs count by focusing less on trivial administrative tasks and more on collaboratively planning instruction and leveraging common formative assessments.

Larson's challenge: "To collaborate once each unit to comprehensively and deeply design one lesson."

**2) Make a commitment to address issues of access, equity and empowerment:** From eliminating "tracking" to providing more targeted learning opportunities, Larson suggests that "effective mathematics education not only moderates inequalities but also seeks to remove the structural obstacles that stand in the way of achieving equitable outcomes."

**3) Learn and try something new, but maintain focus:** For the best balance of innovation and continuity, aim for a 10% change in practice.

For Larson's full address, [click here](#).

# Opening Math Minds through Literature: Mentor Texts

By  
Jessica Hurd



## **SET THE STAGE TO ENGAGE!**

As a 1<sup>st</sup> grade teacher, I love all things reading! My personal and professional worlds both revolve around books. The majority of my day is teaching literacy. It is my passion to watch students blossom into independent readers and thinkers. My love for literacy has now spilled over into my math instruction.

**One of the first texts that I remember reading to my 1<sup>st</sup> graders during math block was**

***The Grouchy Ladybug***

**by Eric Carle.** My students sat on the carpet with their individual clocks

anticipating the time the book would tell them to make on their clocks. They were



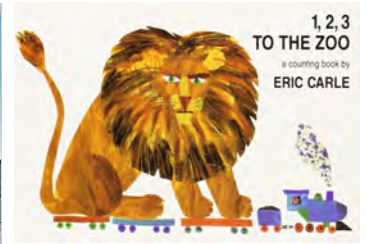
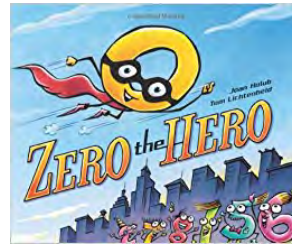
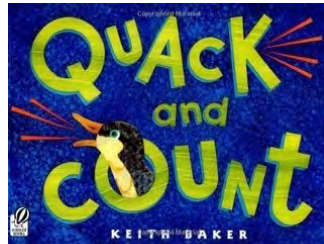
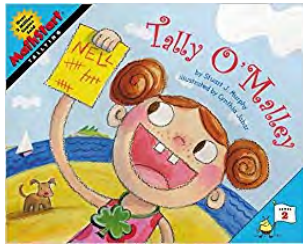
so intrigued. When I saw how books can also be used to help teach math, I was hooked! After 8 years of teaching, I now have lots of favorite children's literature that I can use to incorporate into my math lessons. Through the years, I have seen how using math read-alouds can be a beneficial portion to any math lesson.

**1. Mentor texts set the stage to engage.** Mentor texts can provide a foundation for mathematical thinking. Reading a story at the beginning of a lesson can assist in paving the way for student thinking throughout the rest of the lesson. My math read-aloud is usually at the very beginning of a lesson or unit to

*Continued on page 6*

# Opening Math Minds through Literature: Mentor Texts

(continued)



introduce a new concept. I also have read a book at the end of a lesson to wrap up and summarize the key concepts. I always try to pick books that my students will enjoy. Especially for students who feel intimidated by math, a read-aloud can help them feel more comfortable with their mathematical thinking.

**2. Mentor texts help students make connections with real-world math.** While reading, I allow students to guess, while using clues from the illustrations, what math ideas the book is trying to get us to think about. The pictures usually include lots of models and visual representations that assist in making their learning more concrete. We usually follow up with a word problem or math task related to the read-aloud to reinforce the skill that the text covers.

*Continued on page 7*

***“For students intimidated by math, a read-aloud can help them feel more comfortable with their mathematical thinking.”***



# Opening Math Minds through Literature: Mentor Texts

(continued)

**3. Math Mentor Text Favorites for K-2:** Below, I have listed a selection of read-alouds to incorporate into your math instruction. Happy reading...in math. ■

***Ten, Nine, Eight***

by Molly Bang

***One Hundred Hungry Ants***

by Elinor Pinczes

***1, 2, 3 to the Zoo***

by Eric Carle

***The Action of Subtraction***

by Brian Clearly

***Each Orange Had 8 Slices***

by Paul Gigante Jr.

