Texas Mathematics Teacher

Volume LVI Issue 2 Fall 2009

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in a garage!

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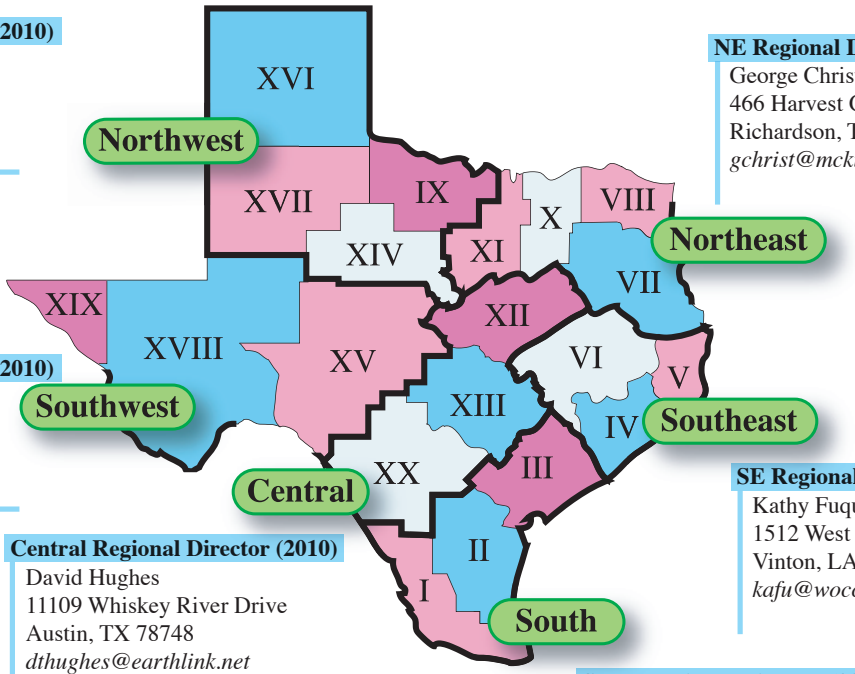

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TBA

Texas Mathematics Teacher

A PUBLICATION OF THE TEXAS COUNCIL OF TEACHERS OF MATHEMATICS

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Cover Photo by Meg Hunicke-Smith, 2nd grade, Eanes ISD.

Articles

Features

Departments

TCTM Applications

All applications (including membership) are now available online at the TCTM website <*www.tctmonline.net*>.

Texas Mathematics Teacher (ISSN# 0277-030X), the official journal of the Texas Council of Teachers of Mathematics (TCTM), is published in the fall and spring. Editorial correspondence should be mailed or e-mailed to the editor.

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Call For Articles

Texas Mathematics Teacher seeks articles on issues of interest to mathematics educators, especially K-12 classroom teachers in Texas. All readers are encouraged to contribute articles and opinions for any section of the journal.

Manuscripts, including tables and figures, should be typed in Microsoft Word and submitted electronically as an e-mail attachment to the editor with a copy to the director. No author identification should appear on or in the manuscript. A cover letter containing author's name, address, affiliations, phone, e-mail address, and the article's intended audience should be included. After refereeing, authors will be notified of a publication decision.

Teachers are encouraged to submit articles for ***Voices From the Classroom,*** including inspirational stories, exemplary lessons, or management tools. If submitting a lesson, it should include identification of the appropriate grade level and any prerequisites. Items for ***Lone Star News*** include, but are not limited to, NCTM affiliated group announcements, advertisements of upcoming professional meetings, and member updates.

Businesses interested in placing an **advertisement** for mathematics materials should contact Mary Alice Hatchett. Advertisements do not imply endorsement by TCTM's board, editorial staff or members.

Deadline for submissions: Fall, July 1 Spring, January 1

Letter from the President

Dear TCTM Members,

Welcome to a great new school year! For those of you who renewed your TCTM membership, welcome back to another year with TCTM, and for those of you who just joined us as new members at CAMT this year in Houston, welcome to one of the largest mathematics teachers' organizations in North America. The Board of Directors and I look forward to working with you this year to promote mathematics education in Texas.

Thinking about the 2009-2010 school year, we have a lot to celebrate, and a lot to consider as we move through another year with the children now in our mathematics classrooms.

I know that many of you are starting in new positions, whether it is your first teaching position or you made the decision to begin the next phase of your career at a new school. This year, I join you in a new beginning, having become the new Director of Mathematics and Science in Pearland ISD. I am enjoying both working with outstanding people and the thrill of learning a new job. I am a learner at heart, and tend to look for opportunities to learn new perspectives and ways of doing things. I'm sure that once the dust settles in your new position, you'll agree.

First of all, let's celebrate! Last year, Texas students did better than ever in their mathematics classrooms. Not only did the number of Recognized and Exemplary schools increase, but we got some good news on the college entrance exam front. Texas students showed continuous increases in mathematics and science on the ACT, while their peers across the nation saw their scores remain the same or decrease. In a recent study, the American Institutes for Research equated each state's mean National Assessment of Educational Progress (NAEP) scores with The International Mathematics and Science Study (TIMSS) scores. They found that at Grade 4 and Grade 8 Mathematics, Texas students scored higher than the United States national average, and outperformed countries such as Germany and Malaysia. It seems that the data reflects what I know to be true – in Texas, we are doing more with less, and for more students than ever. Congratulations to each and every one of you for helping to make this a reality!

There are also a lot of changes afoot. The Texas Legislature adjourned last spring after passing several bills that will affect education- both in the short term and the long term. Right now, high school teachers are living the reality of changing graduation plans. This year's juniors are the first class to graduate on the "4 by 4" plan – the graduation plan requiring them to have 4 years of all 4 core subject areas, including mathematics and science. This year's 7th graders are the first to enter high school with an End-of-Course testing graduation requirement.

Elementary and middle school principals were left scrambling for resources after the loss of Accelerated Mathematics Instruction – or AMI – funds. Teachers and students will feel the effects of that loss of important money in their classrooms this year and next summer. On an exciting note, the Texas Education Agency unveiled their new Algebra Readiness Grant program to provide valuable resources for middle schools to prepare their students for success in Algebra 1. These two programs serve as reminders to us all that as educational priorities evolve at the policy level, funding sources shift, impacting classroom practices. But Texas teachers are resilient – we will always find a way to meet the needs of the children with whom with interact every day.

Best wishes on a fabulous 2009-2010 school year!

Paul Gray
TCTM President 2008-2010

Lone Star News

Affiliate Groups

These are local affiliated groups in Texas. If you are actively involved with them, please send future meeting and conference information to Cynthia Schneider at <*cschneider@mail.utexas.edu*> so we may publicize your events. Contact information for each group is available on the NCTM website, <*www.nctm.org*>. Contact information for regional directors is located on the inside front cover.

SOUTHWEST REGION: *Service Centers 15, 18, 19*

Rita Tellez and Veronica Hernandez, Co-Regional Directors

Greater El Paso CTM
Holds an annual fall conference. Contact: <*gepctm@yahoo.com*> or see <*www.math.utep.edu/Faculty/lesser/gepctm.html*>

SOUTHEAST REGION: *Service Centers 4, 5, 6*

Kathy Fuqua, Regional Director

Fort Bend CTM
Holds a short meeting in August, a fall mini-conference, a spring mini-conference and an end-of-year banquet to serve the districts of Alief, Fort Bend, Katy, and Stafford. Contact: Alena McClanahan, <*alena.mcclanahan@fortbend.k12.tx.us*>.

NORTHWEST REGION: *Service Centers 9, 14, 16, 17*

Nita Keesee and Leslie Patrick, Co-Regional Directors

Big Country CTM & Science
Will hold their 2010 Big Country Mathematics, Science, and Technology Symposium on February 6, 2010, at the Region 14 ESC. Contact: Leslie Koske, <*lkoske@esc14.net*> or 325-675-8661.

Texas South Plains CTM
Sixteenth Annual Panhandle Area Mathematics and Science Conference was held in September, 2009, in Canyon, TX. Contact: Gilberto Antunez, <*gantunez@mail.wtamu.edu*>, or see <*www.wtamu.edu/academic/ess/edu/*> for information on 2010.

NORTHEAST REGION: *Service Centers 7, 8, 10, 11*

George Christ, Regional Director

East Texas CTM
For current information contact the president, Robin McClaran, at <*robinmc@etbu.edu*>.

Red River CTM
The STEAM (Successfully Training Educators As Mathematicians) Conference was held October 9, 2009, at the campuses of Texas A&M University-Texarkana and Texarkana College, Contact: Debra Walsh, <*dwalsh@redwater.esc8.net*> or Susie Howdeshell, <*showdeshell@pgisd.net*> or see <*www.tamut.edu/~rrcmath/*>.

Greater Dallas CTM
Holds two mathematics contests (W. K. McNabb Mathematics Contests) for students in grades 7 - 12 - one in the fall (early Nov.) and one in the spring (early April). A banquet in May is held for the winners. Contact: Tom Butts, <*tbutts@utdallas.edu*> .

