



UETCTM

Newsletter

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NEXT UETCTM MEETING:

Tuesday, Feb. 17th 4:00-6:00
John Sevier Middle School
1200 Wateree Street
Kingsport, TN 37660

VOTING FOR NEW OFFICERS

Current Nominees:

President: Lawrence Nussio-Hawkins
County Schools

President-elect: Andrea Fissel-Johnson
City Schools

Treasurer: Jerry Whitaker-Washington
County Schools

Secretary: Pam Stidham-Kingsport City
Schools

NCTM Representative/Newsletter

Editor: Ryan Nivens-ETSU

Contact Ryan Nivens to be added to slate

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Linking Algebra 2 to Pre- Calculus: One Approach

by Amanda Phebus



While I haven't been teaching long, 6 years to be exact, a new adventure possibly awaits me in the fall – Pre-Calculus. Don't get me wrong; I'm utterly and completely thrilled with this proposition! But thumbing through the Pre-Cal textbook rattles my confidence a bit. I'm always up for a new challenge, but this is

monumental: a new set of Pre-Calculus standards, a textbook that doesn't seem quite user friendly, and working the ideas of Common Core into this material. The path appears daunting, but I also just want it to be a stepping stone. I've taught Algebra 2 multiple times during my career and I am confident in my abilities in that realm. So, I'm thinking that if I can bridge the two subjects – Algebra 2 and Pre-Calculus – then maybe this won't be so bad. (Check in with me at Christmas!)

So, when I get like this, I turn to people who know infinitely more than I do. I scour the Internet, read math blogs, peruse random math questions, sort through tons of filler material, and watch TED Talks. Recently, I watched a video from a 2013 session called “3 Rules to

Spark Learning” by Ramsey Musallam. I highly recommend watching the video yourself and/or visiting his website (cyclesoflearning.com). He's a chemistry teacher in San Francisco, who uses three rules to spark learning in his classroom. Basically they boil down to these:

1) Curiosity Comes First: We should strive to confuse and perplex students by how our subject works. We should make them ask questions. Have them explore to find more answers. Let the kids push the envelope of their learning. Let them work together to push each other in their learning. Sadly, curiosity is a naturally embedded element of the psyche that we teachers often dissuade children from using. I am certainly guilty of it more than I would like to admit.

2) Embrace the Mess: Students need to struggle with the material. Struggle happens to be messy, even in mathematics. Using guess and check, the brute force method, or some sort of mathematical-like trickery are the things that make those of us who love math for its elegance shudder. However, I am realizing it is the mess and the

struggle that makes the math stick in their brains. And then we need them to muddle back through the mess and explain to us why it works. How did you arrive at this answer? How do you even know that this is the answer? Their musings on the problem will help provide some order to the “mess.”

3) Practice Reflection: Teachers, this is all about us! If we don't reflect on the lesson, we are as bad as the students who don't go over the questions they missed on the last test. Reflection is something that is often swept aside because we've spent six straight hours on our feet, dealt with hassles and hurricanes, and only had a 5 minute break for lunch in between this and that. We deserve not having to look at that again. It's done. It's over. Wrong! We can't grow as teachers in our profession without pushing ourselves to the next step.

So, I have developed a lesson plan, called “Make it Move,” taught in Algebra 2 at a more basic level that is greatly expounded on in Pre-Cal: Graphing Sinusoidal Functions. Now, even in Algebra 2 we touch on sine and cosine curves and the Unit Circle, but Pre-Calculus takes it to a whole new level. So, the following lesson plan that I'm going to share with you

attempts to link the two courses with a discovery activity and relates back to Musallam's “3 Rules.”

1) Curiosity Comes First: The students are presented with pictures of three objects: a trampoline, a swing, and a Ferris wheel. Make sure they are all plain, boring pictures showing no humans or landscape, and ask your students what the objects have in common. Let them know that the objects potentially have multiple connections other than mathematical ones but they need to find as many connections as possible. Let them collaborate, giving an adequate amount of time. Your job is to make sure they stay on task and to move on when they seem ready. Have students submit a hypothesis which is shared with the rest of the class. If no one seems to find a mathematical connection, give them a hint: the title of the lesson, “Make it Move”.

