UETCTM News

MATH FUN

Serpentine Mathematics

The Flood is over and the ark has landed. Noah lets all the animals out and says, "Go forth and multiply."

A few months later, Noah decides to take a stroll and see how the animals are doing. Everywhere he looks he finds baby animals. Everyone is doing fine except for one pair of little snakes. "What's the problem?" says Noah.

"Cut down some trees and let us live there", say the snakes.

Noah follows their advice. Several more weeks pass. Noah checks on the snakes again. Lots of little snakes, everybody is happy. Noah asks, "Want to tell me how the trees helped?"

"Certainly", say the snakes. "We're adders, so we need logs to multiply."

Speed Limit π (3.1416 MPH)

UETCTM News

President's Farewell Message

First of all, I would like to say thank you to all the members of our organization for making the best of all the changes that have happened over the last several years. Just a few years ago, you managed through the TN Standards 2009-10 implementation. This year you have endured the new TEAM evaluation model for teaching. And now you are all preparing for the transition to the Common Core state standards. However, most of you have kept a positive outlook on the teaching of mathematics and you have continued to make a difference in the lives of our children in this region. I encourage you to continue to roll with the punches of the politics of our time, and continue to improve your lessons year after year. As I turn over the presidency to Tara Harrell this month, I have a few items to discuss.

Since I moved to this region in 2008 and joined UETCTM, things have only improved within our organization. With the continued support of our members, and the addition of new members each year through the Eastman Scholar Mathletes program, our membership is at an all time high. Our budget reflects this increase in membership, and we also benefited from the NCTM Regional meeting held in Nashville in 2009 and from the TMTA annual meeting we hosted in 2011. I have two ideas that I would like to see implemented in the coming years to make good use of these funds.

First, I would like to see us help start up and support undergraduate affiliates of the NCTM at local colleges and universities. Each of these locations will need enough students to support the group as well as a faculty member (who is an NCTM member) to serve as the faculty sponsor. I personally would like to see two faculty sponsors for each group: one from education and one from mathematics. The NCTM provides detailed guidelines for the creation of a student affiliate.

Second, I would like to see the creation of a speaker's bureau whereby local math teachers could be guest speakers at the region's college and university campuses. A small stipend of $25 or $50 would provide incentive for our most experienced members to volunteer time to help mentor the next generation of teachers. A request for payment for a guest speaker could be made to the UETCTM leadership on semi-annual basis.

Our area of the state is spread out and roads are not always fast. Historically, our group has been comprised of members from Sullivan, Hawkins, and Washington counties (and their city schools). Recently we have seen several people from Scott County, Va. in some of our meetings. I would like to see Unicoi and Greene county memberships in the future. As we grow, we need to rethink how we plan our meetings and stay connected.

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Over the years, we have seen a large increase in membership and leadership through the efforts of Eastman Chemical Company through their Mathlete program. This program, which provides training and resources to teachers from grades 2 through algebra 1, has become one of the most exciting programs in mathematics education in the region. All of the leadership of UETCTM is or has been affiliated with the Eastman Mathletes program. Another benefit of the program is the number of essays we have seen in our Newsletter each year. Approximately 60 essays are published each year since 2009, and next year looks just as promising. I would like to encourage our past authors to write again, and I would also like to see some new authors not from the Mathletes program become writers.

Next, the Tennessee Mathematics Teachers Association is the state affiliate of the National Council of Teachers of Mathematics. We are a regional state affiliate of the NCTM, and Tennessee is a state that has several NCTM regional state affiliates. Please consider attending the annual state meeting of the TMTA this fall. It will be held in Cookeville which is only about 3 ½ hours from here. Carpooling would make the trip affordable. Many of you who have presented at our UETCTM meetings should submit your sessions to the TMTA for consideration in their program. Presenting at the state level would be exciting and would be a nice way to meet the communication requirements of your evaluation as a teacher.

Finally, I would like to see an increase in the amount of mentoring that we do as a community. If we could have entire schools that volunteered to host student teachers and student interns we could increase the education of our future teachers as well as provide them with the enculturation of what excellent schools look like. Here at ETSU we are involved in the state's Ready2Teach effort to complete reshape the preparation of teachers. Part of this involves a full-year residency within a school under one teacher's supervision. Rather than extensive observations, the resident is to be involved in co-teaching the class. These pre-service teachers will even begin the school year with the teachers, attending the week before school starts in an effort to learn all that it means to be a teacher. Full implementation of this is expected in Fall 2013. For the sake of our K-12 students, I hope that those of you with lots of experience teaching will band together to ensure that you get our residency students.

Sincerely,

Dr. Ryan Nivens

East Tennessee State University

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Math Trivia

This month, our math trivia section is a shout-out to all of us who may have a student in our lives who has "Lego-Fever".