SOUTH TEXAS REGION: *Service Centers 1, 2, 3*

Barba Patton, Regional Director

Coastal CTM
Will hold their annual conference on June 18, 2010, in Corpus Christi. Contact: Elaine Young, <*eyoung@sci.tamucc.edu*>, or see <*www.cctmonline.org*>.

CTM @ Texas A&M University at Corpus Christi (Student Affiliate)

CTM @ Texas A&M University at Kingsville (Student Affiliate)

Rio Grande Valley CTM
The 43rd annual conference will be held on Sunday November 21, 2009, at the University of Texas - Pan American, Edinburg, Texas, from 8:00 to 4:00 p.m. Contact: Nancy Trapp <*ntrapp@vtxb.com*> or see <*www.rgvctm.org*> .

CENTRAL TEXAS REGION: *Service Centers 12, 13, 20*

David Hughes, Regional Director

Austin Area CTM
The Spring meeting will be held in May 2010. Contact: Pam Johnson, <*pjohnso2@austinisd.org*>, or see <*www.aactm.org*>.

Alamo District CTM
Normally holds a fall and spring conference. Contact: Kathy Mittag, <*kmittag@utsa.edu*>, or see <*www.adctm.net*>.

Central Texas CTM
CTCTM will hold a spring mini-conference in Febuary 2010, in Waco at the Region 12 Service Center. Contact: Rachelle Meyer <*Rachelle_Meyer@baylor.edu*> or see <*www.baylor.edu/soe/ctctm*>.

STATEWIDE

Texas Association of Supervisors of Mathematics (TASM) meets in the fall and spring in Austin. Membership is required to register for this meeting. For membership and registration information, please see <*www.tasmonline.net*>.

The Association of Mathematics Teacher Educators of Texas (AMTE-TX) will hold their annual meeting at CAMT 2009. For more information contact the current president Sandi Cooper at <*Sandra_Cooper@baylor.edu*>.

NATIONAL

National Council of Teachers of Mathematics (NCTM) Annual Meeting and Exposition will be held in San Diego, CA on April 21–24, 2010.

TEA Talks

Hot News

For additional information, refer to the websites listed

Curriculum Updates

- **2009-2010 Mathematics Requirements**
  This year's high school seniors graduate under the required Recommended High School Program (RHSP), which includes Algebra I, Geometry, and Algebra II.

  This year's high school juniors are the first class graduating under the required 4 X 4 RHSP, which includes Algebra I, Geometry, Algebra II, and a fourth math credit. This math credit can be Mathematical Models with Applications (MMA) if it is taken prior to Algebra II. For the list of courses approved to serve as a fourth math credit for the RHSP and Distinguished Achievement Program (DAP), please visit *<http://ritter.tea.state.tx.us/rules/tac/chapter074/ch074f.html>*. For more information on the 4 X 4 graduation requirements, please see the Frequently Asked Questions (FAQ) document posted on the TEA Curriculum website at *<http://www.tea.state.tx.us/curriculum/fourbyfour.html>*.

  This year's seventh graders are the first class to have End of Course (EOC) graduation requirements when they enter high school in 2011-2012. Details regarding the transition to EOCs are currently being determined and will be shared as soon as they are available.

  House Bill 3 (HB3) did not change the number of credits required for each degree program or the 4 X 4 requirements of the RHSP and DAP for students who enter high school in 2007-2008 and thereafter but did create additional flexibility in the choice of electives for Texas students on the RHSP. For more information about HB 3 Graduation Requirements, please visit *<http://www.tea.state.tx.us/graduation.aspx>*.

- **Additional Courses Considered for 4th Math Credit**
  New Career and Technical Education courses are being considered for use as a fourth math credit by the State Board of Education (SBOE). The courses being considered are Mathematical Applications in Agriculture, Food, and Natural Resources; Statistics and Risk Management; and Engineering Mathematics. These considerations along with other proposed changes to 19 TAC Chapter 74, Curriculum Requirements, Subchapter E, Graduation Requirements, Beginning with School Year 2004-2005, and Subchapter F, Graduation Requirements, Beginning with School Year 2007-2008 are scheduled for first reading and filing authority at the November SBOE meeting (November 18-20, 2009).

- **Student Success Initiative**
  In 2007, funding for the Accelerated Reading Instruction/Accelerated Math Instruction (ARI/AMI), and Intensive Reading Instruction/Intensive Math Instruction (IRI/IMI) grants was provided through an appropriations rider for the amount of $123,354,495 per annum (GAA, 80th Texas Legislature, Article III, Rider 44).

  This formula funding has been replaced by a new rider for the amount of $151,999,650 per annum which details a multi-component strategic approach for supporting students and educators (GAA, 81st Texas Legislature, Article III, Rider 42).

  The strategic approach for supporting students and educators includes comprehensive planning for cohesion and unity, targeted support activities, the creation and provision of high-quality professional development, and specific intervention grant programs.

  Some of the targeted support activities include a supplemental diagnostic screening instrument for students who do not perform at proficient levels in math in grades 5 – 8, technology-based supplementary math instructional programs, targeted technical assistance to specifically address college readiness, school leadership academies, and college preparation assessment instruments.

  High quality and consistent professional development is being developed for educators in various disciplines and campus leaders. Math Academies for grade 5 – 8 teachers will be delivered in summer 2010. Professional development to prepare teachers and campus leaders for transition to end-of-course assessments will be delivered in summer 2010 for Algebra I and summer 2011 for Algebra II and Geometry.

  To assist districts with a transition year following the elimination of the Accelerated Reading Instruction/Accelerated Math Instruction (ARI/AMI) grant program, funding in the amount of $44,240,726 has been allocated for Student Success Initiative Grants (SSIG). Applicant districts will receive the funds as formula grants. The amount of each district's award will be determined by the number of students who failed to meet satisfactory performance on the first administration of the 2009 Texas Assessment of Knowledge and Skills (TAKS) Reading in grade 3 and TAKS Math in grade 5. Based on FY 2010 funding levels, districts can expect to receive approximately one-third of last year's ARI/AMI allocations. Correspondence on the SSIG program has been posted at *<http://ritter.tea.state.tx.us/taa/curr100109.html>*.

- **Texas Math and Science Diagnostic System (TMSDS)**
  The Texas Mathematics and Science Diagnostic System (TMSDS) is managed by CORE K12, a division of CORE ECS. TMSDS is provided at no cost to Texas school districts and charter schools.

  TMSDS is a web-based TEKS-aligned diagnostic assessment system that covers grades 3 – 8 in mathematics and science as well as Algebra I, Geometry, Algebra II, Integrated Physics and Chemistry, Biology, Chemistry, and Physics.

  Instructions for enrolling in TMSDS can be found at www.TMSDS.org. Please contact your regional education service center for training opportunities and technical assistance.

- **College Readiness Program**
  This program was created under Article 5, HB 1. "Public school educators and faculty of institutions of higher learning shall work within subject-specific vertical teams to address high school and college readiness curriculum issues." Vertical teams (VT) of 10 members were created in each core subject area. The teams included two co-chairs (one from public education and one from higher education).

  In Phase I of this program, the VT established the College and

Career Readiness Standards (CCRS). In Phase II, the charge of the VT was to evaluate whether secondary TEKS prepare students for college-level course work and to recommend how those TEKS could be aligned to the CCRS.

In Phase III, teams will develop instructional strategies to help prepare students for college-level work and develop minimum standards for curricula, professional development materials, and online support materials

The May 2008 SBOE meeting included a discussion item pertaining to a limited scope review of the secondary math TEKS to incorporate the math CCRS. The SBOE submitted nominations to create a math TEKS review committee charged with recommending additions to the secondary math TEKS to address the CCRS.

The revised secondary math TEKS incorporating the CCRS were adopted by the SBOE in January 2009 and are currently being implemented. Math TEKS professional development will be delivered in the summer of 2010. Math college readiness online student materials will be available in the fall of 2010.

For more information about the College Readiness Program, contact Joseph Kulhanek, Director of the College Readiness Program, at <*Joseph.kulhanek@tea.state.tx.us*>

- **Texas Virtual School Network (TxVSN)**

The Texas Virtual School Network (TxVSN) was authorized by the Texas Legislature in 2007 to provide online courses to students in Texas.

The TxVSN is a supplemental rather than diploma-granting program. Online courses will supplement the services the district currently offers students, based on students' academic needs. The home (receiving) district will continue to award credits and diplomas. The TxVSN partners with the home district to meet student needs.

As an alternative to traditional classroom teaching, online courses are proving especially beneficial to reach students across the state—wherever they may live—who need additional or advanced courses; an opportunity to retake courses for graduation purposes; options to courses currently offered in their schools; or increased access to courses because of physical disabilities or health issues

Some benefits for Texas districts include assistance with teacher shortages; expansion of course offerings options; increased availability of AP courses; and service to students in alternative school settings.

For more information, send questions to the TxVSN mailbox at <*txvsn@tea.state.tx.us*>, or visit the website at <*www.txvsn.org*>.

Assessment Updates

Changes to the Assessment Program – House Bill 3

- TAKS grade 3 reading has been moved to the last week of April (same week as math).
- LAT administrations of TAKS grade 5 and 8 math and reading have been moved into mid May to coincide with the first retest administration.
- Eliminated Spanish TAKS grade 6 math and reading starting in 2009-2010.
- Eliminated TAAS exit level retests starting in October 2009 for students who have not passed all 3 subject-area tests.
- TAKS exit level assessments will be administered to students needing TAAS retest with adjusted passing standards for students whose graduation requirement is TAAS or TEAMS.
- New assessment program for grades 3-8 beginning in spring 2012.