2) Embrace the Mess: Students work within their groups to figure out how each of the objects reacts with humans when we attempt to make them move. Remember that the students are in control (e.g. what to graph, what variables to use, how they interpret the experience with respect to the graph. If a group is having

difficulty, I recommend having some visuals on hand, such as a video of someone bouncing on a trampoline, a desktop pendulum, and a picture or model of a Ferris wheel. Have the students share their graphs and you can take the time expounding on the various aspects of the sinusoidal graphs the students created (e.g. amplitude, frequency, period, and critical points). Finally, give your students exercises involving distances and times through which they have to indirectly relate back to amplitude, frequency, period, or critical points.

3) Practice Reflection – Don't forget this step! Ask yourself questions like: Was the lesson successful? Why or why not? What aspects of the lesson should go more in depth? Was there anything that was too confusing or poorly explained? What other questions come up during the class period? How did the students respond to this task? How can I make it better?

One is the Loneliest Number: PLC Within and Beyond the Classroom

by Angela Minnick

In my 3 years teaching secondary math, I have taught 3 different levels of math at 3 different schools. Through my brief experience, I have found the greatest contribution to the success of a class has been collaboration. In the two schools where I had a network of teachers to rely on for resources, bounce ideas off of, and discuss successes and failure of strategies and lessons, I have noted not only do I feel more at ease, but my students perform at a higher level. Conversely, in the school where I was left to figure it out for myself, I felt isolated and more anxious, and my students did not perform as well. Additionally, when I forced this type of isolation upon myself, my results were similar in that class to the school with no teacher network. Combining these observations with my Mathletes experience this summer, I have determined that having a

professional learning community (PLC) is integral to my success as a teacher.

My PLC is helping me become a better teacher even between school years. I have done more to prepare for the upcoming school year than ever before as a direct result of the encouragement of my PLC. Over the past 2 years, I have increased my PLC to include teachers who teach the same subjects as well as those who possess classroom skills I could benefit from integrating or developing in my class.

I realized that I could not, in good faith, laud the beauties of the PLC while I simultaneously required my students to learn in isolation. Todd Whitaker put it best in the Niswonger Symposium in 2013 when he asked a room full of teachers, "In what profession will your students be required to work in total isolation?" I've spent the past year mulling over this thought, and come to the conclusion that for the overwhelming majority of my students (and probably yours too) they will never be required to work in isolation once they leave the school environment. So how can we as educators say we are preparing our students for life when we don't even allow them to learn in a lifelike environment?

This Fall, when I set up my room for a new group of students, I'm not going to put them into a row and column grid for them to learn in their own 25 different islands; instead, I'm going to have my students form a personal learning community (plc). Through this experience, they are going to learn to use each other as resources. Additionally, I will be placing emphasis on noting the contributions of each member of the group. My goal is for my students to learn to think, and what better way than to test hypotheses, even wrong ones?

I would encourage every teacher to establish, cultivate, and grow PLC as well as plc for the growth of the teachers as well as their students.



Solutions Oriented Common Core

by **David Shankle**

My teaching career has recently begun, as I have been in a classroom for a little over two years. Instead of beginning a career in teaching, I spent a number of years working in the medical field as a biomedical engineering technician. In this past career, I specialized in life support equipment, namely anesthesia machines and ventilators. When I began my new career in the classroom, it was in the hopes of showing my students how mathematics learned in the classroom could be applied in engineering, technology, and healthcare.

As Common Core has been implemented in leaps and bounds over the years since I have become a teacher, I have been both ecstatic and scared by what I am seeing. Since the state and federal government have failed to give clear and concise explanations of what common core is, it has fell to various educators, in multiple workshops, espousing their opinion and views of what somebody else had previously said in regards to Common Core. All of this

interpretation comes before one even looks at a testing method, such as PAARC, where the results directly affect the teacher's livelihood.

The hearsay and perspectives of common core that I have been privy to have me deeply worried that we may be missing an opportunity to help prepare the generations of the future to rise against the people of other nations. I was deeply impressed by the ideas of common core at the elementary school level, the idea that solving everything on a calculator might not really be teaching student basic concepts



is an idea that a number of upper level math teachers have been voicing since calculators were introduced in the school when I was a student. Informing students that a problem can be solved in a variety of ways is also a wonderful goal, even if it again is not a completely new idea. Adopting this mentality on calculators and multiple ways to answer a problem will only help our students be more successful.

