



UETCTM News

UETCTM Meeting

* * *

Tuesday, March 9, 2010
4:00 p.m. - 6:00 p.m.

* * *

UETCTM Meeting Location:



Science Hill High School
 1509 John Exum Pkwy.
 Johnson City, TN 37604
 423-232-2190

* * *

UETCTM Meeting Agenda:

Refreshments at 4:00 pm in Room 312

Breakout sessions

Elementary School - Problem Solving

Presented by: Jenny Reed
 Cherokee Elementary School

Middle School - Rule of 4 (Numeric, Graphic, Analytic and Communicative)

Presented by: Val Love and Kris Krautkremer
 Kingsport City Schools

High School - TI-Inspire

Presented by: Tina Hill
 Daniel Boone High School

MATH FUN

When finished...

1st digit in number also tells how many 0's are in number

2nd digit in number also tells how many 1's are in number

3rd digit in number also tells how many 2's are in number

.....

10th digit in number tells how many 9's are in number

Examples: 9 0 0 0 0 0 0 0 0 0 0
 8 1 0 0 0 0 0 0 0 1 0

IN THIS ISSUE

UETCTM Meeting Agenda	1
<i>Eastman Scholar Mathletes</i>	2
<i>How Is a Calculator like Fine Wine</i>	3
<i>Identifiable Characteristics of Linear, Quadratic, and Exponential Equations</i>	4
Request for Article Submissions	6
Officers/Contact Information	6
UETCTM Membership Application	7

Eastman Scholar Mathletes

By Christie Lewis

Gray Middle School, Washington County Schools

This summer I had a wonderful opportunity to participate in the Eastman Scholar Mathlete Program. It took some consideration since it was a big commitment (two whole weeks of my summer). Even after agreeing to participate, I admit I spent a great deal of my summer wondering why I did commit myself. This was the greatest professional development experience. I walked away from this program with a great deal of knowledge about the new standards, some wonderful friends, and a great sense of confidence going into the 2009-2010 school year.

Through participation in the program, I made some great friends. As we began this year with new standards, I felt this was valuable. I built relationships with other teachers in my system as well as five surrounding school systems. We participated in team building activities on a daily basis. I feel this has helped strengthen those relationships. We shared our experiences in the classroom. Together our class had over 140 years of teaching experience. I had an opportunity to gain a lot from these other teachers.

The professor, Dr. Ryan Nivens, gave me a new perspective on how to present math topics to my students. He has a wealth of knowledge on math methods. I am so glad I had this

opportunity to work with him. He gave us many things to take back to our classrooms. He gave us the opportunity to practice activities with our colleagues. This practice made me feel comfortable in bringing these activities back to my classroom.

Dr. Nivens showed us many activities, and he gave us many opportunities to work with manipulatives. In addition, he showed many resources that would be valuable in a middle school math classroom.

This is beneficial, as we all know, since many of the new standards are not covered in our textbook. Our school system marked the standards as we did activities. It was amazing how many standards we covered in only two weeks. One of the goals I had set for myself at the first of summer was to become familiar with the new standards. This class and the professor helped me meet that goal.

This class was a valuable experience and what great timing as we began to implement these new standards. If you are ever given the opportunity to participate in the Eastman Scholar Mathletes program, do so without hesitation. You will not regret it. The same is true if you ever have the opportunity to work with Dr. Nivens in any professional development program. ■

The Greatest Professional Development Experience

How Is a Calculator like Fine Wine?

By Kris Krautkremer

Robinson Middle School, Kingsport City Schools

Because both are safe for use in moderation! respect and support each other. Period. At all times.

This hotly debated topic has created on-going dialogue since calculators became affordable for the masses. Go to a math department meeting at any school in the nation and it is likely that there will be teachers who are on both sides of the debate. But why is it a debate and why are there sides? Can't we find a way for this technology to live in our classrooms in a way that benefits our students and promotes learning?



Could it be that some of the reason why we have discord among math teachers about this is that we were the first to elevate it to an issue? Often when we view something as debatable, we can become contentious. Just viewing a topic in this manner seems to evoke a need to make our point or to be right or, for lack of a better word, to win.

As teachers, having this mindset can lead us to not value each other as colleagues and can even create an atmosphere of distrust. Our students sense this lack of unity and it is disconcerting and counterproductive to an environment that promotes learning. Students need to see us

We work in an amazing profession. Very few people can say that they work daily with such highly educated co-workers. We share this distinction with doctors and lawyers, however we knew going into this job that we could do just about anything else with all those years of college and make more money, but we did it anyway. We are a very special group and as such, every member of this unique group deserves the respect of their co-workers.

Allowing anything to come between us is a reduction of who we are as a whole. We change lives. We make a difference. So let's see this topic as a way to discover more about each other and ourselves. Let's listen and have conversations, not debates. Let's allow each other to have different opinions and still uplift and support each other. No one will ever be proven right or wrong here. Nothing is worth losing who we are to one another because long after this topic fades away, we will still be working beside each other in a profession unlike any other and influencing every generation in our nation. ■

Identifiable Characteristics of Linear, Quadratic, and Exponential Equations

By Rodney Roberson

Bulls Gap Middle School, Hawkins County Schools

Students should recognize characteristics of linear, quadratic, and exponential equations without having graphs or function tables to observe patterns. There are numerous characteristics that students can recognize from the equation given that will benefit students in determining which type of equation that will be worked with or investigated. The following paragraphs will discuss some of the recognizable qualities that each equation possesses when the equation is written in “y=” format for linear equations, quadratic equations, and exponential equations.