End-of-Course Assessments (EOC)

- Legislation requires the phase out of high school TAKS and replaces it with EOC assessments in Algebra I, Geometry, Algebra II, English I, English II, English III, Biology, Chemistry, Physics, U.S. History, World History, and World Geography.
- Freshman class of 2011-2012 is first group to have EOC as a graduation requirement (current 7th graders).
- In order to graduate, a student must achieve a cumulative score that is at least equal to the product of the number of EOC assessments taken in that content area and a scale score that indicates satisfactory performance.
- A student's score on an EOC assessment will be worth 15% of the student's final grade for that course.
- All 12 EOC assessments will be operational in 2011-2012.
- Algebra I – administered in current form since 2005; offered online only in spring 2010; offered in paper and online in spring 2011.
- Geometry – field tested in spring 2007; operational since spring 2008; offered in paper and online in spring 2010.
- Algebra II – field tested in paper and online in spring 2010; operational beginning spring 2011 (paper and online).
- Currently districts may volunteer at the student, teacher, campus, or district level for field tests and operational tests.
- Three week testing window for spring 2010:
  May 3-21 – English I and Algebra II field tests;
  May 10-28 – Algebra I, geometry, biology, chemistry, physics, world geography, and U.S. history operational tests.

Summary reports available at
<http://www.tea.state.tx.us/index3.aspx?id=3631&menu_id3=793#eoc>

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Math for Real: Board Feet

Timber companies want to know the amount of usable wood that can be obtained from a tree. The amount of lumber (usable wood) is a volume measured in units called *board feet*. One board foot contains 144 cubic inches of sawed lumber, or the equivalent of a board 1 inch thick, 12 inches wide, and 12 inches long.

Several methods are used to calculate board feet, which must, by necessity, be estimates. It is assumed that some of the tree will be unusable because boards must be straight and a single measure for the diameter is given instead of taking into account the way the cut tree trunk tapers (the diameter at one end of the log is smaller than at the other end). Another factor is the width of the saw blade because wood is actually lost by cutting it (just think of the pile of sawdust on the floor after cutting).

One of the most common methods of estimating board feet is called the Doyle rule:

$$\text{board feet} = (d - 4)^2 \times \left(\frac{l}{16}\right)$$

Another common method is the International rule, which assumes that the log is 8 feet long:

$$\text{board feet} = 0.44d^2 - 1.20d - 0.3$$

Note that d = the diameter of the small end of the cut section measured inside the bark (in inches) and l = the length in feet.

PROBLEMS

1. A log is 8 feet long. One end has a diameter that measures 12 inches; the other end has a diameter of 16 inches. Calculate the amount of board feet using both the Doyle rule and the International rule.

2. A log is 10 feet long. Its small end has a diameter of 1.2 feet; the large end has a diameter of 1.5 feet. Calculate the board feet using the Doyle rule.

3. How can you use the International rule for the log in question 2? Calculate the board feet using your answer.

4. The International rule is considered to be more accurate. Why might someone use the Doyle rule instead?

5. A logger is considering cutting a tree. He estimates the diameter to be 15 inches. He knows this tree is only worth cutting if he can produce at least 74 board feet. How tall must the tree be if the logger is to cut it? (Use the Doyle rule.)

Challenge

The actual volume of a log is found by using the formula for a truncated cone (a cone with the tip cut off). This formula is

$$V = \pi (r^2 + rR + R^2) \times \frac{h}{3}$$

where r = the measure of the small end radius in inches, R = the measure of the large end radius in inches, and h = the height in inches. This gives the volume in cubic inches. To convert from cubic inches to board feet, divide by 144 (1 cubic board foot).

6. What is the volume of the tree in problem 1?

7. What is the amount of log that was not usable? What is the percent of the log that was not usable?

Resources: < *mathforum.org/library/drmath/view/62471.html; extension.missouri.edu/publications/DisplayPub.aspx?P=G5050* >

The solutions are appended to the online version of "Math for Real" at *www.nctm.org/mtms.* and on the next page of this publication.

This department of *Mathematics Teaching in the Middle School* highlights math concepts in the context of problem solving in the real world. Readers are encouraged to submit ideas or work with someone they know to create a manuscript. Submit your ideas to *mtms@nctm.org*.

Solutions to Math for Real: Board Feet

1. Doyle rule: Use $d = 12$, which is the smaller diameter, and $l = 8$ to find:

$$V = (12 - 4)^2 \text{ x } {}^{8}\!/_{16}$$
$$= (8)^2 \text{ x } {}^{1}\!/_{2}$$
$$= 64 \text{ x } {}^{1}\!/_{2}$$
$$= 34 \text{ borad feet}$$

International rule: Use $d = 12$ and find:

$$V = 0.44(12)^2 - 1.20(12) - 0.3$$
$$= 0.44(144) - (14.4) - 0.3$$
$$= 63.36 - 14.4 - 0.3$$
$$= 48.66 \text{ board feet}$$

2. Since the smaller diameter is 1.2 feet, we must convert it to inches, which is 1.2(12) = 14.4 inches as a value for d. Use $l = 10$.

$$V = (14.4 - 4)^2 \text{ x } {}^{10}\!/_{16}$$
$$= (10.4)^2 \text{ x } {}^{5}\!/_{8}$$
$$= 108.16 \text{ x } {}^{5}\!/_{8}$$
$$= 67.6 \text{ board feet}$$

3. The International rule requires an 8 foot log. For an 10 foot log, find the board feet for an 8 feet log, multiply the answer by 10/8, and convert the length as a linear measure:

$$V = 0.44(14.4)^2 - 1.20(14.4) - 0.3$$
$$= 0.44(207.36) - 17.28 - 0.3$$
$$= 91.2384 - 16.98$$
$$\approx 74.26 \text{ board feet}$$

for an 8 foot log. Then 74.26 x (10/8) = 92.825 board feet.

4. Answers will vary. The International rule is limiting, because it only applies to an 8 foot log. Since the Doyle rule takes the length of the log into consideration, it may be preferable.

5. Substitute the diameter, 15 inches, and the number of board feet that is the goal, 74, into the formula and find the height as the length of the log, as follows:

$$74 = (15 - 4)^2 \text{ x } {}^{l}\!/_{16}$$
$$74 = 121 \text{ x } {}^{l}\!/_{16}$$
$$74 = \frac{121}{16} l$$
$$\frac{16}{121} \text{ x } 74 = l$$
$$\frac{1184}{121} = l$$

So $l \approx 9.785$ feet, which should be the minimum height of the tree.

Challenge

6. Using the formula and the given diameters of 12 and 16, half the diameters provide the radii for use in the formula:

$$V = \pi(6^2 + 6 \text{ x } 8 + 8^2) \text{ x } \frac{8 \text{ x } 12}{3}$$
$$= \pi(36 + 48 + 64) \text{ x } \frac{96}{3}$$
$$= \pi \text{ x } 148 \text{ x } 32$$
$$\approx 14{,}878.6$$

7. Remember that a board foot is a cubic unit of 12 x 12 x 1 inches, so 1 board foot = 144 cubic inches. The volume of the log is 14,878.6/144 ≈ 103.3 board feet. Since, by the International rule, this log provides 48.66 board feet, 103.3 – 48.66 ≈ 54.6 board feet was unused. This is 54.6/103.3 ≈ 53% wasted wood.

Families Ask: Cooperative Learning

My child is frequently asked to work with two to three other students in her math class. She says she works harder than the others. Why should she be working with other students? Shouldn't each student do his or her own work?

Group work is an instructional strategy that allows teachers to address both intellectual and social learning goals. If used effectively, students with various academic skills can work together on a task that might otherwise be too complex for them to complete individually. Group work also allows students to develop the skills necessary for success in high school and beyond. Research has shown that explaining one's understanding of a concept is helpful for concept attainment. Hearing different strategies when approaching a task can help students reexamine their own thinking and consider different views that may be useful in solving other problems.

Providing venues for students to hear, speak, and talk within a mathematics context is important for all students (NCTM 2000). This instructional strategy can be beneficial, especially for English language learning (ELL) students, so that they get the opportunity to hear academic language modeled by group members. It is crucial that ELLs understand task requirements, realize how to get necessary resources, and process specific mathematics vocabulary before working on a group task.

Having students work in groups can be challenging at the middle school level, particularly if they have not had an opportunity to do so in elementary school. However, this practice can be very effective with students at this age. Students at the middle school level place a great deal of importance on being part of the group. It also enables them to learn that they can work, as well as socialize, with their peers.

Making It Work

Successful group work involves three key elements:

1. Selecting an appropriate task
2. Monitoring the group's process
3. Assessing individual understanding

Selecting the task is critical. Remember that not all math activities are appropriate for group work.