***The Mission of Addition***

by Brian Clearly

***Math Start Series***

by Stuart J. Murphy

***The Great Graph Contest***

by Loreen Leedy

***If You Were a Quadrilateral***

by Molly Blaisdell

***If You Were a Minus Sign***

by Trisha Shaskan

***If You Were a Subtraction Sign***

by Trisha Shaskan

***Who Sank the Boat***

by Pat Allen

***Zero the Hero***

by Joan Holub

***Equal Shmequal***

by Virginia Kröll

***A Place for Zero***

by Angeline Sparagna

***Even Steven and Odd Todd***

by Kathryn Christaldi

***What's the Place Value***

by Shirley Duke

***Bugs by the Numbers***

by Sharon Werner

***Tally O'Malley***

by Stuart Murphy

***Quack and Count***

by Keith Baker

***12 Ways to Get to 11***

by Eve Merriam

***Ten Black Dots***

by Donald Crews

***Ten Flashing Fireflies***

by Philemon Sturges



# Class Dojos: Dos and Don'ts

By  
Casey Bedford

What is Class Dojo? Class Dojo is a technology based classroom management tool that gives students points based on their behavior in the classroom. **This program is FREE and can be used on almost any device.** Students are assigned a fun monster-like avatar that can be chosen at random for the student, or the student can choose the avatar of their choice. The best part is parent involvement! After signing up and entering your class, each student is given a code you can send home so parents can log in, enter the code, and keep track of their student's behavior in the classroom. So now you know what Class Dojo is all about, here are some dos and don'ts on how to use it in your classroom!

## **Do #1 – DO give your students prior instructions on how to use Class Dojo.**

Students may tend to be greedy or dishonest and give themselves points when they are to take away a point for negative behavior.

## **Do #2 – DO place your device in a stationary spot in your classroom so students know exactly where to go to give themselves or take away points.**

This will limit the amount of time and disruption during class time. You can also

open the app on more than one device at the same time. This is useful while traveling in the hallways or on the playground.



Now to the Don'ts...

## **Don't #1 – DON'T call out students in front of the class to take points away.**

If a student is presenting negative behavior while in a whole group setting, simply stop instruction and if possible, present a Think-Pair-Share question to the class.

While the class is discussing the question, ask the student presenting the negative behavior to meet you at the Class Dojo station in your classroom (which you have already set up). Students respond better to discussing their negative behavior in a one-on-one setting than being called out in front of their friends.

## **Don't #2 – DON'T let students compare how many points they have to their friends who may not have that many points.**

This is a good opportunity to teach students about being humble and kind. ■





# Interactive Math Journals Enhanced by the Seesaw App

By  
Whitney Moore

## Seesaw Is...

The Seesaw app is an interactive portfolio that allows students to take pride in explaining and recording their work. The students are able to take ownership of what they need and want to show their teachers. According to the Seesaw website this app is the perfect way to document learning as it is happening, teach 21<sup>st</sup> century skills, create a community around learning, and involve families in real time.

## The Way Seesaw Works

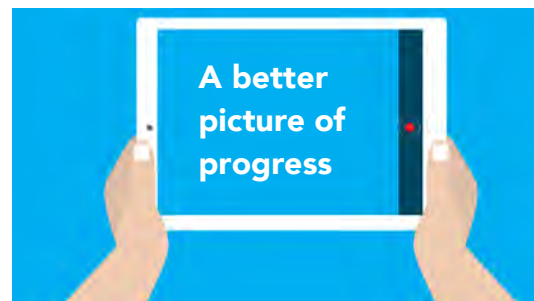
The teacher creates a class each school year. Next, the teacher will add his or her students and each gets their own journal stored within the app. Students can have a traditional login or with a teacher-created QR code. Teachers and students will be able to add classwork learning like drawings, photos, or videos. Both will be able to add voice or text explanations to any classwork. The Seesaw app gives teachers the opportunity to approve and review any classwork submitted by their students. After approval, the parents will receive notification that their child(ren)

have uploaded new work into their portfolio. The app takes care of organizing the digital portfolio to highlight their school year.

## Enhancing Interactive Math Journals

The traditional composition interactive journal can take on a new life with the addition of using the Seesaw app. Students conventionally answer and explain math tasks in their math journal. Teachers often have students talk about the task with a partner while walking around trying to listen to as many students as possible. The power the Seesaw app gives students is astonishing. Students are able to dictate and edit their work to share with their teacher and parents. The teacher can also allow to students to collaborate on assignments that have been posted with each other.

