

AMTE-TX

OFFICIAL NEWSLETTER OF ASSOCIATION OF
 MATHEMATICS TEACHER EDUCATORS OF TEXAS
 PUBLISHED QUARTERLY IN SEPTEMBER,
 JANUARY AND MAY



GREETING FROM THE PRESIDENT

Howdy AMTE-TX members,

I hope this finds you enjoying your summer with some time for rest and relaxation. As I reflect on my first year as President of AMTE-TX, I want to recognize Sandi Cooper for mentoring me through my first year and continuing to provide leadership by chairing the Task Force on Elementary Mathematics and the local arrangements committee for the 2012 AMTE conference in Ft. Worth, TX.

This past year we began providing a quarterly newsletter now titled the 'Link: Linking Mathematics Teacher Educators Across Texas'. A special thank you to Barba Patton for faithfully making sure the newsletter comes out three times a year. I encourage you to contribute to the newsletter as Christie Bledsoe has this month. She has written a piece on teaching mathematics for English Language Learners. If you have a short manuscript, updates or announcements please send them to Barba Patton at pattonb@uhv.edu.

The voting for AMTE-TX officers has concluded. The President-elect, Treasurer, and Member at Large will be announced at the business meeting on July 18 at CAMT. Outgoing officers include Sandi Cooper as Past President, Trena Wilkerson as Treasurer, and Suzanne Nesmith as Member at Large. Please join me at the business meeting on July 18 to recognize the outgoing and incoming officers.

The Conference for the Advancement of Mathematics Teaching will be in Grapevine, TX July 18- 20 (Monday through Wednesday). On Monday our organization will be hosting a series of presentations beginning at 8am and ending with our business meeting at the end of the day in Mustang Room 5 at the Gaylord Texan. This edition of the newsletter includes the sessions and times of each presentation.

I look forward to seeing you next month!

Dr. Colleen Eddy
 AMTE-Tx President, 2010-2012

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AMTE-Tx will host a special strand of sessions at the CAMT 2011 Conference in Grapevine, Texas.

These special sessions will focus on issues related to Mathematics Teacher Education.

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**Key Leadership in AMTE
(Texas Representatives!)**

Affiliate Director (Member of AMTE Board of Directors)

Sandi Cooper, Baylor University

Newsletter Editor (Member of AMTE Board of Directors)

Trena Wilkerson, Baylor University

Cindy Schneider from Austin.

No changes to STAAR or EOC requirements were made.

HB 2135 (regular session), signed by the governor, allows students taking a course above their grade level to only take the test for that course. E.g., 8th graders in Algebra 1 only have to take Algebra 1 EOC, not 8th grade STAAR. For accountability, those scores would be aggregated w/ the other 8th Grade scores. The law is "effective immediately." Though signed into law, the rules for this haven't been written and nothing "official" has been posted on TEA's site."

AMTE 2012 in Fort Worth, Texas!

Mark your calendars! Get Ready. July 9-11 at the Renaissance

Worthington Hotel. AMTE 2012 is our chance to show that everything is 'Bigger and Better' in Texas and welcome our fellow AMTE members. This is the 20th Anniversary. Come to the National Conference to join in the celebration and fun. There will be many excellent presentations and nationally recognized mathematics educators will be the keynote speakers. Check the AMTE website at www.amte.net for more details.

If you are interested in serving on the Local Arrangements Committee, please contact Sandi Cooper via e-mail (sandra_cooper@baylor.edu). We will need volunteers for the Registration Committee and Technology Committee, so if you have a specific interest, please e-mail Sandi.



"local arrangement committee needs you ... let's make this an AMTE for all to remember"



THE SLIDERULE

The first mechanical calculating device, based on John Napier's concept of the logarithm, was invented in the early 1600's. By sliding a movable logarithm scaled ruler along one that was held fixed William Oughtred in 1632 was able to determine the product or quotient of two numbers (a procedure developed by Edmund Gunter of Oxford but first published in 1624 by Edmund Wingate, another English mathematician). So Napier provided the concept, Gunter developed the scale, Wingate published, and Oughtred created a prototype of the modern slide rule.