My issue with common core is more in how teachers are being led by the state into implementing the new standards in the classroom, and as such, I do not wish to discourage the standards but give others something to think about. Again, when I read common core principles, they are just a set of standards that lay out what should be taught, when it should be taught, and how it relates to other content. The way in which state workshops are leading teachers into classroom implementation is what worries me from my perspective and past experiences working with mathematics in a field where human lives are involved.

The problem that most worries me and I think should be considered by educators in their classroom is the idea that a correct solution is really not that important. In fact, at a TNCORE training that I have attended, the facilitator said with authority that educators need to focus more on having students write down anything they can think of in relationship to the problem and that the answer really did not matter to being successful as far as common core is concerned. The counter thought that I have for educators is this: when one of your students becomes a nurse or even a physician, the correct answer is the difference between life and

death. How he or she arrived at that answer is irrelevant. Do we want our students to lose sight of the correct answer and bog down in various levels of mathematics? Is this really even the point of the standards?

The state of Tennessee has tested students with a number of Constructed Response Assessment tests over the last few years. These questions on these assessments have been in the form of tasks and have been graded with a rubric. The focus, according to the points awarded by the rubric, has been on developing a mathematical argument to defend your answer. The actual answer provided is almost non consequential. Students who are taught only to defend their answer above providing the correct answer will face problems. In my previous career, a mathematical error can and has led to peoples' deaths. The technician, nurse, doctor, or whoever can justify their answer anyway they want, but the patient will still be deceased.

Even if the state has lost sight of a correct answer and placed more evidence on students arguing their perspective, as an educator that crosses bridges designed by engineers, a human that needs to occasionally go to a clinic or hospital, and even as a citizen who must rely on various

government agencies to not mess up my statistical data that they deem so necessary to keep, I want the people in these jobs to have the correct answer. I do not need them to explain why they used the math they did when the building collapses or they give me a drug concentration that puts me in a medically induced coma. While I believe that these new standards can be taught, I see the need to keep the focus on correct solutions also.



Teaching Circumference with Book Holes

by Jessica Hawkins

A literature unit I complete each year with my students is the book "Holes" by Louis Sachar. This book is about a boy name Stanley who gets sent away to Camp Green Lake because he supposedly stole a pair of shoes. At Camp Green Lake the boys have to dig holes to build character. To incorporate math into this literature unit you can do the following exercise:

1. Have students use compasses to draw big and small "holes" on the floor using washable markers.
2. Let students choose whether to measure diameter or radius of the "hole" they drew.
3. Students calculate the circumference of the "hole" they drew.
4. Students then go around the room and find the circumference of other students' "holes."

To add a writing aspect to this, sometimes I have the students create circumference word problems using the characters from the book. This book is usually my students' favorite literature unit all year, and they enjoy getting to use their math skills with it.



The Importance of a Cumulative Math Class

by **Jamie Redmond**

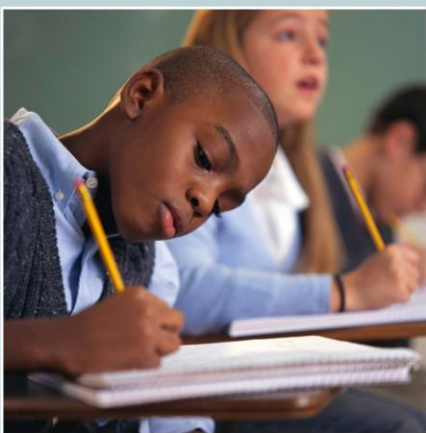
The best math class I can remember was a dual enrollment Probability and Statistics course that I had my junior year in high school. I don't remember the teacher to be anything extraordinary. She did not turn cartwheels or have awesome games and activities every day. In fact, I do not remember anything at all about her instruction. What I do remember is that her tests were cumulative. Every time we covered a topic or unit there was test at the end to assess our learning. The tests covered not only the current unit, but all the previous units we had covered in the class as well. The first test was relatively short; but, of course, as the semester continued the tests became longer and longer. Finally, at the end of the course, the final exam covered everything we had studied the entire class. Because we were required to keep practicing and were held accountable for the material we had learned at the beginning, middle, and end of the course, most of us had retained all of the information. Now, could I

pass that end of the year test now? Probably not. I have not worked with probability and statistics in quite some time. This only proves my point. Math is a scaffolding subject. Basic understanding of mathematical concepts is required for continuation of more advanced mathematical studies. Moreover, cumulative tests and cumulative reviews are very beneficial to students' success because they require students to continually revisit math concepts which are building blocks for advancing problems.