It is important to monitor the process when using cooperative groups. Although students are working, teachers can circulate among groups and observe and record student interactions. Asking students to write in a math journal or notebook is a way to assess individual understanding. Some possible writing prompts include these:

- Write a letter to someone in another class explaining why the group's strategy worked.
- What would happen if you changed the variable to _____?
- How would you rate your group's interaction on a scale of 1 to 10, with 10 demonstrating everyone's involvement?
- What was the hardest part about working in a group on this task? What was the easiest part?

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Edited by Grace Dávila Coates, *gdc@prado.com*, Berkeley, California, and **Karen Mayfield**, *mayfield@uclink.berkeley*.edu.

"Families Ask" in *Mathematics Teaching in the Middle School* responds to questions asked about current issues in mathematics education. It includes a "Families Ask Take-Home Page" to share with parents, caretakers, and other interested members of the community

Families often ask a question such as this:

"My child is frequently asked to work with two to three other students in her math class. She says she works harder than the others. Why should she be working with other students? Why shouldn't each student do his or her own work?"

Your questions and comment contain three key discussion points:

1. "Why shouldn't each student do his or her own work?"
2. "Why should she be working with other students?"
3. "She says she works harder than the others."

Together, these elements require a multilayered response that addresses the reasons we engage in cooperative group learning as well as what has been described as "The dilemma of group work" (Cohen 1986).

"Why shouldn't each student do his or her own work?"

Let's consider what occurs when students do their own work. This common form of classroom practice involves students listening to a teacher lecture, viewing some examples, receiving an assignment, and duplicating a mathematical process. The ideal end result is that students obtain the teacher's expected outcome or answers. This ritual is usually followed by a test, quiz, or exam that measures the student's level of mastery. At times, this method is the best model to employ for a particular skill. However, it would not be the ideal time to have students work in groups because it leaves little room for creativity, student dialogue, or higher-level thinking, which are valued more and more in the mathematics classroom.

"Why should she be working with other students?"

This can, in a sense, be translated, "Why should any of us work with others?" The first consideration is that there are social benefits when students work with peers from a variety of cultures, who speak different languages, and who have different abilities (Slavin 1996).

Studies indicate a higher on-task rate when students work cooperatively as compared with individual seatwork (Ahmadjian 1980). Effective cooperative groups result in significant learning and achievement. Group work is an exemplary method for increasing conceptual understanding, applying critical thinking, and solving problems creatively. It is also an excellent vehicle for the improved use of more academic language during student dialogue. When students communicate with one another about best approaches, strategies, or solutions, they are engaged in higher levels of thinking. They are analyzing and synthesizing information from various sources and using language to create common understandings about the math at hand. As they discuss math, they develop fluency in the academic vocabulary of the math they are exploring.

"She says she works harder than the others"

Some students believe that they work harder than other students in the assigned group, which is part of Cohen's "dilemma of group work." Many of us who have worked on group projects can attest to the fact that some students participate more than others in completing group tasks.

In the classroom, although everyone in the group will not contribute equally, wide gaps should not occur in the level of participation by any one member. It is possible that the class needed more preparation for group work. Convey your concern to her teacher so that it can be addressed in the classroom. Since students in middle school are sensitive about being singled out, ask that the issue be addressed as a general concern. Other students may be feeling the same way.

Learning is a social endeavor. When students are prepared and participate consistently in group work, there are deep social gains. Group work brings together students who might not interact with one another otherwise. It also teaches the necessary skill of working with others, which will continue as the student moves through school and into the workforce.

Group work is just one tool that can be applied in the classroom. It is also true that some assignments are not suitable for work in groups. However, when a class is prepared to work together, and the task or project is engaging and appropriately complex, your daughter will have the opportunity to learn from her peers, share expertise and knowledge with them, and stretch her math understanding.

FEATURE

2009 TCTM Award Recipients

Leadership and Achievement Awards

Each year since 1995, TCTM has accepted nominations for two awards for leaders in our professional community. The TCTM Leadership Award is presented to a TCTM member who is nominated by a TCTM affiliate. The second award, the E. Glenadine Gibb Achievement Award, is presented to someone nominated by a TCTM member. The following individuals have been honored and we wish to acknowledge their former and ongoing contributions this year in the leader spotlight. **If you wish to nominate someone for 2010, please see the forms on our website**.

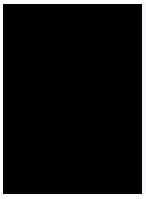
Our prior awardees are:

Year	Leadership(local/state)	Gibb (state/national)
1995	Mary Alice Hatchett	Iris Carl
1996	Betty Forte	Cathy Seeley
1997	Diane McGowan	Pam Chandler
1998	----	----
1999	Linda Shaub	Eva Gates
2000	Lloy Lizcano	Bill Hopkins
2001	Susan Hull	Pam Alexander
2002	Janie Schielack	Judy Kelley
2003	Bonnie McNemar	Dinah Chancellor
2004	Dixie Ross	Jacqueline Weilmuenster
2005	Barbara "Basia" Hall	Barrie Madison
2006	Nancy Trapp	Lois Gordon Moseley
2007	Kathy Hale	Cynthia L. Schneider
2008	Jim Wohlgeheagen	Juanita Copley

FEATURE

2009 Mathematics Specialist Scholarship Award

Six Texas students were awarded the $2000 TCTM Mathematics Specialist Scholarship for 2009-10.



Meagan Hensley

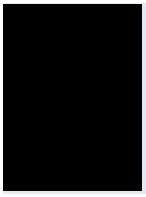
Stephen F. Austin State University
Region 7

Ruth Knowles

University of Texas at Arlington
Region 11

Julie Mooneyham

Texas Woman's University
Region 11



Abby Peters

Texas Woman's University
Region 11

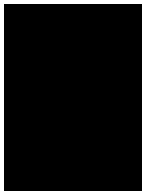
Luz Villa

University of Texas at El Paso
Region 19

Bianca Rodriguez

University of Texas at San Antonio
Region 20

2009 Leadership Award



Jane Silvey

The Texas Council of Teachers of Mathematics (TCTM) is proud to announce that it has chosen to honor Jane Silvey, of Region 7 Education Service Center, with its annual TCTM Leadership Award. The TCTM Leadership Award recognizes outstanding service at the local and/or state level in the field of mathematics education.

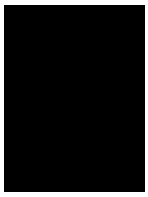
"I have worked with Jane for a number of years," said Paul Gray, TCTM President. Gray will be presenting Silvey with her award at the 56th Annual Conference for the Advancement of Mathematics Teaching (CAMT), which was held in Houston, Texas, on July 15-17, 2009. "Jane has been an inspirational leader across the state of Texas, always encouraging mathematics teachers at every grade level to look for ways to better serve their students. When you look at other states, Texas is at the cutting edge of mathematics education. We are in that position largely because of leaders like Jane."

Silvey began her teaching career in 1969 in Irving ISD as a special education teacher. She continued teaching special education both in Texas and out of state for many years. Then in the early 1990s, Silvey returned to school to complete a mathematics degree and begin a new teaching career in secondary mathematics. In 1996, Silvey attended the original TEXTEAM's Algebra I Institute presented by Dr. Susan Williams from University of Houston. Since that time Silvey has referred to herself as a "born again mathematician" crediting that training for changing her philosophy of teaching mathematics and providing her a deeper understanding of algebraic connections.

During the following years, Silvey has worked on numerous state committees and advisory boards. She has worked as a co-writer on several state mathematical trainings. Her most recent projects include working on the MTC Geometry and the professional development component for the Texas Response to Curriculum Focal Points. Silvey is also one of the sixteen national trainers for Stanford University's School Redesign Network.

Fourteen years ago, Silvey began working at Region 7 Education Service Center as an Educational Specialists in Mathematics and also served as Coordinator of the Math/Science Cooperative. She currently serves as the Assistant Director of the Center for Curriculum Services at Region 7.

2009 E. Glenadine Gibb Achievement Award



Jo Ann Wheeler

The Texas Council of Teachers of Mathematics (TCTM) is proud to announce that it has chosen to honor Jo Ann Wheeler, of Region 4 Education Service Center, with its annual E. Glenadine Gibb Award. The E. Glenadine Gibb Award recognizes outstanding service at the state and/or national level in the field of mathematics education.

"I have worked with Jo Ann for a number of years," said Paul Gray, TCTM President. Gray will be presenting Wheeler with her award at the 56th Annual Conference for the Advancement of Mathematics Teaching (CAMT), which was held in Houston, Texas, on July 15-17, 2009. "Jo Ann has been a mentor to me and countless other mathematics teachers and supervisors, not only in Texas, but across the nation. The projects and initiatives that Jo Ann has inspired have not only revolutionized my own classroom teaching, but continue to have significant influences on classroom teachers across the state and the nation."

Wheeler began her mathematics teaching career in 1986 in Cypress-Fairbanks ISD teaching secondary mathematics and computer science. During that time in the summer, she also taught a national distant education course to struggling secondary mathematics students through Region 4 Education Service Center. In 1990, over 6,000 students were enrolled in this course. Wheeler began working full time for Region 4 in 1995 as an Educational Specialist in Mathematics and has also served as Director of Mathematics, Science, and Social Studies Services. She currently serves as Managing Director for the Office of Business Development at Region 4.