From these early beginnings slide rules were improved through the creation and addition of new scales or made in myriad forms and sizes for numerous usages. Although linear and circular slide rules were considered to be the standard models used in science and engineering fields, the linear slide rule became the symbol for the engineering profession. During my undergraduate years (1961 – 1965) a student's major could be determined by the type of slide rule (or rules) he used or how he carried it. [Yes, the pronoun "he" is used because there were no co-eds at the college I attended.] A Post slide rule carried in the hand, in a pocket or on top of one's books indicated a science major, business majors carried Pickett slide rules with scales for the operations of addition and subtraction, an engineering major often carried a K & E (Keuffel and Esser Company) on his hip in a holster attached to his belt. Any student with holstered slide rules hanging from both hips and a 5-inch rule in his pocket was considered to be one very serious dude, one with an undeclared engineering field or a double major, or one big showoff! If a classmate whipped out a circular slide rule, he (most likely) was a U. S. Air Force enlistee and a very serious student.

Traditionally a high school student in the 1950's did not need a slide rule because formulae and tables of powers and roots or logarithms of numbers were included in all the appropriate sciences and mathematics textbooks. We were trained to use linear interpolation for values not listed in the tables. In the Fall semester of my sophomore (10th grade) the traditional high school curricula changed when the Union of Soviet Socialist Republic launched a 183 pound orb in space with a rocket designed to carry nuclear warheads. By the Fall semester of 1958 Texas high school curricula had been "super-sized" with advanced courses in language arts, mathematics and the sciences. Mathematical electives in solid trigonometry, college algebra, and analytic geometry were offered; along with "souped-up" courses in physics and chemistry.

We needed slide rules! As always a dedicated teacher found a supplier willing to sell Diwa Polylog slide rules (made in Denmark) at a bargain basement price, and the teacher volunteered to teach us how to use them. My slide rule came in a somewhat cheap two-piece cardboard box wrapped in an instruction pamphlet printed in English and Danish (both where Greek to me). The 10-inch "duplex" slide rule was gorgeous and perfectly aligned. Three plastic coated aluminium stripes with a total of 22 finely etched and labeled scales on the front and back with Greek lettered gauge points "pi," "rho-prime," "rho-double prime," and e (natural logarithm base). Brass L-shaped brackets at each end held the outer frame (fixed) scales in alignment with the middle movable (sliding) scale. The gliding actions of its cursor and sliding scale were smooth as silk. High proficiency in using a slide rule requires a certain amount of mental number sense, the applications of algebraic formulae, algebraic procedures, trigonometric functions and identities, and exponential (logarithmic) functions and identities. Concentration and practice are additional requirements. These requirements were "turn-offs" for the general public and have been nullified since 1974 by the modern electronic calculator and computer. The University Inter-scholastic League of Texas dropped slide rule from its list of academic competition in 1980.

Today most slide rules are relegated to museums, to collectors' displays, or desk draws of old engineers.

No doubt you have by now concluded that I am neither an expert on slide rules nor a writer. But I sincerely thank Dr. Barba Patton for giving me the opportunity to express some of my thoughts and slide rule experiences. The World Wide Web has an abundance of information on slide rules with detailed instructions and pictures. To view a picture of a Diwa Polylog go to <http://sliderules.lovett.com/diwa930/diwa930.htm>.

H. Donnell Cole
Mathematics Professor, retired

Thanks to Mr. Cole for this contribution. He taught many students during his tenure at Victoria College, Victoria, Tx.

OUR NEWSLETTER NEEDS A NAME

Send your suggestions to Colleen Eddy, President.
Colleen.Eddy@unt.edu

*"We need a name, be the one
who submits the winning
name"*

The Mathematics
Teacher Journal
Update

Margaret (Peg) Smith of the University of Pittsburgh and first editor of the new MTE journal, together with associate editor Melissa Boston of the University of Duquesne, are working with the newly appointed MTE Editorial Panel to prepare a call for manuscripts in Spring 2011 with the publication of the first issue of the MTE journal planned for 2012. Updates will be posted on the AMTE website and shared via email.

Upcoming dates
to remember

- Nov 10-13... AMATYC AnnualAustin, TX
2012
- Feb. 9-11 AMTE Annual Conference Fort Worth
2013
- Jan 24-26 AMTE Annual ConferenceOrlando, FL.

MATHEMATICS FACULTY
COLLABORATIVE

A number of exciting professional development and research opportunities are available to Texas college and university mathematics and mathematics education faculty through the Mathematics Faculty Collaborative funded by the Texas Higher Education Coordinating Board through its College & Career Readiness Initiative. Faculty receives conference registration and travel support from the Mathematics Faculty Collaborative to participate in these professional development opportunities, and thus far more than 600 faculty from 110 institutions have participated.

The primary goal of the Mathematics Faculty Collaborative is to support university faculty in preparing mathematics teachers who have the knowledge and skills necessary to enable their students to achieve college and career readiness in mathematics. In addition to professional development workshops and symposiums, the Mathematics Faculty Collaborative



also funds mini-grants to university faculty to support work related to college and readiness initiatives and the preparation of mathematics teachers. Thus far approximately 10 professional development events have been offered and 16 mini-grants have been funded.