Learning, in general, is cumulative. It is all connected and is built on prior knowledge. Math is a scaffolding subject in that one must have a base knowledge of a concept to deepen understanding or take learning a step further. For example, a person cannot learn to multiply if he or she does not have an understanding of addition. So, it makes sense that a cumulative review would help a student practice skills that require fluency. Cumulative reviews give students chances to apply their acquired knowledge; they also allow students to build confidence in their application of those skills. My favorite proof of the need for cumulative reviews and assessments is that learning obviously does not happen overnight. Students ultimately need

repeated, meaningful exposures in order to be successful.

In thinking about how important cumulative reviews and assessments are and my experience as a student with it, I plan to make some changes to my goals for this coming school year. Last year, which was my first year teaching 4th grade math, I used a spiral review as my class start-up or "bell-work." I plan to do the same this year, incorporating more mini-task type problems in with the spiral review. I also plan to add a cumulative test to my assessments this year. I am anxious to see what a difference the cumulative exams make. I am assuming that this will aid my direction in planning because with my spiral review last year minus the test, I was not able to pinpoint exactly who needed more exposure to which topics / ideas that we had previously covered. I will continue looking for more ways to make my math class more cumulative and am excited to start the year with this in mind.



Clever Strategies in the Classroom

by Peter Ryan

Strategies to solve mathematical questions have changed a great deal from when I was in school. Years ago teachers would show us one way to solve a problem and then we would repeat the strategy numerous times until we memorized the process. The classroom is drastically changing. Children are seeing math from a different angle. They are creating their own algorithms to solve challenging tasks. Teachers' perspectives are changing with how they are instructing. Teachers are beginning to move away from being instructors to facilitators. The facilitating philosophy is beginning to give children the challenging education they deserve.

With the advances in science and technology it is vital to have a strong mathematical background in today's society. It is hard to predict the future but it is evident that the demand for skilled math individuals is increasing with every passing year. So pressure is also increasing on math teachers to get students where they need to be mathematically so that they will be able to be competitive in their desired careers paths. So what can math teachers do to help students be successful and assure that they grasp the needed concepts? Teachers need to step back and let the children struggle.

When starting the teaching profession I still had in my mind how I have been taught for so many years. The teachers would be in the front of the classroom instructing and telling us exacting what we need to know. So when getting into the education program in college I had to change my mindset and look at education from a totally different perspective. "All children learn differently" is the statement I heard in every educational class in college. I also learned that differentiation in the classroom is a must to accommodate the needs of the diverse learners. I didn't know how diverse it actually is in the classroom.

My first professional development session when starting my new teaching position was a total wake-up call. The session was on math and the new strategies that are being used to teach students. I was totally blown away and surprised by all the strategies there were to solve for all the operations. Immediately I began to reflect on my education and realized how much things have changed. When I began teaching I knew I would have to change my ideas on how to teach. That didn't happen at first.

Unfortunately, I started in the classroom as an instructor instead of a facilitator. I was trying to model what I had seen for so many years. I began teaching each class upfront telling the students exactly what I thought they needed to know. I did not see the many strategies nor did I see the gains that I thought the students should be making. However, things began to change. Fortunately, after some help from other teachers, principals, and coaches I began to let go from instructing and began to facilitate more. After letting students begin to experiment and discover, I began to see the clever strategies and algorithms that the children were creating on their own. I started to see how the children were learning differently. We would go over the many

strategies the students were creating and it was amazing seeing students choose different methods to continue to solve questions. Many strategies were being used, not just one, and the students were learning.

The classroom is changing and it is crucial that teachers are differentiating their instruction. Classrooms must adjust to accommodate to the needs of the diverse learners. Teachers need to step back from being instructors and begin to let go, facilitate and ask the advancing questions that will take students to that next level.



“The classroom is changing and it is crucial that teachers are differentiating their instruction. Classrooms must adjust to accommodate to the needs of the diverse learners.”