Wheeler has authored numerous mathematics instructional resources and professional development sessions that align curriculum, assessment, and instruction to facilitate student achievement. She provided leadership to the development of instructional materials that are currently utilized in 27 states and 3 continents.

In 2007 – 2008, she served as the president of the Texas Council of Teachers of Mathematics and supported CAMT by serving on the CAMT Board from 2000 through 2008. Wheeler earned her Bachelor of Science Degree in Applied Mathematics from Lamar University and her Masters of Education from The University of Houston.

2009 TCTM CAMTership Awards

Twelve $600.00 CAMTerships were awarded this past summer by TCTM. We would like to extend our congratulations to each of the following recipients. All recipients volunteered two hours of their time at CAMT and attended the annual TCTM Breakfast as guests of TCTM.

If you have been teaching for five or fewer years, look for the CAMTership application online. The CAMTership is intended to encourage beginning teachers to attend CAMT by helping cover part of the expenses associated with attending the annual conference.

photo not available

Taryn Brown
Grades K-2
Hitchcock ISD
Region 4

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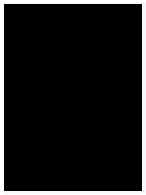
Patricia Rasmussen
Grades K-2
Hitchcock ISD
Region 4



Melissa Summerford
Grades K-2
Magnolia ISD
Region 6

Amanda White
Grade K-2
Hitchcock ISD
Region 4

photo not available

Angie Eubank
Grades 3-5
Rice ISD
Region 12

Sondra Feduccia
Grades 3-5
Commerce ISD
Region 10

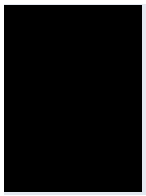
photo not available

Teresa Wiist
Grades 3-5
Wichita Falls ISD
Region 9

photo not available

James Hatchell
Grades 6-8
Brownsboro ISD
Region 7

Barbara Payne
Grades 6-8
Willis ISD
Region 6



Gin Privett
Grades 6-8
Brownsboro ISD
Region 7

photo not available

Gregory Luke
Grades 9-12
Temple ISD
Region 12

Christina Miranda
Grades 9-12
Hays CISD
Region 13

FEATURE

PAEMST

Presidential Awards for Excellence in Mathematics and Science Teaching

The 2009 PAEMST awards recognized outstanding grade 7 – 12 science and mathematics teachers whose innovative methods bring teaching to life in the classroom. In 2010, the PAEMST program will recognize outstanding mathematics teachers in grades K – 6.

The Texas finalists in secondary mathematics are Vicki Peters of Duncanville ISD, Lara Scheumack of Aransas County ISD, and Mallory Zimmerman of Uvalde CISD. Peters is a 26-year veteran teacher and currently teaches at Duncanville High School in Duncanville ISD. Scheumack has taught eight years and currently teaches 8th grade math at Rockport Fulton Middle School in Aransas County ISD. Zimmerman is a 22-year veteran teacher and currently teaches algebra at Uvalde Junior High School in Uvalde CISD.

A state panel of master teachers, specialists, and administrators reviewed the applications and chose the outstanding mathematics teachers for the National Science Foundation to consider for state finalist status. After an initial selection process at the state level, a national panel of distinguished scientists, mathematicians, and educators recommends a finalist to receive the national award. If chosen as a national winner, the state finalist will receive $10,000 and an all expense paid trip for two to Washington D.C. for ceremonies that include recognition from the president of the United States at the Capitol.

Currently, outstanding certified mathematics and science teachers in grades K – 6, with five years or more of teaching experience, are eligible to apply. If you would like to nominate an outstanding mathematics or science teacher, nomination forms and applications are available at *<http://www.paemst.org>*. Nominations are due by April 1, 2010, and applications are due by May 1, 2010.

Lindsey Perry • Curriculum Division
Texas Education Agency • <Lindsey.Perry@tea.state.tx.us >

APPLICATION

2010-11 TCTM Mathematics Scholarships

There are ten $2000 scholarships available for 2010-11. Any student attending a Texas college or university - public or private - and who plans on student teaching during the 2010-11 school year in order to pursue teacher certification at the elementary, middle or secondary level with a specialization or teaching field in mathematics is eligible to apply. A GPA of 3.0 overall and 3.25 in all courses that apply to the degree (or certification) is required. Look for the scholarship application online at *<www.tctmonline.net>*. **The application must be postmarked by May 1, 2010.**

APPLICATION

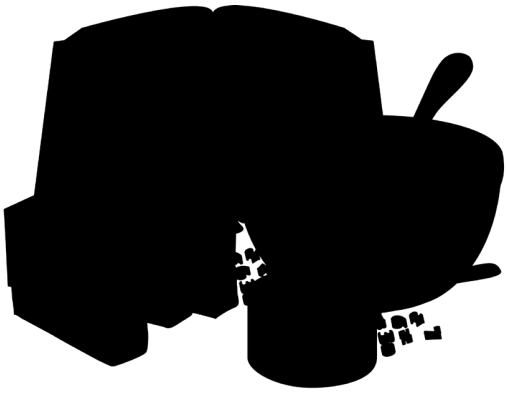
2010 CAMTerships Available

There are sixteen $600 CAMTerships available for 2010. The CAMTership is intended to encourage beginning teachers to attend CAMT by helping cover part of the expenses associated with attending the annual state conference. If you have been teaching five or fewer years in Texas and are attending CAMT, look for the CAMTership application online at *<www.tctmonline.net>*. **The application must be postmarked by April 1, 2010**. If selected, you will also volunteer two hours at CAMT and attend the TCTM Recognition Reception as a guest of TCTM.

FEATURE

CAMT 2010

Mathematics: A Recipe for Success **July 15 – 17, 2010**
Henry B. Gonzalez Convention Center **San Antonio, TX**



Mathematics: A Recipe for Success Teaching with All the Right Ingredients

The Conference for the Advancement of Mathematics Teaching (CAMT) 2010 will be held July 15-17, 2010, at Henry B. Gonzalez Convention Center in San Antonio; Texas. For more details visit the website at *<www.camtonline.org>*

FEATURE

CAMT 2010 Volunteers

Dear Members of TCTM,

Volunteer to be a VOLUNTEER!

We believe that there is an opportunity for everyone to find their niche in helping CAMT to be a success for everyone involved – here's how you can join in on the efforts (we would love to have over 250 volunteers ready to go!). We are looking for fellow mathematics educators to assist us with supporting participants in areas such as the following: Registration, Exhibits, Speaker Check-In, or Transportation. Come work "behind the scenes." We need you! Please e-mail, telephone or fax your name and contact information (be sure to include contact information for the summer) to Martha Godwin, along with which of the following dates you are available to volunteer, Wednesday July 14, Thursday July 15, Friday July 16, or Saturday July 17. Specify if morning or afternoon is better and which area you prefer. Martha will respond via e-mail or home phone with a specific scheduled time and location.

Thank you for making every CAMT a wonderful experience!

Volunteer Information

Name:	Last	First	Middle	
Address:	Number and street		Apt. number	
	City	State	Zip Code	
Contact:	( ) Home Phone	( ) Cell Phone	Email Address	
Affiliation:	District or Professional Affiliation		ESC	

Please submit your form to Martha Godwin,

by mail: **Martha Godwin**
P.O. Box 82
Queen City, TX 75572

by email:
< mgodwin@qcisd.net >

Legislative Update and Advocacy

The legislature met in Spring 2009 and the State Board of Education is working on implementing the changes to the reccomended high school plan. The State Board is also currently approving career and technology courses that will apply to the fourth year of required high school mathematics. Discussion continues on Advanced Mathematical Decision Making as well. For more information about State Board actions, go to:

<www.tea.state.tx.us>

As part of our support for members, TCTM has included a link to an advocacy website that will help you reach out to your elected officials and state agencies. We encourage all TCTM members to voice their opinion. If you want to contact a SBOE member (or legislator), go to the TCTM website, *<www.tctmonline.net>*, click on Members Only, then click on the link under Legislative Action. For SBOE members, click on View next to TX Officials and Agencies, scroll down to Department of Education. This will open up the list of board members and an envelope next to their name. Click on the envelope to send a message.

Cynthia L. Schneider, Ph.D. • <cschneider@mail.utexas.edu>
Research Associate • Charles A. Dana Center,
The University of Texas at Austin

FEATURE

NCTM 60th Delegate Assembly

April 23, 2009 **Washington, D.C.**

National Council of Teachers of Mathematics (NCTM) President Henry (Hank) Kepner welcomed representatives of NCTM Affiliates from across the nation to NCTM's 60th Delegate Assembly on April 23, 2009 in Washington D.C. The president's report included information about action taken by the NCTM Board of Directors on the 2008 resolution and updates on the councils' activities.

Following his report, Kepner presented charters to one new Student Affiliate, and presented certificates of membership to seven partner affiliates that qualified as members of the NCTM Affiliates Leadership Circle.

A resolution initiated by the Eastern Caucus was presented to the assembly. The resolution recommended that there be established new reduced-rate one-day registration categories for the annual meeting and exposition and regional conferences for student members and student non-members. The resolution passed by majority vote to be sent forward for consideration by the NCTM Board of Directors.