Future workshops and mini-grant competitions are planned and will be posted on the Faculty Collaborative website at <http://www.txfacultycollaboratives.org/>. The Mathematics Faculty Collaborative is one of four faculty collaboratives funded by THECB. Other Faculty Collaboratives include English Language Arts, Science, and Social Studies, and all four of the Faculty Collaboratives share the website. For additional information about the Mathematics Faculty Collaborative summer and fall offering, visit the website or contact Michelle Berry @ mb54txstate.edu.

GIANT Day continues to be a favorite in Texas A&M - Commerce Mathematics Department's optional professional development for pre-service K-6 and 4-8 certification majors. The PD days, developed and implemented by Lymeda Singleton, occur for two hours twice a month. "A Giant's Head is so Big..." was included in an earlier issue of the AMTE-Tx Newsletter. The two activities included here are also centers on GIANT Day.

GIANT dice ¹

Materials: large inflated double die, regular double die, ruler (USCS or metric)
Compare the measurements of the regular double dice and the giant's double dice.

What inferences could you make about the following? Explain your reasoning.
Height (You, Giant), Circumference of head, Arm length, Hand length (from wrist to end of middle finger), Foot length,

How big would the giant's desk need to be?

If you eat 2000 calories each day, how many calories might the giant need to eat?



¹ Based on "Giant Pencils: Developing Proportional Reasoning" by S. Megan Che, *Teaching Mathematics in the Middle School*, Vol. 14, No. 7, March 2009, pp. 404 - 408

A similar activity using a Giant's Thumb: "Tailor Made," *Proportional Reasoning*, 2000 AIMS Education Foundation, pp. 185 - 186, ISBN 1-881431-78-9

Drawing a GIANT²

Tape a piece of large construction paper in the indicated area (masking tape)

Connect three rubber bands together.

Slip one end of the rubber band train over the tip of a mechanical pencil and position the pencil on the "Point of Perspective." (LEFT HAND)

Slip the other end of the rubber band train over the tip of a second mechanical pencil. (RIGHT HAND)

Stretch the rubber band train so that the first knot (from the point of perspective) is over the picture of "You" below.

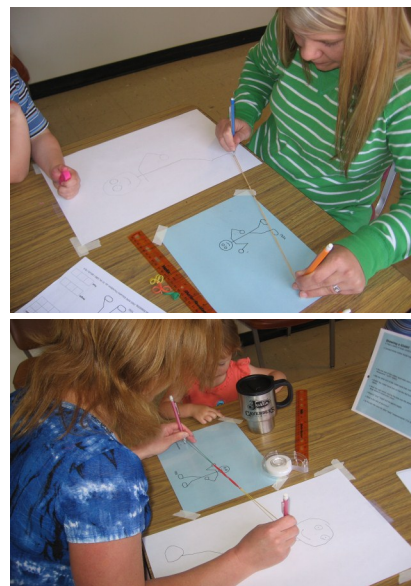
Move the right pencil, tracing the knot over the drawing of you, and creating a drawing of the "GIANT" on the large sheet of construction paper.

Measure "your" height and the giant's height.

What is the ratio of giant/you?

Is the ratio the same for other "body" measurements? (Try head diameter, shoulder width, foot length)

Based on "Rubber Band Enlargement" Erikson, Sheldon. *AIMS Proportional Reasoning Grades 6-9*. 2000 AIMS Educational Foundation, ISBN 1-881417-78-9



AMTE-TX Officers

President: Colleen Eddy

(University of North Texas) 2010-2012

Past President Sandi Cooper

(Baylor) 2010-2011

Secretary Sandra Browning

(University of Houston- Clear Lake) 2010-2012

Treasurer Trena Wilkerson

(Baylor) 2008-2011

Member at Large Suzanne Nesmith

(Baylor) 2008-2011

Member at Large Beth Cory

(Sam Houston) 2009-2012

Member at large Dusty Jones

(Sam Houston) 2010-2013

Newsletter Editor- Barba Patton

University of Houston -Victoria

Notes from the Editor:

Please submit any news you wish to be considered for the newsletter to Dr. Barba Patton, at pattonb@uhv.edu

Articles about exceptionally good lesson for pre-service teachers are welcome.

Let us know if you are promoted, have an article published or make a presentation. Let us share the good news.

Please try to submit your information by August 1, December 1, or April 1 for the newsletters.