Teaching Partners

by April Stipes

Teaching is hard, but so worth it. Teaching is not like any other job I have ever accomplished before. After my first year, just this past year, I have decided that your teaching partner(s) are PRICELESS. Your teacher partners are so much more than just a co-worker. Co-workers normally just share the work place. You and your teaching partner share the education, behavior of children, and the work place. Hmm... sounds like a marriage with children. I know last year I spent more time with my teaching partner than my husband. And I spent more time with my students than my own children. So what qualities should you as a teacher have in order to be a good teaching partner? I mean you are spending a lot of time with this person, so you want to be able to get along, right? I have thought about what qualities that my teaching partner possessed that I valued and I have asked several teachers their opinion. I have listed them in order from most important to least important.

1. Communication - be willing to talk to your teaching partner about behavior, parents, etc.
2. Share - ideas, work load, and the consequences of your students.
3. Be flexible - Most teachers are VERY creative and most teachers have GREAT ideas. Your idea does not have to be used all the time.
4. Trust - Do not bad mouth your teaching partner to other people (especially other teachers). If you have a problem with your partner see number 1. COMMUNICATION. Talk about it with him or her and work on a solution together.

My Mathletes Experience

by Tracie Hill

Where do I begin? A couple of years ago one of our math coaches, Amy Glass, mentioned Mathletes to me. Although I was interested in participating, family commitments would not allow me to do so. Fortunately for me, my schedule allowed me to participate this year. When I arrived at ETSU on the first day, I admit I was nervous. I was not sure what to expect. Almost immediately I began to feel part of a family. Everyone was so positive and encouraging. It was evident to me that the people involved in the program were there to help each of us grow as educators. The representatives from Eastman were smiling and excited about providing us with the opportunity to learn strategies we could use in our classrooms to help our students be successful. Our professors offered us insight into research-based activities and ideas to challenge not only our students, but ourselves. Now that our time is coming to a close, I reflect back on the experience. I am amazed at the personal growth I have experienced in just two weeks. When I started teaching math three years ago, I was a language arts teacher teaching math. Today, I can say I finally believe I am a math teacher. Does that mean that I do not have a lot to learn or that I have reached the pinnacle of my career? No. It just means that now I feel more confident and better equipped in my role as a math teacher. As a student, I did not learn how to use manipulatives or make models to help me really understand the math concepts, not just memorize what the teacher was showing me. Throughout my teaching experience, I had yet to identify any professional development opportunities that really taught me what I needed to know to be a better facilitator of learning math. This experience in Mathletes has given me that opportunity. I finally feel comfortable using manipulatives and providing opportunities for my



students to learn in their own ways. I truly understand what it means to differentiate. I understand that sometimes there are multiple ways to work a problem. I understand how to identify potential areas of misconceptions and I understand what assessing and advancing questions are supposed to do. Although I have so much more to learn and many years to continue learning, I finally feel prepared and inspired to do so. Thank you to Eastman for investing in not only my future, but the future of all my students. Thank you to ETSU for providing us with the most knowledgeable and inspiring professors to help us push ourselves to be better. Thank you to my professor for her commitment to all of us. Even when we were struggling to understand, she remained positive and encouraging. She had a way of making me want to be better and not be afraid to take risks. Thank you to my classmates and carpool friends. I have learned so much from each of you and am blessed to have you as friends. You made this two weeks so memorable and meaningful. We will definitely keep in touch. Thank you to my school system, my principal, and our math coaches for allowing me the opportunity to be a Mathelete. I consider this to be the most influential experience in my career. This experience has inspired me to believe in myself and my commitment to my students. It has taught me that I am a teacher, because it is my calling. Through this experience I have truly found my love of teaching again. I am excited about this school year and all the potential for growth it will bring not only to my students, but to me. Thank you again to everyone involved in the Mathletes Program. You will never know the impact your commitment has made on all of our lives and the lives of all our students.

Becoming the Student

By Pamela Statzer

After registering for Mathletes, I was very nervous about what to expect. Mathematical facts always came easy to me, but word problems were more difficult and challenging. I never dreamed of becoming a teacher, and certainly not an educator of students with special needs. Therefore, I consider it important to challenge myself in learning various methods and strategies for teaching especially in mathematics.