The Texas Council of Teachers of Mathematics (TCTM) President, Paul Gray and NCTM Representative, Candy George represented TCTM at the Southern Caucus meeting and the Delegates Assembly.

Candy George • <cgeorge@esc4.net>
NCTM Rep • Houston, TX

FEATURE

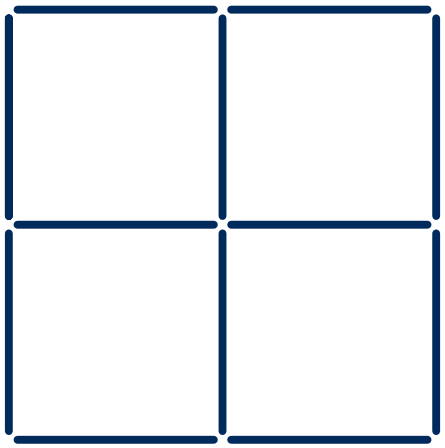
Puzzle Corner

Sticks #13 Puzzle

We are interested in how your students responded to this problem and how they explained or justified their reasoning. Please e-mail copies of your students' work, include your name, grade level, campus name and district name to Mary Alice Hatchett, Director of Publications, *Texas Mathematics Teacher*. Selected submissions will be acknowledged and published in subsequent issues.

Please prepare a sketch of your solution

Arrange 12 craft sticks to form the following figure.

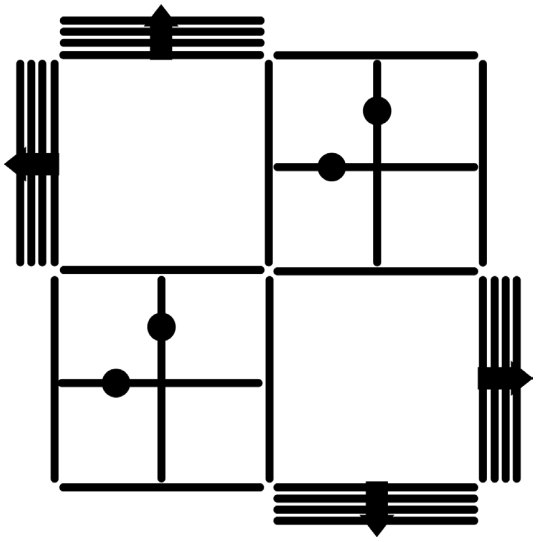


Puzzle: Move two sticks to make nine rectangles including three squares.

Sticks #12 Answer

Arrange 12 craft sticks to form the original figure. Move four sticks to make ten squares.

Shown is a diagram of **a solution.**



FEATURE

Quotes for Thought

"Education is the most powerful weapon which you can use to change the world."

- Nelson Mandela

"Music is the pleasure the human mind experiences from counting without being aware that it is counting."

- Gottfried Leibniz

"Neglect of mathematics works injury to all knowledge, since he who is ignorant of it cannot know the other sciences or the things of the world."

- Roger Bacon

On the Cover

Find The Mathematics ... in a Garage!

There is a rich array of mathematics to be found in a garage – an opportunity to bring math out of the books and off the paper. We have highlighted several examples to get you started.

- In the front left corner there is a box with nested 'stadium cups'. Can you write a function to predict the height of a stack of 12 cups?

- The ladder hanging on the wall is an example of parallel lines (the climbing rungs) as well as the side rails. If the rungs are equal to one inch corrugated steel spaced twelve inches apart, how long (in feet) is the ladder as it appears against the wall? The climbing rungs are also 'transversals'; what are the interior and exterior angle measures?

- There is a plank leaning against a shelf. If the shelves are 12 inches apart and 14 inches deep and the angel of the board and the shelf is about 30 degrees – how far from the wall is the foot of the board?

- The trampoline has a diameter of approximately 4 feet with an 8 inch brown border. How much border is needed to go around the trampoline? Assume you want to replace the material in the center of the trampoline, what is the area of the black part of the trampoline?

- One bike hanging from the ceiling looks like it is a 10-speed. The "highest" gear ratio on a 10-speed bike is usually a front chain wheel with 44 teeth and a rear gear having 11 teeth. That creates a 4-to-1 gear ratio. If the wheel is a 26 inch wheel, how far does the bike move with 1 pump of the pedal? At 60-rpm (revolutions per minute) pedaling rate, what is the speed of the bike in mph?

Allow students to wonder, ask questions and take what they learn from the cover picture and find similar things at which to marvel right in their own garage.

Let us know what you and your students find.

Mary Alice Hatchett • <mahat@earthlink.net>
Independent K-12 Mathematics Consultant • Georgetown, TX

FEATURE

College Admissions 411

New Spanish-language TV series provides help for college admissions

New York. September 3, 2009. The Hispanic Information and Telecommunications Network (HITN), in partnership with the Hispanic Association of Colleges and Universities (HACU), announced the launch of College Admissions 411. The Spanish-language series, which will air weekly on HITN-TV beginning September 9, provides practical information about the complicated college admissions process. The program is intended to help and inspire US Latino students, their families, teachers and their community, according to the producers, while answering questions such as "Is it worth going to college?"

One answer provided by the program is that, on average, college graduates earn $1,000,000 more in their lifetime than high school graduates.

The series is available in its Wednesday prime time slot on HITN TV and on the program's dedicated website, *www.HITN.tv/CA411*.

Each episode features Spanish-speaking educators who address the issues that really matter to U.S. Latinos who are applying to college. Big questions like: How much will it cost? And, how can I pay for it? As well as the complicated details like; how do I fill out the financial aid form?

"HACU helped us receive a tremendous response from leading American universities and colleges" says HITN founder and CEO Jose Luis Rodríguez. "Contributors include HACU-member institutions such as South Texas College, as well as Brooklyn College, MIT and the University of Southern California. Latino community organizations asked us to help them improve their college prep programs. Our new series is a response to their urgent need," says Rodríguez.

According to Dr. Antonio Flores, President and CEO of HACU, "Both HITN and HACU want to reach every student in America who dreams of a better life through a college education but may not be aware of the opportunities within his or her reach. Through College Admissions 411 we also aim to help every Spanish-speaking adult who is working with an aspiring Latino student - as a parent, teacher, administrator or mentor - become a true champion of Hispanic success in higher education."

Many of the sequences involving High School students were filmed at Harlem's Frederick Douglass Academy. "This amazing project will be very successful," says Dr. Hodge, the school's principal. "American educators everywhere are determined to improve college attendance amongst Latinos."

Topics that are examined this Fall season include: Strategies for U.S. Hispanics; The Application Timeline; A Step-by-Step Guide to Financial Aid; The Importance of Grades; and How to Succeed in the Standardized Tests.

HITN is currently producing 25 episodes of College Admissions 411, with another series planned in 2010.

Internet Video: http://*www.HITN.tv/CA411/*

DEPARTMENT

TCTM Communications

Follow TCTM on Twitter!

Did you know that we now have an official Twitter account? Find out the latest about TCTM and other information just for Texas mathematics teachers!

Follow TCTM on Facebook!

Follow us at

www.facebook.com/l/a9a36;twitter.com/TCTM_Updates

Join the Facebook group "Texas Council of Teachers of Mathematics".

Snail Mail!

The journal is sent to the address you indicated on your membership form or the address that was used when you registered for CAMT. Please update your mailing address if it is not correct. If you have an e-mail address, please be sure it is on file and up-to-date with TCTM. If you do not have an e-mail address, please let us know. You may update your information with the membership chair at <*cschneider@mail.utexas.edu*> or by phone at 512-475-9713.

New TODOS Journal TEEM Debuts

On behalf of the Board of Directors of TODOS: Mathematics for All, the editors of Teaching for Excellence and Equity in Mathematics (TEEM) invite you to explore the inaugural issue of our new scholarly publication whose primary goal is to inform teachers and other practitioners.

Teaching for Excellence and Equity in Mathematics (TEEM), a refereed journal, will be published at least once yearly by TODOS: Mathematics for ALL and available via membership in TODOS <*www.todos-math.org*>. The intended audience of this journal is educators, leaders, administrators and practitioners at all levels.

The journal aims especially to engage mathematics education topics of excellence and equity simultaneously (rather than either in isolation) in a way that connects research to classroom practice and can directly inform the practice of teachers or professional developers.

- For members, TODOS provides free online access to TEEM at <*www.todos-math.org*>
- For not-yet-members, the TODOS website <*www.todos-math.org*> offers online access to a 'sample' version which includes two of the eight articles of the debut issue.
- If you are interested in submitting or refereeing a paper for TEEM, go to <*www.math.utep.edu/Faculty/lesser/TEEM.html*> .
- The annual submission windows are November and April. For queries, contact the Editors at <*teem@todos-math.org*>

The articles in TEEM must align with the mission of TODOS:

"to advocate for an equitable and high quality mathematics education for all students -- in particular, Hispanic/Latino students -- by increasing the equity awareness of educators and their ability to foster students' proficiency in rigorous and coherent mathematics."

Editors

Cynthia Anhalt, The University of Arizona

Larry Lesser, The University of Texas at El Paso

Miriam Leiva, University of North Carolina Charlotte

NCTM Membership

What's an easy way to support TCTM?

Join NCTM or renew your NCTM membership!