*Continued on Page 10*



# Interactive Math Journals Enhanced by the Seesaw App

(Continued)

## What's the Point?

In conclusion, the Seesaw app can only enhance the traditional interactive math journal by allowing every student the ability to explain their understanding of math tasks. It's another tool for students to express and collaborate with each other about math tasks. Seesaw is where teachers can enhance students' learning in the simplest way. ■

## Resources

"Digital portfolios for any classroom." Seesaw. Seesaw, n.d. Web.



## Stay Up to the Minute:

- Help students take pride in explaining and recording their work.
- Document learning as it is happening.
- Teach 21<sup>st</sup> century skills.
- Create a community around learning.
- Involve families in real time.



# You're Not the Boss of Me

By  
Gina G. Ford

Do your students feel confident manipulating numbers? Many students have no idea that they are the boss of numbers. Giving students a growth mindset that will enable them to believe they can compute to solve problems is essential to creating learning in your math classroom. Number talks, hands-on experiences, and celebrating mistakes are great ways to achieve this confidence.

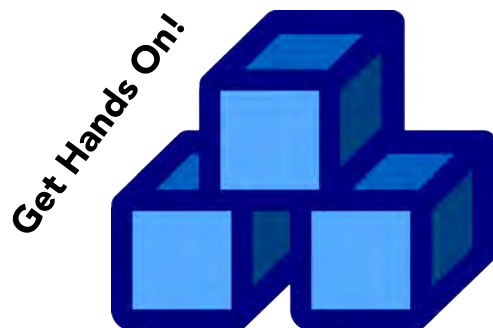


**Number talks** occur simply around problems that can be solved mentally by your students and discussed (*Number Talks* by Sherry Parrish). The talks help alleviate common misconceptions about numbers in a friendly way. Usually students are asked to solve a problem such as  $89 + 27$  for example. Students then give a thumbs-up showing that they have a strategy and a solution. This way

everyone has an opportunity to solve before taking answers. Next, students tell their answers and defend their solutions. When students have a wrong answer, they usually realize their mistake while explaining. Students are made to feel very comfortable about explaining strategies and getting wrong answers. It is often a favorite part of the math lesson because the students gain confidence to be the boss of the numbers.

**Using materials to create hands-on experiences** is another way to allow children to manipulate and be the boss of the numbers. As an example, a student may be given twenty-four colored cubes to work with and then asked to arrange the cubes any way they desire. Many will arrange the cubes in even groups such as four rows of six. They might then notate

*Continued on page 12.*



# You're Not the Boss of Me

(Continued)

their thinking with an expression such as  $4 \times 6 = 24$ . Still others might make a more artistic arrangement and add the numbers such as 4 orange plus 6 green plus 9 blue plus 5 yellow. Students will see the number twenty-four in a variety of ways. This enactment of Jean Piaget's conservation of numbers theory will boost your students' confidence as they boss those numbers.

**Everyone makes mistakes, and your students will learn from theirs.** It is essential to celebrate those mistakes. One way is to have students complete a problem on an index card without putting their name on it. Later, the teacher would go over her favorite mistake. Students have no idea who made the error, and it is celebrated because everyone has the opportunity to see how errors occur. This lesson also will show students that even in times of misunderstanding, they are the boss.

*You're not the boss of me, you're not the boss of me, you might be the boss of you, but you're not the boss of me.* These song lyrics sung by Bill Haley in his story about a skunk family are illustrative of the attitude we must give our students as they learn to compute and boss the numbers. Let your students take charge during daily activities. They will become the next generation of problem solvers. ■

***“Let your students take charge during daily activities. They will become the next generation of problem solvers.”***



# The Best Idea I Ever Borrowed

By  
Nicole Ragan

Years ago, I was at a family dinner on a Sunday night. It was getting late and people were starting to head home to get ready for work or school the next day. However, my husband's aunt, Janice Russell, who taught math at Vance Middle School, was just about to begin writing 120 notes to her students before their upcoming TCAP test.

I couldn't believe it; she was going to hand write individual notes to every one of her students. She told me she had been doing it forever; in fact, she couldn't remember not writing notes. She told me stories about students that had seen her many years later that still had their notes and even one that kept his note in his wallet. Janice has even had parents write her thank-you notes because of how much it meant to them that she took the time to say something special, uplifting, and encouraging to their child before this big test.