Mathematics based on an identical argument for shuffling a deck of cards:
Su, Francis E., et al. "Making History by Card Shuffling." Math Fun Facts. <http://www.math.hmc.edu/funfacts>.

Image Source: http://www.flickr.com/photos/13403905@N03/2080281038/ by Alan Chi
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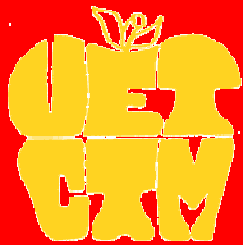
UETCTM News

Practicing with Whiteboards

By Christina Spooner

Johnson City Schools

Grades 7-9 Algebra

"Can we please use the whiteboards today?" is a common question I heard in my Algebra classes last year. My students greatly enjoyed, and benefited, from practicing math problems on my set of mini-whiteboards. Not only did they all work the problems, but they did more work than they would have done had I simply assigned book work or a worksheet. In addition, students were interacting with one another, asking each other questions when they "got stuck" and encouraging each other to keep trying, even the students who didn't normally talk in class! When problems were answered incorrectly, I was able to give immediate feedback to one particular student, a small group of students, or to the entire class if I needed.

While there are many benefits to using whiteboards in the classroom, sometimes it seems that using whiteboards can be overwhelming and perhaps chaotic. Here are a few ways to keep the chaos to a minimum:

1. Lay out your expectations for white board use before handing them out. I always remind my students that the whiteboards are not meant for drawing pretty pictures and writing notes to a friend across the room. If they won't do the work on the whiteboards, they will do it on paper instead.

2. Place a marker and eraser (a piece of cloth or a tissue works) in a baggie so that there are fewer items to pass out.

3. Assign a person in each row or group to be in charge of collecting certain items at the end (i.e. one will have all the boards, another all the baggies), then the teacher can collect the items from the designated person or have that person put the materials away.

4. Have a signal for gaining the classes attention. I use the phrase, "I need your attention now" and then raise my hand silently until everyone is looking at me. This usually only takes a few seconds once the signal has been rehearsed. A bell or buzzer may also work well.

While using whiteboards isn't an instant fix-all for every student (and yes, there will still be those who refuse to do much other than copy), it does help reach those students who need a little more interaction with the math.

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You Can Lead a Child to Water, But You Can Make Them Think!

By Mariann Duff

Kingsport City Schools

Grades 7-9

I have had the privilege of teaching high school students for over twenty years. I believe that once twenty years has past in teaching it really doesn't matter anymore how long you actually have been teaching. If you share that exact number of years, you are either just bragging on your endurance in our educational system or you're just crazy. Through the twenty-some years of teaching, I have been in three different states (California, Arizona, and Tennessee) and in five-different systems (Los Alamitos Unified, Cave Creek Schools, Deer Valley Unified, Hawkins County Schools, and Kingsport City Schools). After teaching that long and in that many different systems, you can't help but make some comparisons: **the students are basically the same**. I do want you to notice I am not going to compare students to hungry baby birds. Who are waiting eagerly in the nest with mouths wide open in excited anticipation that mommy bird will feed them with what they need until the time when they are ready to fly on their own. In case you didn't know, our students are not like that. Therefore, in my opinion, I think they are better compared to horses.

When I was much younger, my father decided to get some land and have horses. He grew up on a farm and actually horses were not just for pleasure but for work. He used them in the fields and as a means of transportation to and from school. However, he just loved horses and at this point in his life he just wanted them for his pleasure, an outlet, or maybe just to escape his six children. I am still not sure which of those best applies. Anyway, I used to help in the barn and would ride with him plus the rest of my family. I learned that horses do have individual personalities just like our students. However, they (horses) have many characteristics or behaviors that are eerily similar to the students in the

The Comfort of the Stall

When we wanted to ride, we would have to get the horses into the barn so we could saddle them up. Running around the eighty some acres with the bridle and saddle trying to corner the horse you were to ride was another option. However, it seemed that idea had me doing an awful lot of work and the horse just thought it was a fun game of keep away. Seriously, if the horse is not bound by a stall or rope, they will let you get within an arm's length of their back and then move. Sometimes, it was just a step. I believe that was just to keep me playing the game. Other times, they would run away or trot around me in circles seemingly to taunt me into continuing this game.

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This is why we would get them into the barn before trying to saddle them. My father and I would stand outside of the barn inside the gated corral and call for the horses by name. It always amazed me; they would immediately come galloping as if they were in a race. As they approached the gate, there would be pushing, bumping, and sometimes even biting at each other while jostling for the best position. Once they entered the corral, my father would shut the gate. Then, he would take the time to greet each one of them patting their neck while saying their name. After managing to calm each one, he would slide open the barn door. Always surprising to me was each one walked calmly to their stall. No more pushing or bumping. They knew which cubicle was theirs and that seemed to comfort them.