Sign up for your NCTM membership and use the link on the web form to indicate TCTM as the affiliate you wish to receive a rebate! Go to <*www.nctm.org*>.

TCTM will receive $5.00 if you are joining NCTM as a new member, and $3.00 if you are renewing. In the past, the state affiliate only received the rebate if the NCTM membership flowed through the state treasurer. Now you can sign up directly with NCTM and give back to your state affiliate.

However, you may only choose one state affiliate for the rebate (it will not be split).

Please remember, you cannot join your local affiliates from the NCTM website. You must join the local affiliates directly by the process they have established. You may join TCTM by either attending the CAMT conference as a paid participant, or by using our membership form found online at <*www.tctmonline.net*>.

Voices from the Classroom

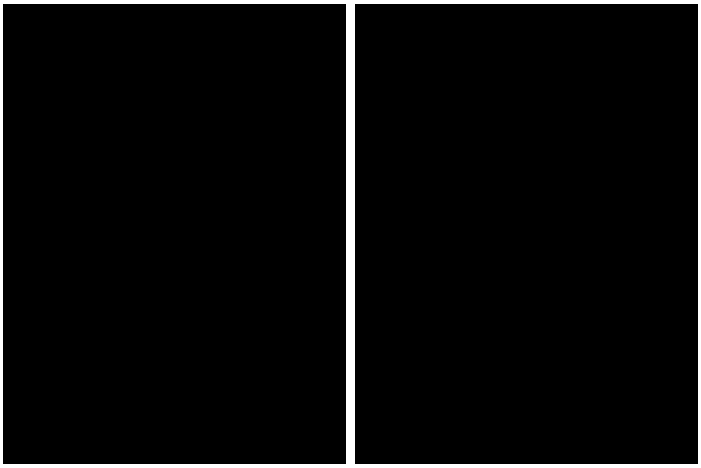
Money Management: Making it Real Through Hands-on Mathematics

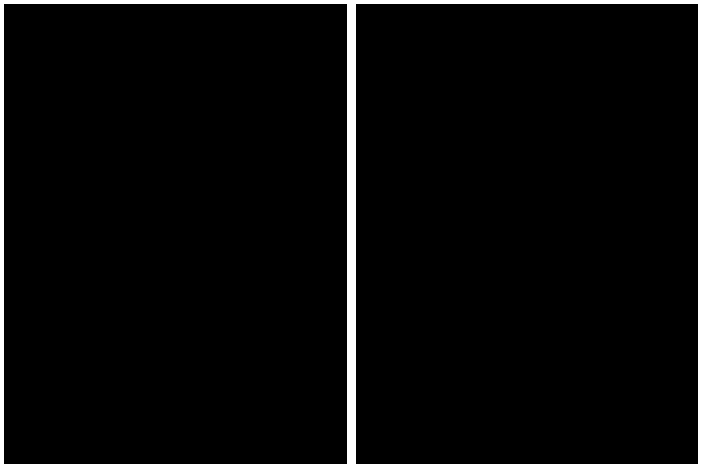
Awareness of money was something my parents introduced to me early in childhood. I was taught to value and respect it. I was taught to enjoy and spend it, but I was also taught to manage and save it. It was these lessons that I wanted to instill in my past second grade students, and hope to instill in my incoming first grade students.

Toying with plastic coins and comical-looking bills was not enough to engage and educate my students. They had difficulty learning the values and names of coins, and had an even harder time conceptualizing fractions of coin combinations and dollar amounts. While in graduate school, I read Rafi Esquith's Teach Like Your Hair's On Fire. Esquith described in detail a banking system he developed for his fifth grade students. The wisdom that his students achieved was extraordinary. They left his classroom not only understanding money, but appreciating its significance in our society.

After contemplating how I could incorporate some of Esquith's ideas into my own teaching, and reading an article Check Out These Checkbooks: Real-Life Banking for the Classroom (Teaching Children Mathematics, March 1999) by Abby Tuch, I developed an in-class money management and life skills ongoing exploration to run the entire school year. This led my students to engage in saving, spending, earning and managing money through real-life experiences. Similar to Tuch, I opened a classroom store to encourage, among other things, computation and thinking skills.

All students in my classroom were given a semi-monthly base salary of twenty play-dollars. They were eligible to apply for optional classroom-based jobs in order to earn more income; available jobs included store manager, store organizer, and store cashier. The incentive to work was earning more money in order to afford more sought after store items that were higher priced. The children learned how to count out correct tender when purchasing items, and learned how to make change when necessary. After Spring Break, I issued check books; students learned to write checks and make the connection to what checks represent in banking. Additionally, each child was issued a detailed ledger book, and asked to document all transactions in full. They were not only introduced to important financial terms such as "debit," "deposit," "transaction," "account," and "balance," but were also able to visually account for their funds.





To make our experience "real" outside of the classroom, we visited a local bank branch. The students listened to the bank manager and were given a behind the scenes tour of the bank's vault and the room where they hold the security deposit boxes. The children practiced filling out deposit slips, and even met an armored truck driver, who happened to stop by while we were visiting.

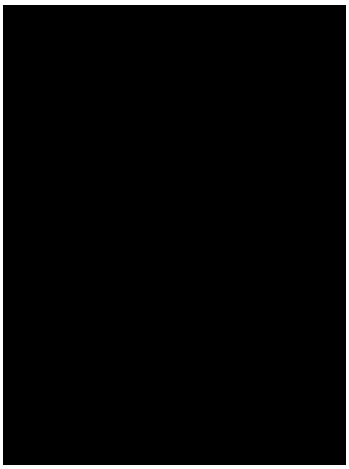
My favorite aspect of the unit was to watch the children's money awareness develop. As the school term progressed, children began to see the value in saving. It was truly uplifting to watch the transition from inexperienced, impulsive shoppers to savvy, watchful consumers.

Saler Lynn Axel, MST • Teacher,
• <slaxel@gmail.com>

CAMT Board Update

Being on the CAMT Board of Directors, I have the privilege to interact with teachers at CAMT in a wide variety of settings. This year at CAMT, one teacher stopped me in the hall to let me know how much she enjoyed CAMT 2009. "I've been going to CAMT for many years, and this year is the best year ever," she proudly exclaimed. And if you were one of the 6200 teachers at CAMT in Houston this past summer, you'll know what I'm talking about.

Our Program Chair, Bea Luchin, did a terrific job of rounding up featured speakers, including our luncheon keynote speaker, Stephen Peters. His inspirational talk at lunch left many of us reaching for our napkins to wipe teary eyes.



2009 CAMT Program Chair
Bea Luchin

We had over 600 speakers at CAMT 2009. Even though some sessions filled up early, Bea's Program Committee volunteers ingenuously balanced the roles of information giver, line former, and even bouncer as they worked tirelessly to ensure a smooth transition between sessions. We literally could not have pulled off the conference without them.

Every year following the conference, the CAMT Board of Directors meets with the Committee chairs to reflect on how the conference went this year. This year, we introduced two "Technology Rooms" with sessions that were geared toward using technology such as interactive white boards, dynamic geometry software, and Internet resources in a mathematics classroom. In spite of a few technology glitches – technology is our friend…technology is our friend… – those sessions were well-attended and well-received. We look forward to continuing that strand next year.

The Board also reviewed feedback from conference attendees that was provided through the post-conference survey. In spite of increased recruiting efforts, we still need to offer many more elementary sessions. If you know someone who teaches elementary mathematics well and would be willing to share what they do with their kids at CAMT 2010 in San Antonio, please encourage them to submit a speaker proposal! It really does take a village to run a conference as large as CAMT.

Paul Gray • <pgray73@sbcglobal.net>
CAMT Board Rep • Houston, TX

Recommended Readings and Resources

Count Down to Fall

Author: Fran Hawk
ISBN: 978-1-607180-39-5
Illustrator: Sherry Neidigh
Publisher: Sylvan Dell

"Count Down to Fall" by Fran Hawk is a wonderful, whimsical, creative educational nature/counting book. A young girl, boy and their dog sit beneath a tree watching critters play, count and name colorful leaves, as they experience how plants and animals prepare for the winter chill.

This book highlights science (nature) more than math with each page the reader counts backwards from ten to one the number of illustrated fallen leaves. Texas children will have an opportunity to see vibrant illustrations of trees with their fall foliage color changes that are not found in many parts of our state.

The back matter of the book offers several instructional activities that are easily implemented into classrooms.

Mary Alice Hatchett • <mahat@earthlink.net>
Independent K-12 Mathematics Consultant • Georgetown, TX

Local Educators Attend NCTM Leadership Conference

New Orleans, Louisiana, July 24-26, 2009

Texas Council of Teachers of Mathematics (TCTM) representatives joined other mathematics educators from across the United States at the National Council of Teachers of Mathematics (NCTM) Affiliate Leaders Conference in New Orleans, Louisiana July 24-26, 2009. TCTM board members who attended were President-elect Nancy Trapp, South Regional Director Barba Patton, Southwest Regional Director Rita Tellez, and NCTM Representative Candy George.

The conference included a variety of leadership-enhancing professional activities for mathematics educators and, in particular, for Affiliate leaders. The professional activities promote a commitment to improving mathematics education for all students. NCTM Affiliates are state, local, student, and at-large mathematics councils.