None of that is why Janice wrote these notes. She did it because she genuinely cared about all of her students. She wanted to put them at ease before the



## Hand writing notes?

***"I couldn't believe it. She was going to hand write individual notes to every one of her students."***

test and build up their confidence. Her daughter, Tracy Easterling, became a teacher as well, and she wrote notes too. In fact, over the years, many other teachers began writing notes. I can't help but wonder if they also borrowed this idea.

When I first started teaching math, I was in Virginia. Our standardized test, as many of you know, is the Virginia SOL. It is a daunting test, and like most students, mine were nervous, uncertain, and some were completely stressed out. I did not want to sit down and write 83 notes; in fact I went back and forth about whether it was worth it. Then, finally I sat down. Some were easy to write and some took some creativity.

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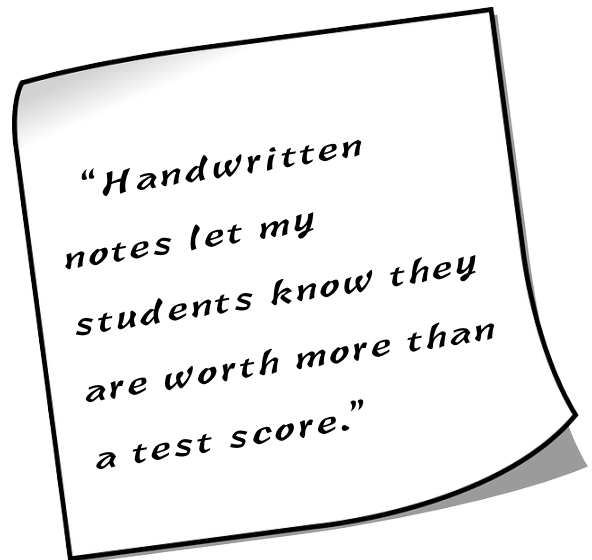
# The Best Idea I Ever Borrowed

(continued)

The day of our test I handed these out with a pack of Smarties. Some students read theirs to themselves, others showed theirs to friends, and several asked me to read it to them because they couldn't read cursive. It was cool! I watched students smile, relax a little, and I even received a few thanks and hugs.

I didn't write the notes for myself and neither did Janice or Tracy. Those students had worked hard all year, completed homework, tasks in class, and done so many practice problems. I just wanted to thank each one of them and make sure they knew that their hard work had not gone unnoticed. All the times they had struggled, persevered, and had those wonderful "ah ha" moments had helped them grow as math students.

I don't know if any of my notes resulted in any greater success on the Virginia SOL or on this year's TN Ready, but that doesn't matter. I do know that I will keep writing notes.



In fact, it feels kind of like a superstition now; I'd be afraid not to write them. Most importantly my students know that they are worth more than a test score.

As teachers, think of how much we are with our students during the school year. I think a positive note from us could mean a great deal, especially for those students that don't hear a lot of positive. So, for me, out of all the ideas I have borrowed over the years this is my favorite. ■



# She's a "Two Face"

By  
Isaiah Spivey



In the popular NBC sitcom, "Seinfeld," the 166th episode was entitled "The Strike." This episode was made popular by Jerry's "two-faced" girlfriend. A "two face" is someone that looks very attractive some of the time and very unappealing at other times, depending on certain exterior factors, such as time of day or lighting. My approach to solving mathematical problems can be compared to this situation. Whether I'm solving an elementary level problem or working with complicated algebraic equations, I have Jerry's "two-faced" girlfriend in the back of my mind.

This may seem like a ridiculous proposal, but let's dive into the method behind my madness.

When you see Jerry's girlfriend in Monk's cafe, she looks stunning. However, she later joins Jerry in a cab looking very similar to a large female chipmunk. How can this be? Does she have a twin that has suffered some kind of disfigurement? Is this some elaborate hoax she has come up with? All of these questions are logical, but unfortunately, the answer to all of them is no. No matter if you are looking at the woman that should be on the cover of "Vogue," or Alvin's girlfriend (the chipmunk) you are looking at the same woman. They may look different, but they are one and the same, just like the many faces of the numbers we use.

In mathematics, we use numbers to communicate reason. These numbers can be represented in many different ways using basic or complex mathematical reasoning, and understanding the

*Continued on page 16.*

# She's a "Two Face"

(Continued)

language is essential. In order to grasp this concept, we must have a concrete and in-depth knowledge of the four operations we use and the properties that show the relationship each operation has with each other. It is up to us, as mathematicians, to figure out the best way to represent the quantities we are working with to accomplish the goal we have set forth. The good news is there are many different paths to take on the journey of solving a problem, and perspective is everything.