The first equation to be investigated is the linear equation. After a study on linear equations, students will recognize that an equation in “y=” form that has an independent variable with an exponent of one will be a linear equation. In some instances, students will need to solve the equation for the variable (dependent variable) to make this characteristic more obvious. When the equation is represented in slope-intercept form, the students will notice that any number added or subtracted to the independent variable will represent an intercept of the y-axis. They know that this is where the graph of the equation will cross the axis and that this is a place to start the graph using slope-intercept form. Since this is a linear function, a straight line graph will be pictured in the students’ minds. This will lead

them to recall that a straight line has a constant slope. The slope will be found with the independent variable as the coefficient. When students recognize characteristics of the equation of a linear function, they can apply these to function tables and graphs to identify linear equations from other equations.

The next equation of which students should be able to recognize certain qualities is the quadratic equation. The first noticeable difference from linear equations is that the independent variable will have an exponent of two. This power identifies this equation as having a graph that is a parabola. The coefficient of the squared variable will tell students if the graph will curve up or down. The constant number that is added or subtracted identifies where the graph of the quadratic equation touches the y-axis. The power of two identifies that the equation has a degree of two and students know that x-intercepts or roots can be found by using the quadratic equation. The power also relates to students that there is a turning point in the graph, which is called the vertex.

The last equation that has identifiers that students should be aware of is called the exponential equation. This equation is identified as having a variable as an exponent. The graph of an

Continued on Page 5



Identifiable Characteristics of Linear, Quadratic, and Exponential Equations

Continued from page 4

exponential equation is a curve, which students identify with this equation because of the variable exponent. The equation also tells students that this graph never touches the x-axis but gets closer and closer to the x-axis. Students can also use the equation to make connections between exponential growth and decay models. The base number lets students know if a growth function or a decay function is being presented. If the base number is less than one, a decay function is being investigated; and if the base number is greater than one, a growth function is identified.

Mathematics is filled with problems that have characteristics that students can use to help find solutions. While linear, quadratic, and exponential equations have similar appearances, the characteristics that students identify can guide them to solutions. It is important to make sure students recognize these characteristics so the characteristics can be applied to solve future problems and the students can be successful in higher level math. Recognizing the differences and identifiers of the equations will help students avoid mistakes later in their math endeavors. ■

MATH GAB

Example: Wreck Dane Gull Lores Awl Its
Answer: rectangular solids

- 1) Lie Enough Cement Tree
- 2) I'll Ease Come In Mill Tea Pull
- 3) Oh Door If Hope Orate Shins
- 4) Algae Break Axe Press On
- 5) Pipe Thag Organ The Rim
- 6) Crate Ask Omen Vak Tore
- 7) Burpin' Tick Yeller Pie Sick Door
- 8) Al Gore Is Thumb
- 9) Sea Imp Love Eye Urine Sir

Math Gab Answers:
 (1) line of symmetry (2) least common multiple
 (3) order of operations (4) algebraic expression
 (5) pythagorean theorem (6) greatest common factor
 (7) perpendicular bisector (8) algorithm
 (9) simplify your answer

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 people to write 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 volume dedicated to mathematics problems. We are looking for people to submit favorite problems focused on various grade bands.

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

Newsletter Editor:

Ryan Nivens, Ph.D.

ETSU
Department of Curriculum
and Instruction
Box 70684
Johnson City, TN
37614-1709

nivens@etsu.edu

Assistant Editor:

Amy L. Karlsson

ETSU Graduate Assistant

zall10@goldmail.etsu.edu

Officers of UETCTM for 2009-2010

President:

Val Love

Math Coach
Kingsport City Schools

(423) 943-2704

vlove@k12k.com

President Elect:

Ryan Nivens, Ph.D.

Assistant Professor
Center of Excellence in Mathematics
and Science Education
East Tennessee State University
Johnson City, TN 37614

(423) 439-7529

nivens@etsu.edu

Past President:

Dayna Smithers

Division of Mathematics
Northeast State Technical
Community College
PO Box 246
Blountville, TN 37617

(423) 354-2502

dbsmithers@northeaststate.edu

Secretary:

Kris Krautkremer

Robinson Middle School
Kingsport City Schools

kkrautkremer@k12k.com

Treasurer:

Jerry Whitaker

Mathematics Curriculum
Coordinator
Washington County Schools

(423) 434-4903

whitakerj@wcde.org





UETCTM

Membership Application

Complete and mail to:

Jerry Whitaker
Mathematics Curriculum Coordinator
Washington County Schools
405 W. College Street
Jonesborough, TN 37659

Membership Fee: \$10.00

Make check payable to: UETCTM

Name: _____

Home Address: _____

Home Phone: (_____) _____ - _____

School: _____

School Address: _____

School Phone: (_____) _____ - _____

Email Address: _____