The conference was designed to strengthen Affiliates in the areas of partnership and membership as well as leadership by providing participants opportunities to identify their leadership strengths, network and exchange ideas, develop Affiliate action plans, and share strategies. Facilitated by members of the Council's Affiliate Services Committee (ASC), the conference offered a rich exchange of ideas and expertise for strengthening Affiliates and for making Affiliate leaders more effective in their roles. Throughout the conference, participants had opportunities to connect with Council leadership, including NCTM President Henry (Hank) Kepner.

Affiliate leaders conferences offer a forum for the Council's Affiliates to examine and strengthen their role in providing opportunities for emerging, new, and seasoned teachers to grow professionally through the partnership of NCTM and its Affiliates.

The National Council of Teachers of Mathematics was founded in 1920 and is a nonprofit, nonpartisan education association. With 100,000 members and more than 230 Affiliates located throughout the United States and Canada, NCTM is the world's largest organization dedicated to improving mathematics education for all students. The Council's Principles and Standards for School Mathematics provides guidelines for excellence in mathematics education.

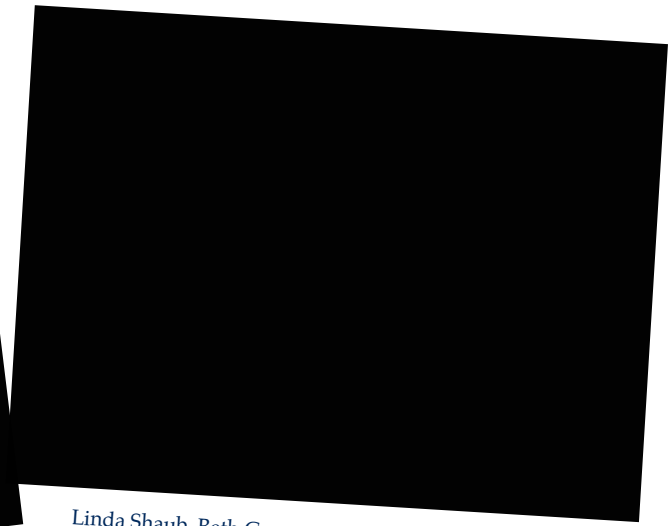
Candy George • <cgeorge@esc4.net>
NCTM Rep • Houston, TX

FEATURE

Affiliate Events

Austin Area CTM Meeting on October 3, 2009

Participants from Ridgeview Middle School, Round Rock ISD.



Linda Shaub, Beth Grayson, Cynthia Schneider.

About this Publication

Since 1971, the Texas Council of Teachers of Mathematics (TCTM) has produced the journal *Texas Mathematics Teacher* for our members. Our mission is to promote mathematics education in Texas. In the journal we accomplish this by publishing peer-reviewed articles by leading authors, state updates from the Texas Education Agency, and local news from around the state. TCTM is committed to improving mathematics instruction at all levels. We place an emphasis on classroom activities that are aligned to the Texas Essential Knowledge and Skills and the NCTM *Principles and Standards for School Mathematics*.

The *Texas Mathematics Teacher* seeks articles on issues of interest to mathematics educators, especially K-12 classroom teachers in Texas. All readers are encouraged to contribute articles and opinions for any section of the journal. Teachers are encouraged to submit articles for Voices From the Classroom, including inspirational stories, exemplary lessons, or management tools. More specific guidelines for submissions may be found on page 3.

In 2004-05, our publication took on a new look. Original artwork on the cover is another appealing change for our readers. We publish the journal twice each school year, in the fall and spring semesters. Next year, we plan to provide our publication in a web-based format as well as print. You will be given the option to decide if you wish to continue to receive the print version or not. Our current website archives the more recent journals in PDF format. Please see

<www.tctmonline.net>

if you wish to view prior issues.

Our current Editorial Board consists of Cynthia Schneider, Mary Alice Hatchett, Geoffrey Potter, Larry Lesser and James Epperson. Larry and James serve as expert advisors; Cynthia is the editor. Mary Alice does many jobs, including requesting articles, serving as an elementary expert, and communicating with authors. Geoff is the layout and graphic designer; he manages to fit all the text into the limited number of pages we have to work with. The TCTM Board wishes to thank them for their leadership in improving the *Texas Mathematics Teacher*.

The Editorial Board wishes to acknowledge the contributions - time, effort, and expertise - that our volunteer reviewers make to our final journal. Those that reviewed for the journal and deserve our thanks for their support last year, in 2008-09, were:

Paul Gray
Larry Lesser
Barba Patton
Colleen Eddy
Barbra Holland
Kit B'Smith
Tricia Rothenberg
Frank Rivera
Jean Franke
Mary Sarli
Vodene Schultz
Joseph Champine
Ward Roberts
Karen Rhynard
Liz Scott

Advertising Guidelines for the Texas Mathematics Teacher

All advertising is subject to the approval of the publisher. The journal staff shall be responsible for ascertaining the acceptability of advertisements. All advertisements should be sent "copy-ready" by the closing dates of September 1 for the fall issue and January 15 for the spring issue. Position preference, such as right-hand pages or first half of issue will be honored on a first-come basis. All advertisements must be pre-paid by the closing date with a check made payable to TCTM, and mailed to our current treasurer, Rebecca Ontiveros. Rates for the *Texas Mathematics Teacher* per issue are: full page $500.00, half page $250.00, quarter page $125.00.

All advertisers must adhere to the following guidelines:

- Advertisements should focus on marketing products and services that pertain to the teaching and learning of mathematics.
- The design of all advertisements should be in harmony with the artistic appearance and technical level of the publication.
- Those placing an advertisement must be able to verify their claims.
- Advertising copy should be dignified and professional. Derogatory and inflammatory statements should be avoided, and all advertising copy should be nondiscriminatory with regard to national origin, gender, marital status, race, or creed.
- The journal staff shall be responsible for placement in the publication.

Advertising that elicits significant reader complaints will not be rerun before the complaints have been investigated by the journal staff and the advertiser.

TCTM 2009-10 Mission, Focus and Goal Statements

Mission of the Texas Council of Teachers of Mathematics:

To promote mathematics education in Texas

To support this mission, TCTM has five **focus areas:**

Recruit and Retain Mathematics Teachers	Curriculum and Instruction Support	Advocacy	Promote Communication among Teachers	Serve as Partner Affiliate for NCTM

TCTM activities will align to the five strategic goals. **Goals** of the organization include six strands:

Administration

- Streamline online membership registration through CAMT

Publications

- Survey membership to identify what they want in the *Texas Mathematics Teacher* (*TMT*)
- Review and refine the *TMT* journal and the TCTM website
- Improve the review protocol, establish criteria for reviewers
- Provide tips for new teachers in the *TMT* and on the website

Service

- Increase the donations toward Mathematics Specialist College Scholarships
- Staff CAMT with volunteers as necessary
- Advertise affiliated group conferences on the TCTM website, in the TMT and at CAMT

Communication

- Maintain an e-mail list of members for timely announcements
- Communicate with affiliated groups in a timely manner

Membership

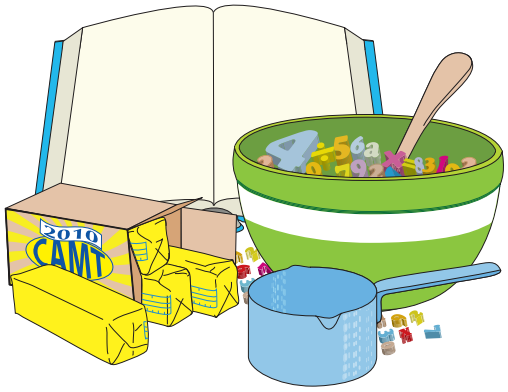
- Encourage affiliated groups to include TCTM registration on their membership forms

Public Relations

- Sponsor and staff the TCTM booth at CAMT
- Follow NCTM Advocacy Toolkit (2004) for increased voice of TCTM membership on issues relevant to our mission

TCTM Past-Presidents

1970-1972	James E. Carson	1982-1984	Betty Travis	1994-1996	Diane McGowan
1972-1974	Shirley Ray	1984-1986	Ralph Cain	1996-1998	Basia Hall
1974-1976	W. A. Ashworth, Jr.	1986-1988	Maggie Dement	1998-2000	Pam Alexander
1976-1978	Shirley Cousins	1988-1990	Otto Bielss	2000-2002	Kathy Mittag
1978-1980	Anita Priest	1990-1992	Karen Hall	2002-2006	Cynthia L. Schneider
1980-1982	Patsy Johnson	1992-1994	Susan Thomas	2006-2008	Jo Ann Wheeler



Mathematics: A Recipe for Success Teaching with All the Right Ingredients

The Conference for the Advancement of Mathematics Teaching (CAMT) 2010 will be held July 15-17, 2010, at Henry B. Gonzalez Convention Center in San Antonio; Texas. For more details visit the website at <*www.camtonline.org*>

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Valid Through July 31, 2010

Membership Card

Paul Gray — President

Use the membership form online at <*www.tctmonline.net*> to renew or join TCTM for the first time.

If this journal is addressed to you, you are a current member of TCTM. Here is your membership card.