This holds true throughout the study of mathematics. When we start school as a nervous kindergarten student exploring the world of addition and subtraction, we are building a foundation of basic math principles that will be valuable throughout our journey as a mathematician. It takes years of practice and thousands upon thousands of problems to understand when and where to use these skills upon which we have built our foundation. We just add a few more skills, a few more rules, a few more equivalent representations to broaden our perspective as we dive deeper into the study of Mathematics. ■



**“The good news is there are many different paths to take on the journey of solving a problem, and perspective is everything.”**






# Teaching Adding and Subtracting Polynomials through Station Rotation

By  
Theresa Fuller

By the time Algebra 1 students come to me, they have learned how to combine like terms and use the distributive property. This is also revisited at the beginning of the year when we review multi-step equations. Knowing that both topics play an important role in adding and subtracting polynomials, and knowing most of my students are fairly confident in their abilities to successfully work within those topics, I decided to take a different approach into teaching polynomials. I, along with other teachers, get stuck in a rut of doing direct teaching whenever introducing a new topic. I was determined to try and make a change!

Station rotation is something I do regularly in my class, but I have never used it to teach new content. I put my class into 3 groups: low, medium and high. I created three stations: station 1 – combining like terms, station 2 – distributive property (which included some combining like terms at the end), and station 3 – adding and subtracting polynomials. Stations 1 and 2 were group work areas where the students helped each other to complete the tasks. In station 1, students worked on IXL (internet program for math practice) and were told instantly whether they were right or wrong and if they did it wrong, the program explained how to do it right.

*Continued on page 18*



**STATION 1:**  
Combining like terms

**STATION 2:**  
Distributive property

**STATION 3:**  
Adding and subtracting  
polynomials

# Teaching Adding and Subtracting Polynomials through Station Rotation

(continued)

Station 2 was a worksheet that students worked together to complete. They checked their work with others in their group (which also led to some great dialogue between groups of students). I chose those two topics for the first two stations because I knew the students had the knowledge to be successful in them without needing my help every step of the way. These two topics were also what the students needed to practice to be ready to learn the new content I was going to show them in station 3. When teaching adding and subtracting polynomials in station 3, I knew that I needed to introduce it as something we already knew how to do. I showed them in every problem that all we were doing was taking what we knew about the distributive property and what we knew about combining like terms and putting the two ideas together (which also helped ease the anxiety over learning something new).



**Stations 1 and 2 were group work areas where students helped each other to complete tasks.**

The real success to this lesson came from how I placed my students. Doing the ability grouping helped, but where I placed those groups for their first station was key. The low group started at station 1 so they could get a lot of practice with like terms and distributive property prior to asking me to move on to new content. The medium group started at station 2 because although it was predominantly distributive property, I did manage to squeeze in some like terms towards the end of it.

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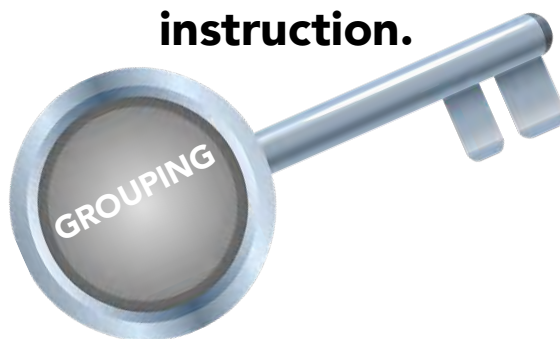
# Teaching Adding and Subtracting Polynomials through Station Rotation

(continued)

The high group started in station 3 with me because I knew they didn't need me to activate that prior knowledge that the other students benefited from. By doing the ability grouping, I was able to differentiate how I taught the concept. With the low group, we started slow and did several guided examples prior to reaching a trinomial +/- trinomial. However, with the high group I didn't have to spend as much time with the lower level problems, which allowed me to let them discover how to add and subtract the polynomials rather than me teaching them directly. I could push each group of students in a way that was fitting for them.

■

**Ability grouping is key to differentiating instruction.**



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# UECTCM Leadership 2017-2018

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# Membership Application 2017-2018

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Complete application and return to Amy Glass with a check for \$10 made payable to UETCTM. Mail completed application and check to:

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Mount Carmel, TN 37645

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

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