How does this compare to the students we see every day?

Let's look at a certain first day of school in some year of my over twenty of teaching. I was late getting to my classroom and the door was locked. As I approached my classroom the students were clustered around the entrance seemingly afraid to move at all and lose their position. As I approached, the whispering started: "Is that our teacher?", "I don't know.", and "Does she have a key?". However, there was still no movement among their bodies. They hardly stirred as I pressed my way through them saying "Good Morning" and "Excuse me" as I positioned my key in the lock and turned. When access was granted, they scurried to the desks. Claiming the ones they wanted. Some of them couldn't make up their minds and wandered without direction or purpose as the desks were being filled. The ones that lagged behind were stuck with the desks in the front, closest to the teacher. Day one had started with absolute chaos.

Now, let's look at one of my other year's first day. I was in the classroom at least a half hour before school was to start. My door was open to my room. As I noticed the first of my students sheepishly peeking through the entrance of the room to determine if it was acceptable to cross the threshold, I went to the doorway to greet each learner as they approached telling them "Feel free to sit anywhere, except at my desk.". I asked some of them their names, shook hands with others, and smiled at those students that didn't want to be noticed. This first day started very calmly with very little, if any, stress.

However, when I announced to both classes that the students would be able to sit wherever they wanted for awhile, cheers erupted throughout the room. Whispers again; "What did she say?","No seating charts?", "What?", and so on. However, during the next few days the results were quite interesting. In both cases, within a couple of days all of the students had claimed their permanent desks. Every day thereafter they went to that desk, even if on the first day they had wanted a different desk and that desk was now available to them. They were now content to remain in the front of the room, closest to the teacher. This was their place of comfort and belonging.

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Fascinating though it was to watch them enter my domain and sit in their chosen location, something needed to change. They were, nonetheless, situated in the same position surrounded by the same faces. A lethargic mood began to develop in the classroom. I didn't understand what was happening…Every day seemed to be exactly identical to the previous. The same students would answer my questions, they same ones would be talking to their neighbors, and the same ones would sleep. I was even getting bored with it all. Suddenly it hit me…the comfort of the stall! That which was perfect at the beginning must now be altered. It seemed that, if they are too comfortable, they would stop thinking for themselves. It was time to make them ill at ease.

The next morning, I met them at the door. As they entered, I called them by name and handed them a small slip of paper. On the paper was a simple equation. I instructed each person to solve their equation, then look for that solution on the desks. When they found their solution that was their desk for the day. They hated this! But for me, it was wonderful to watch them use their brain just to find their seat. The next day, they were greeted with a definition and they had to find the matching math term to locate their desk. The day after that I instructed them to sit in their original seat. The learner never knew how the class was going to begin. However, the comfort of the stall in the barn stayed with them throughout the year. I think the key is we want them to be comfortable but not so relaxed that their brain goes into couch potato mode.

Think about your classroom as a barn with stalls and your students as horses. Are they comfortable just being in your domain? Make sure there is a level of comfort in the classroom. Here are some things to try:

1. Greet them at the door.

2. Smile at them and say their name as they enter.

3. Let them choose where they sit.

4. Shake their hand.

5. Tell them something personal. Like, how hard it was for you to get up this morning.

Now that they are comfortable, shake things up. Try some of these until you come up with your own:

1. Greet them with slips of paper with an equation to solve. The answer is taped to a desk which will be their new seat. (Or vice-versa)

2. Rotate the desks 90 degrees in either direction. Then tell them to sit in the same one they had yesterday.

3. Increase or decrease the number of rows. Tell them to find a seat as they enter the room.

4. Have the desks in groups of 3-5 with colored dots on them. As the student enters, give them a colored dot and tell them to sit in a desk with that color.

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Math...What Language is That?
By Sarah Renfro

Sullivan County Schools

Grades 7-9

How many languages do you speak? When we think of languages, we think of letters… which form words… which form sentences… which form paragraphs… which finally form a language. But, what does this have to do with math class? In math class, we generally speak in numbers, expressions, equations, etc... How about we call this "math language"? Next, we may want to ask ourselves, "Do our students speak the same math language as us? As each other?" Let me explain by telling a story about a young lady that I tutored in math several years ago.

This young lady had some minor struggles in Algebra and did not want to get behind. So we met a few times to clarify several questions and made sure she was on track with Algebra. In the meantime, as we got to know each other, I learned that she liked to write. She liked to write stories and plays among other things. So I thought to myself, "Hmmm, what does this tell me about her, and how could that possibly relate to math???" Then it dawned on me! Algebra is full of "stories"!

Everything we write is part of a story. So I shared with her that doing her assignments and solving the problems are similar to telling stories. As we write expressions and equations, we are telling stories. For example, one story that is told over and over in Algebra is the "Story Of x". It usually has similar endings which look like, "x = a number". We constantly demonstrate how to solve for x in ways that are familiar to us as teachers, but what if our students' math languages are different than ours? How can we know with what languages our students are familiar?