In my opinion, growing as an educator requires first becoming the student. Observing students struggling in math and other academic areas has helped me to realize the importance of learning to take on the role of a student. Having some relation or connection in understanding academic challenges can be supportive in helping students overcome their academic barriers or obstacles.

Often I have worked with students who lack the confidence in reaching their academic potential. They have developed a mindset of "I can't" and left with the feeling of not being good enough. This is why I appreciate the "I can" statements used in our school system. Since I continue to struggle with self-confidence, it's my desire to assist in building a student's confidence by showing what they can do instead of focusing on what they can't.

Not only has Mathletes provided me with several teaching tools and strategies needed for helping students become more successful in math, but I have been provided an opportunity to become the student and persevere during difficult challenges. I look forward in beginning the new school year by sharing the knowledge gained through this program and witnessing the learning of students.

Mnemonic for Division: Dad-Mom-Sister-Cousin- Brother-Rover

By Tiffany Hibbitts

Over the past four years, I have taught fifth grade math in two different states, using three different curriculums, and having the opportunity to be blessed by approximately three hundred students. Throughout my journey, there is one concept that I continue to see students having a difficult time understanding. Can you guess what it is? I know, there are several, right! But the one I am targeting is long division.

I know it's no secret that we begin our journey with long division using the infamous "Division Family" mnemonic: "Dad, Mom, Sister, Brother, Rover." My first year teaching, some of my students said they had been taught about "Cousin" being a part of the family but they just couldn't remember the important role of the cousin. Some said cousin came at the end to represent going back and checking your work, others said cousin represented compare, but why? Where does "Cousin" fit in to the Division Family?

As I continued my research to help my students become successful and fluently completing a long division problem, I realized how important "Cousin" really is in the family. I always begin with Dad dividing the problem, Mom multiplying, and sister subtracting. Then, I begin to stress the importance of cousin stepping in to the problem and comparing the difference sister found to the divisor we are dividing by. I ask my students, "What is the importance of cousin comparing these two numbers?" As we work our way through our discussion, students begin to realize that if sister's number is greater than or equal to the divisor then we have made a mistake in a previous step and we

need to stop and rethink our problem. Dad didn't choose the correct number in the quotient or mom has made a mistake when multiplying.

I stress to my students the importance of "Cousin's comparing" and how it is the easiest way to catch a simply mistake when working a long division problem. Students who are still struggling with basic multiplication facts seem to benefit from this step the most.



Traits of Effective Leaders

By John Good

The workforce that our economy depends on is made up increasingly of college-educated people. A two-track economy system exists in the United States and the gap continues to grow between the 'haves and the have nots.' On the first track are relatively stable, high paying jobs for the well-educated, while on the other track is found the low-tech, low paying jobs with little to no future and an incredibly high turnover rate. The second track is what awaits the poorly educated and dropout sector of our school population.

To close the income gap, make our students more economically competitive, and provide social and psychological stability in a world that seems to have lost its moral compass will be a daunting task. To be successful in this endeavor a type of visionary leadership superior to what we have experienced in previous years will be necessary. The old traditional leadership role will have to be replaced. The view of leadership is one of which, with the help of a community of people (faculty, staff, parents, business and community leaders), sets the course for the motivation, instruction, and achievement of our students.

The following three traits of effective leaders are a few of the traits in my opinion that lead to effective leadership and transition, (the traits are certainly not limited to this list):

Ethics and Integrity

A leader with integrity must also be an individual of deep conviction. A person with consistency, compassion, and a strong set of principles, who is also passionate with a sense of urgency about improving opportunities for the students, can be a contagious catalyst for improvement. Leaders are attempting to guide the students through a very difficult time in their

lives; not only must academics, critical thinking skills, and learning styles be considered but also guiding principles to help lead our students. Ethics are communicated that it is not just what society accepts because there are different actions that are accepted in different regions and cultures; they are well-founded standards of right and wrong regardless of the culture.

Collaborative/Develop a shared vision

The leadership role for a school or school system is far too complicated for one individual to complete. A leader should have a leadership team consisting of teachers, staff, and parent/community members who will adapt the vision and provide their expertise in the decision-making process. The leader must 'model' the vision for others to follow. What may start out as one individual's vision will start to become a shared ownership through collaborative efforts. An effective leader will rely on the talent, commitment, and leadership of many people. Everyone in the school must take responsibility for the student's development.