MEMBERSHIP

WE now have 55 members .

By joining AMTE-TX., you become a member of a unique group of educators, all interested in the Mathematics Teacher Education in the state of Texas.

Dues: 1-year \$20 3-year \$50; Full-time Student \$10

Members will automatically be added to the AMTE-TX membership.

If you have any questions, please email Trena L. Wilkerson at Trena_Wilkerson@baylor.edu. Please mail the form (found at <http://www.amte-tx.org/index.html>) and a check made payable to AMTE-TX to the following address:

Dr. Trena L. Wilkerson, Treasurer

Department of Curriculum & Instruction

Baylor University

One Bear Place #97314

Waco, TX 76798



EMS Task Force Update

In 2010, AMTE released *Standards for Elementary Mathematics Specialists: A Reference for Teacher Credentialing and Degree Programs* (see <http://www.amte.net/publications>). In response to this document, the leaders of AMTE-Tx organized a Task Force to study the current status of the Master Math Teacher for EC-4, the current structure for certifying Elementary Mathematics Specialists in our state. The Task Force worked this past year to align the Texas Master Math Teacher Standards for EC-4 with the AMTE EMS Standards to determine “gaps” or areas that might need to be strengthened. In addition, this group has attempted to determine the current status of the Master Math Teacher program. After gathering this information, the Task Force will organize a report to share with the membership. The Task Force members include Sandi Cooper, Lymeda Singleton, Trena Wilkerson, Barba Patton, Shea Culpepper, Sandra Browning, and Beth Bos.

See you at CAMT!

Be sure to join us for the AMTE-TX meeting

Framing an Understanding for ELLs

Mrs. Gish, a fifth grade teacher, frequently visits sports events to show support for her students. Since several games had been rained out, Mrs. Gish approached three fifth grade boys at school and asked Ari if he had a makeup game. Jose's and Eric's expressions told us they knew all about *makeup*, and it was for girls! She explained her use of the word *makeup*, and everyone laughed at the discourse. Mrs. Gish's awareness and sensitivity to language differences allowed her to use this misunderstanding as a learning opportunity. These fifth graders had been in programs for English Language Learners (ELL) for six years and spoke excellent English. In fact, both boys will be exiting the programs next year. This minor confusion illustrates the need for supporting ELL students who must overcome the obstacle of language and multiple meanings for common vocabulary. ELL students need support to be successful in the classroom.

As a new teacher I had one ELL eighth grader from Korea who spoke almost no English, and he whizzed through Algebra I with no assistance. I thought math easier for ELL students because math was its own language. The only vocabulary I planned to teach was mathematical, such as *equilateral triangle*, *congruent angles*, *variables*, and *exponents*. However, the ELL population in Texas has grown rapidly, and most districts are encouraging teachers to obtain the ELL certification. ELL students often need support with language to demonstrate proficiency in math. I began to realize mathematical topics were ideal for reinforcing vocabulary for ELL students. Every student deserves the opportunity to be successful, so I began searching for strategies to help ELL students.

Since the ELL population is growing, it is crucial for teacher educators to incorporate ELL strategies for preservice teachers. Sentence frames are one strategy for supporting ELL students (Bresser, Melanese, & Sphar, 2009). Sentence frames are fill-in-the-blanks that include prompts to help students express thoughts and ideas. For example, "I agree with _____'s answer because _____." is a sentence frame which provides the grammatical structure for justifying an answer. Beginner, intermediate, and advanced versions of the sentence frames can provide scaffolding in any content area for students with varying language skills. Another sentence frame is used to support vocabulary. The beginner version is "This is a (square). It has (four sides)." The advanced version incorporates more advanced grammar, "This is a (square), because (it has four equal sides)." Preservice teachers can easily modify the sentence frames for different lessons.

Many students struggle with communicating in mathematics. The National Council for Teachers of Mathematics (NCTM) emphasized oral and written communication in math to reinforce and demonstrate understanding. Additionally, the emphasis on the processes in mathematics requires students to justify answers, but general instructions such as *explain* are often too vague. The sentence frames helped ELL students and native English speakers communicate their ideas in mathematics. The sentence frames were even more effective with lessons involving hands-on manipulatives.

References

Bresser, R., Melanese, K., and Sphar, C. (2009). *Supporting English language learners in math class: Grades 3-5*. Sausalito, CA: Math Solutions Publications.

Our thanks to Christie Bledsoe for sharing this. Christie is an Assistant Professor at the University of Mary Hardin-Baylor where she teaches math/science strategies and graduate research classes.