I share that story to emphasize that, as my sister shared in her article last year at the Eastman Scholar Mathletes 2010, it is imperative that we listen to our students.

> *"It is my hope that by simply listening, I can continue to build students up and encourage them rather than discourage them by pushing them away. I also hope my students learn that they are important to me, not only as students, but also as people. Their performance in my class improves throughout the school year as they realize that I both SEE and HEAR them."* ~Luci Creech

If we as teachers opt to avoid conversations with our students (before or after class), we miss out on all that our job has to offer… building relationships with our students. Listening to our students leads to learning about our students which can lead to realizing what their math language is. Can you imagine the feeling of knowing that your math teacher wants to get to know you, learn your math language, so you can be successful in that class?- Wow!

As they say, *"[students] don't care how much you know until they know how much you care."* So, how many "languages" do you speak?
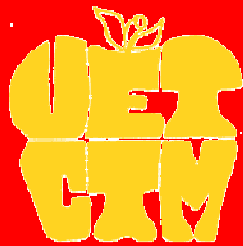
UETCTM News

Breaking Factoring Down to Basics

By Michelle Fore
Hawkins County Schools
Grades 7-9

Usually when my classes get to the chapter on factoring, the "do we really have to do this" questions come up, along with "this is too hard" or "I can't do this." Over the course of the past few years, I have modified how I teach factoring. Students usually put up a wall if they hear the word, especially if they have already had some exposure to factoring and didn't quite get it.

I begin with a simple definition of factoring that uses what they know. Factoring is backwards distributive property. By now, they have used the distributive property so much they probably could do it in their sleep. Distributive is now somewhat easy, due to the familiarity with it and practice they have had at it. So factoring so far is based on something with which they are well acquainted.

The first expressions we factor are polynomials (no special trinomials). We go back to sixth grade math and good old GCF. Now, not all students will remember much past GCF standing for greatest common factor, but that is still something we can build on. If we then take a couple of number and break them into their prime factors, we can then circle the ones they have in common. Multiply the prime numbers that are in common and we have our GCF. After the brief review of GCFs, show also how simple it is to find it if the terms have variables

Example 1: Find the GCF.

$$30x^2y^5 = 2*3*5*x*x*y*y*y*y*y$$
$$45x^4y^3 = 3*3*5*x*x*x*x*y*y*y$$
$$GCF = 3*5*x*x*y*y*y$$
$$GCF = 15x^2y^3$$

Next, we take a few minutes to review lessons on dividing polynomials and rules of exponents. Even though these two concepts don't seem closely related, the students don't usually complain for a lesson that is mostly review. I try to always start off with example of just numbers and after a one or two, move to one that involves variables. If needed us prime factorization again and cancel from top to bottom.

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Example2: Simplify.

$$\frac{27x^5y^3}{42x^4y^7}$$

$$= \frac{3*3*3*x*x*x*x*x*y*y*y}{2*3*7*x*x*x*x*x*y*y*y*y*y*y*y}$$

$$= \frac{3*3*x}{2*7*y*y*y*y}$$

$$= \frac{9x}{14y^4}$$

After the review of GCFs and dividing monomials and polynomials, we add a final step to factoring polynomials. Rewriting. That's all. Watch in the next example.

Example 3: Factor completely.

$$15x^2 + 6x^4y^6 - 39x^3y^2$$

Step 1: Find the GCF.

$$15x^2 = 3*5*x*x$$

$$6x^4y^6 = 2*3*x*x*x*x*y*y*y*y*y*y$$

$$39x^3y^2 = 3*13*x*x*x*y*y$$

$$GCF = 3*x*x = 3x^2$$

Step 2: Divide polynomial by GCF

$$\frac{15x^2 + 6x^4y^6 - 39x^3y^2}{3x^2}$$

$$\frac{15x^2}{3x^2} + \frac{6x^4y^6}{3x^2} - \frac{39x^3y^2}{3x^2}$$

$$5 + 2x^2y^6 - 13xy^2$$

Step 3: Rewrite for the answer.

$$GCF(answer\ to\ step\ 2)$$

$$3x^2(5 + 2x^2y^6 - 13xy^2)$$

Now there are three other basic polynomial types that have ways to be factored. The easiest of the factoring methods is different of squares. If the students recognize they have only two terms, both of which are perfect squares and both of which are separated by a subtraction sign, then the solution is short and sweet.

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Example 4:

$$(9x^2 - 144)$$
$$\text{since } 9x^2 = (3x)^2$$
$$\text{and } 144 = 12^2$$
$$\text{answer: } (3x + 12)(3x - 12)$$

And as with all factoring problems, the solution can be checked through distributive property. The Trinomial with leading coefficient one is simple. The trick to this one lies all in signs of the numbers. Given that our trinomial is of the form $ax^2 + bx + c$, If the last sign of the trinomial is a plus (+), then when we set up our two sets we go by the first sign to use in our parentheses.