Understand self-values, skills, and knowledge

Any individual, especially in a leadership position should have a high level of self-understanding. This is what develops us into who we are and helps to shape our lives. How would we teach and be a person of influence in the lives of others without having a foundation to stand on? A leader can communicate that an individual's self-value is not based on society's excessive value of outward appearances, but true value lies in an individual's view of the importance of integrity, kindness, emotional intelligence, etc. Emotional intelligence is said to be comprised of five components: self-awareness, self-regulation, motivation, empathy, and social skill. A leader that can communicate the importance of the components of emotional intelligence over that of an outward

appearance; the leader would equip an individual that can accomplish more than they had ever dreamt.

There are certainly many more that traits that an effective leader can and does exhibit to help develop the individuals that are under the leader's guidance. With these three traits, in my opinion, a student will have the foundation on which they can function in society at the level of their own choosing and not simply placed because of stereotyping or profiling. A leader that can equip an individual with the resources of principles, self-value, and a vision of success can help mold an individual that can move barriers that may present themselves throughout the individual student's life. They can turn stumbling blocks into stepping stones.

Let's Redo Tasks

By Haleigh Garber

As a new teacher, I was faced with the question "Is it me?" when my students were not performing as I would have liked or hoped. This question was coming up regularly when I was trying to get my lower level students excited or motivated to work on a task. The good news, it wasn't just me. I found, after discussing my issue with my fellow teachers, the majority of my department was dealing with the same type of problem. Together my mentor and I set out to solve the "crisis." How do we get students to even begin tasks, let alone complete one without having them feel overwhelmed or simply giving up? We decided to focus on how students were feeling when they first saw the task, how they responded in a partner setting and if they were willing to share their finished product. After a few practice tasks, we wanted to focus on beginning a task. The three areas we found we could improve on were: Set Up, Prior Knowledge, and Summarizing.

Set Up

We found that we were losing students by the time we handed out papers. We decided that each task would be given out AFTER it was talked about. Just the idea of a task had our kids moaning so why not start with a movie, some music, or go as simple as a conversation, so they can visualize themselves in the task. For example; if the task is about a car wash, ask them how a car wash works, why do people have them, does everyone involved earn the same amount of money, or do all customers pay the same amount per car? But remember no math here! Keep it fun and allow the students to see how this task can relate to them.

Prior Knowledge

We noticed our lower level students were not used to keeping track of what they had learned in previous lessons or years. We wanted to give them a boost in confidence by reminding them of the tools they already have inside. This could be done

by trying to keep tasks directly related to the unit they just finished. For example, proportions, to unit rates, to slope, to graphing linear equations, and so on. OR we could create a mind map specifically calling out prior knowledge they will need in order to begin a task on their own. If there was a task where understanding/reading from graph was a major component, maybe create a section of the map relating to graphs. This could be how to read ordered pairs, giving points labels, plotting points and more. By bringing out what they know we give kids confidence to begin working.

Summarizing

We also found most of our lower level students have a low reading level. This caused an immediate shut down when paragraph after paragraph, word problem after word problem was displayed on one sheet of paper. Since reading and understanding is key for success in a task, we discussed giving students only the images provided with a task. This way we could read the displayed paragraphs together and students could summarize what the question was really asking. This would allow for discussion of any unfamiliar academic language and provide students practice with finding key information, and give everyone an equal level of understanding the big idea.

We needed a way to build confidence, increase participation, and get students working to their ability. These simple changes have been making a difference in my classroom and I can't wait to see what else we come up with to help our kids get where we know they should be. Get them excited with a set up that involves something other than "more math," bring out prior knowledge to build that confidence, and make a task look less intimidating by presenting the questions in a new way and allowing them to write a shorter/simpler version that they can easily understand.

Organizations we are affiliated with:

National Council of Teachers of Mathematics (NCTM)

<http://www.nctm.org>

Tennessee Mathematics Teachers Association (TMTA)

<http://www.tmta.info/>



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The Upper East Tennessee Council of Teachers of Mathematics is an organization for anyone involved in mathematics education from preschool through college in the greater Tri-Cities region. This year we will have a single-day conference in the spring at a day and location yet to be announced. The purpose of UETCTM is to promote excellence in teaching mathematics and to share best practices among mathematics educators.