Example 5: Factor

$$x^2 + 6x + 8 \text{ and } x^2 - 6x + 8$$
$$(x + 2)(x + 4) \text{ and } (x - 2)(x - 4)$$
$$\text{respectively.}$$

The second case is when we have a subtraction sign for our second sign. In this case, students should still put two parentheses and an x in the front of each. However, students should take the first sign in the equation and give that sign to the larger number.

Example 6: Factor

$$x^2 + 2x - 8 \text{ and } x^2 - 2x - 8$$
$$(x + 4)(x - 2) \text{ and } (x - 4)(x + 2)$$
$$\text{respectively.}$$

In both cases, the factors chosen were ones that multiplied to give us the last number and added to give us the middle one.

There exists one last case in trinomials with regards to factoring. However, these are the ones that sometimes pose the most problems to students; the ones where the leading coefficient is not one. In this case, I show students step by step how to work the distributive property backwards. I start with an example using the leading coefficient of one, since it is something with which they are already familiar.
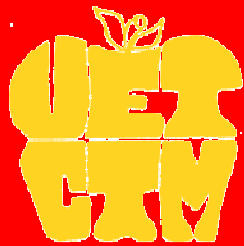
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Example 7: Factor the trinomial: $x^2 + 3x + 2$

Step 1: Multiply first and last numbers 1 * 2 = 2.
Find the factors of 2: 1, 2 and -1, -2
Step 2: Which factors add to equal 3 (middle number): 1 + 2 = 3
Step 3: Break middle term up using the two factors that work from steps 1 & 2:

$$x^2 + 3x + 2$$
$$x^2 + 1x + 2x + 2$$

Step 4: Group 1st two and last two terms with parentheses.

$$(x^2 + 1x) + (2x + 2)$$

Step 5: Factor out common terms for both parentheses.

$$x(x + 1) + 2(x + 1)$$

Step 6: Factor out common term in parentheses and put remaining term in parentheses.

$$\mathbf{x(x + 1) + 2(x + 1)}$$

Now we can use this same principle to solve one with a leading coefficient that is not one.

Example 8: Factor

$$2x^2 + 13x + 15$$

$$Step\ 1: 2 \times 15 = 30$$

$$Step\ 2: Factors$$

$$1 \times 30, 2 \times 15, 3 \times 10, 5 \times 6$$

$$Step\ 3: 3 + 10 = 13$$

$$Step\ 4: Break\ apart\ 13x$$

$$2x^2 + 10x + 3x + 15$$

$$Step\ 5: Group\ with\ Parentheses$$

$$(2x^2 + 10x) + (3x + 15)$$

$$Step\ 6: Factor\ out\ what\ is\ in\ common$$

$$2x(x + 5) + 3(x + 5)$$

$$Step\ 7: Factor\ out\ parentheses\ in\ common$$

$$Answer: (x + 5)(2x + 3)$$

**Note that in Step 5, there *always* has to be an addition sign between the two sets of parentheses. My advice to students is that if there is a minus sign, change it to adding a negative. This small step allows the students to put the negative inside the parentheses.
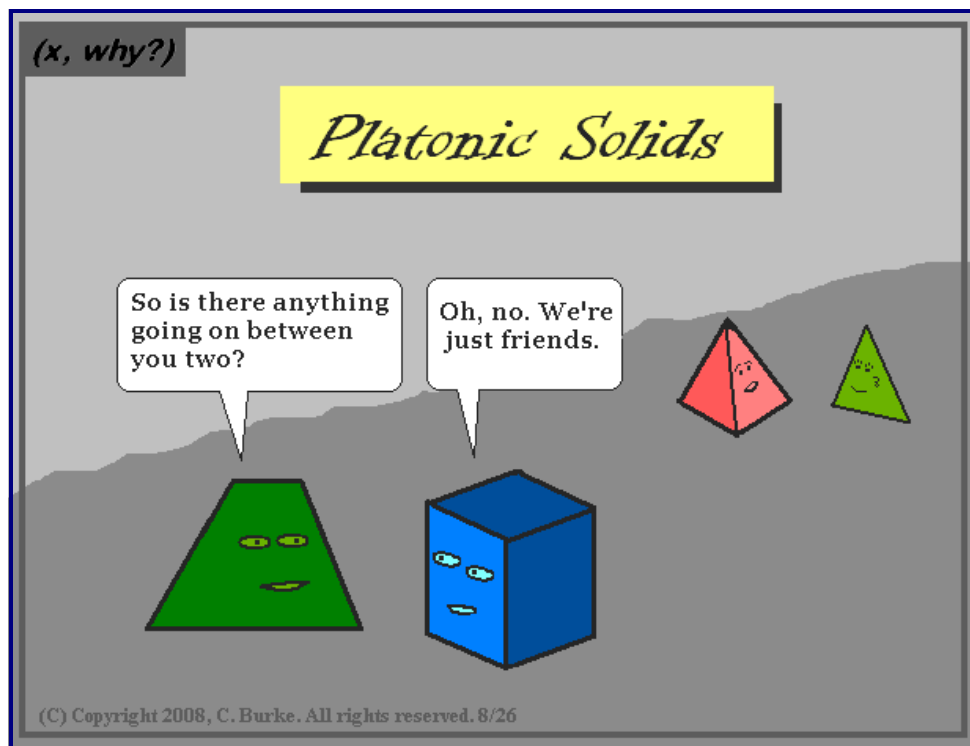
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After the lesson, it's always fun to do some practice on student marker boards. This is a little less formal way of seeing how they are doing without the pressure of having to be perfect for something that will be reflected in their grades. Lastly, I like to show a music video made by another school: http://www1.teachertube.com/viewVideo.php?video_id=223798&title=teach_me_how_to_factor_rap.

The video is funny and contains examples of each of these problems shown here except for the leading coefficient greater than one. It's a great conclusion to a lesson that hopefully isn't as hard as what they thought and might have even turned out to be kind of easy and fun!

References
Teacher Tube: Teach me how to factor rap by Westerville South High School
http://www1.teachertube.com/viewVideo.php?video_id=223798&title=teach_me_how_to_factor_rap

UETCTM News

Creating a Trusting Classroom Environment
By Virginia Powell

Bristol TN City Schools

Grades 7-9

In a classroom discussion this week, the professor made the comment that intelligence is encouraged in students, not by teaching them more, but by creating trusting relationships with them. This reminded me of a series of DVDs I was required to watch while working on my Master's degree in 2008, which were produced by Laureate Education, Inc. Although copyrighted 1997, I believe the content still holds true, and echoes the sentiments of the professor of this class.

Dr. Art Costa, Professor Emeritus at California State University, Sacramento, has created the acronym, "S.P.A.C.E." to identify each of five strategies for establishing trusting relationships within a classroom. He also has a slogan: "Gimme space" (Laureate Education, 1997c).

The first strategy for establishing a trusting relationship is *silence*. During the course of a classroom conversation, for example, a teacher might practice this strategy after a student responds to something he or she has said. The teacher's silence will encourage all students to keep thinking. Another example of implementing silence might be for the teacher to remain silent following a student's question, thereby giving himself or herself think time (Laureate Education, 1997c). The teacher could even say, "Hmm. Let me think about this." The professor of this class has demonstrated this strategy repeatedly throughout this course, encouraging a trusting classroom environment.

Dr. Costa's second strategy for establishing a trusting relationship is *providing data* (Laureate Education, 1997c). As might be expected, this strategy encourages the teacher to provide students with sources to which they can refer for information and examples. In this way, information is provided to the students, but they still must find it for themselves. By providing samples of articles, activities, and materials from which we may select, the professor of this course, once again, consciously or otherwise, demonstrated one of Dr. Costa's strategies for creating a trusting classroom environment. We are not told that we must implement anything. The information is simply provided.

Accepting nonjudgmentally, Dr. Costa's third strategy, has been demonstrated repeatedly through out this course (Laureate Education, 1997c). For example, the professor often paraphrases what his students have just said. He also simply acknowledges students: "Mm-hm, I see." At times, students have even been thanked for having contributed appropriately to the classroom discussion.

Like accepting nonjudgmentally, *clarifying* has been practiced a number of times in this class. The professor has often probed, pursued, and persisted, to ensure that each member of the class has had an opportunity to speak, and to encourage students to provide reasons for their statements.

In my observation, Dr. Costa's fifth and final strategy has been practiced as well during this course. *Empathizing* has been demonstrated when the teacher says he understands students' feelings of anger and frustration when he will not just tell them answers to specific questions.

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By implementing each of these strategies at least once during this course, a feeling of trust has been created within our classroom. An old proverb says, "Silence is golden." That proverb has certainly held true throughout this course. By implementing it, we, the students, feel unhurried, safe, and free to think—all of which are necessary components of a trusting relationship, which, in turn, is crucial for learning. The teacher providing data for students helps them feel better about their presentations, and generates further ideas. His constant clarification, paraphrasing, and listening to students' rationales indicated to students that he is truly listening to them, which is also part of a trusting relationship. These practices have not only built trust, but also stimulated such characteristics as persistence, precision of language and thought, and questioning (Laureate Education, 2007a).

Likewise, an interesting situation arose for me, shortly after having watched this DVD series. Another teacher sent a student to my classroom, to remove him from the disruption he was creating in hers. She and I have agreed that when we send students to one another, we will ignore that student for the time he is in our class. When this student was brought to my class, I directed him to a table, told him what he needed to do, and proceeded with my own class. Through out the class, this student attempted to access my attention, but failed. At this point, I was refusing to acknowledge him.

As fate would have it, this was my last class of the day, so after I dismissed class, my planning period began, leaving this young man and me uninterrupted. It was during this time that I had the unexpected opportunity to incorporate Dr. Costa's S.P.A.C.E. into the situation. "Miss Powell," the frustrated young man asked, "Why wouldn't you answer me?"

"I don't know, D-----," I replied. "Why wouldn't I answer you?" He thought about that for a while, as I straightened up the classroom. I implemented *silence* (Laureate Education, 1997c). After a while, he looked at me with feigned innocence, and said, "I don't know why you wouldn't answer me." He smiled slightly as he told me this little lie. I smiled in return and said, "Well, D-----, you're a smart guy. I bet you'll figure it out," and continued with my tidying up. I did not wish to solve this problem for him (Laureate Education, 1997b). More silence. Extensive silence.

In time, he sighed and asked, "Was it because I kept talking in Mrs. C--------'s class, even when she told me not to?" I honestly had no idea why he had been sent to me, but I assumed that he was now enlightening me. I practiced more silence, giving myself think time before responding to his question (Laureate Education, 1997c). In time, I said, "Well, . . . maybe. What else?" I was clarifying by probing, pursuing, and persisting (Laureate Education, 1997c). He dropped his head and admitted that he had also been kicking the desk of the girl in front of him. I smiled to myself, exulting in this unbidden confession, but I coolly responded, "Mm-hmm." This was my implementation of *accepting nonjudgmentally*, and merely acknowledging him (Laureate Education, 1997c). More silence. Then he added, "And I didn't do my work, either."

By this time, quite some time had passed, and my room was in decent order, so I went and sat at the table with him. "So," I said as I made myself comfortable, "What do you plan to do now?"

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"Well, I really want to get my work done, now, but she probably won't let me," he mumbled. "Okay," I said, "so what do you want to do?" He thought. I somehow managed to restrain myself, and remain silent. Then he said, "Well, I didn't get anything done in your class either. Maybe I could do that now."

"Maybe you could," I agreed. We both just sat there, and looked at each other. I knew he wanted me to tell him what to do, but I pretended that I did not. He quickly grew uncomfortable, looked down at the table, rubbed it with his hands, and said, "Yeah, because I never did finish that Bacon's Rebellion thing for our newspaper."

"Okay," I replied, "So you plan to work on your Bacon's Rebellion article for your group's newspaper?" *Clarifying*.

"Yeah," he said.

"Good," I said simply, as I got up, and went to my desk. He sat at the table and did his work, while I sat at my desk and did mine. During this entire incident, my classroom door had remained wide open, and easily accessible to the monitors in the hallway.

This description is not of an activity. Nor is it of a lesson. It does not even involve a class of students, or a small group of students. It was only one student. I share it, however, as a reflection on the thought provoking statement that intelligence in students is not created by teaching them more. It is encouraged, rather, by creating trusting relationships with them in the classroom. The professor of this course has proceeded to demonstrate his statement. I found his statement interesting because it so closely parallels Dr. Costa's observations and resulting acronym. In my own classrooms, I have experienced the validity of this statement. Even when implemented imperfectly, creating a trusting classroom environment can increase students' learning which, in turn, is proven to be an effective means of positively impacting their overall intelligence.
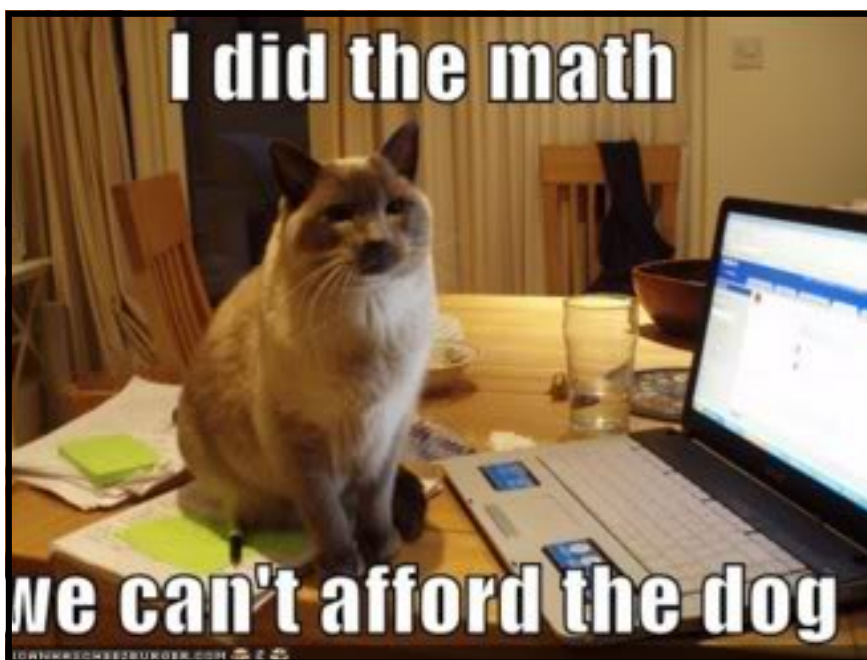
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NCTM News: and Updates:

Priority Recommendations to Implement CCSSM

With support from the National Science Foundation (NSF), three conferences were held in 2011 to identify actions needed to ensure successful implementation of the Common Core State Standards for Mathematics (CCSSM). These conferences dealt respectively with curriculum, professional development, and assessment. Leaders of the conference projects collaborated to produce a common set of priority_r\recommendations spanning the three conference themes. These actions are intended to inform the broad mathematics education community as well as agencies, foundations, and other interested parties regarding important steps to achieve the goals of the CCSSM initiative—namely, to improve mathematics learning opportunities for all students.

I did the math we can't afford the dog

UETCTM News

Submissions Call for 2013 *TCM* Focus Issue

The editorial panel for *Teaching Children Mathematics (TCM)* invites you to submit a manuscript for the 2013 Focus Issue, "Developing and Empowering Teacher Leaders." Articles highlighting ideas about the diverse roles of teacher leaders and their impact on their school communities will provide teachers and teacher educators with resources to inform and improve their educational practice and further their professional growth. You can read the call for submissions on page 439 of your March *TCM* or online. Deadline for manuscript submission is July 31.

Write Now! Right Now!

Readers of *Mathematics Teaching in the Middle School* (*MTMS*) are eager to know what's happening in your classroom. Whether you have something general to share or are writing in response to a particular call that you've seen in print, now is the right time to write for *MTMS*. Share your ideas with fellow educators, see your name in print, and earn some bragging rights. Initial decisions on submissions are usually made within 60 days, and you could see your manuscript in print before the end of 2012. Learn more, or contact the journal editor (mtms@nctm.org) with specific questions. Our readers are our writers, and we want to hear from you!

Seeking Manuscripts for *MT* 2013 Focus Issue

The editorial panel of *Mathematics Teacher* (*MT*) is looking for *your* manuscript for its 2013 Focus Issue, "Beginning Algebra: Teaching Key Concepts." To learn more, see a recent issue of *MT*, or visit online for details. The deadline for submission is May 1.

UETCTM News

Registration is open! *Hurry-* Space is LIMITED for this new event!

July 31-August 2, 2012 Atlanta, Georgia

Algebra Readiness for Every Student: *An NCTM Interactive Institute for grades 3-8 with Extended Online Professional Development*

Professional Development for the Whole Year

You need the right tools to build a strong math foundation for your students— and NCTM's Interactive Institute for grades 3–8 offers the latest strategies to give your students the best preparation for high school, higher education, and beyond. Kick off your experience in Atlanta, where you'll participate in face-to-face activities and network with peers from across the country, and then reinforce, expand, and apply what you learn by participating in online keynote sessions and interactive discussion groups throughout the school year.

Reserve Your Room

All two and a half days of face-to-face activities will take place at the Sheraton Atlanta, so you can stroll out of your room and right into the day's first presentation. A special discounted rate of $159 is available to Institute participants, but you must book your room through NCTM to receive this special rate. The deadline to reserve your room is July 5, 2012, but you must **book your room** through NCTM to receive this special rate.

Registration Information

Register by May 18 to take advantage of our lowest registration rates. **Register online** or Call (877) 557-5329 or (972) 349-5855 with your credit card information. Phone lines are open Monday–Friday, 8 a.m. – 6:30 p.m., Central time. Your registration will include 2 ½ days of interactive professional development from leaders in mathematics education, a welcome reception with your fellow participants, free networking lunch during two days of activities, plus online professional development for the whole year!

Request for Article Submissions

We are always looking for people to contribute articles to our ongoing "Math Perspectives" series. Every month, we would like four submissions for the series: a preservice undergraduate student, a preservice graduate student, a current classroom teacher, and one of our local math coordinators. Each person will voice their opinions, concerns, or observations upon a particular aspect of teaching mathematics. There are no set topics for this series.

Another section will be included in the next issue dedicated to mathematics problems. We are looking for submissions on favorite problems focused on various grade bands.

*If you or someone you know would like to contribute to this column, please contact **Ryan Nivens, Newsletter Editor**.*

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Membership Application

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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. We meet six afternoons per year in various locations across the region. The purpose of UETCTM is to promote excellence in teaching mathematics and to share best practices among mathematics educators.