

ARKANSAS

Council of Teachers of Mathematics

FALL 2007

VOLUME 5, ISSUE 3

Arkansas Curriculum Conference

The Name Has Changed, BUT We Still Have the Same Great Program and Events

One of your first stops should be the ACTM table in the registration area. You can take care of membership dues and get the latest forms for scholarships and grants as well as important announcements—such as where the ACTM Hospitality Suite is this year.

The program has focused areas for elementary, middle level, and high school teachers as well as a technology area. On Thursday in the small Peck room across from the Peabody ballrooms, we are featuring high school (grades 9-12) student posters of interesting problems and investigations. Look for the entry form in this journal, to help your students enter this presentation. They do not have to be present to display their posters. All students displaying posters will be entered into a drawing for a TI Nspire®.



Be sure to drop by before you go to the ACTM luncheon on Thursday at 11:30.

For the second year, ACTM will have a Hospitality Suite. The ACTM board is hosting a continental breakfast on both Thursday and Friday mornings from 6:30 – 8:30 a.m. Come to enjoy coffee, juice, a light breakfast, and your wonderful colleagues. (For room number, visit the ACTM table.)

The suite will also be open from 4:30-6:30 p.m. on Thursday afternoon for a light reception. If you need to store materials, you can run by the ACTM table for assistance in getting to the suite.

The Thursday luncheon is a great place to catch up with friends, get an overview of ACTM activities in the past year, and hear about scholarships, grants, and teacher awards.

The luncheon program features a state treasure in mathematics education, the Arkansas School for Mathematics, Sciences, and the Arts.

(Continued on page 18)

SPECIAL POINTS OF INTEREST:

- ◆ Arkansas Curriculum Conference Registration
- ◆ NCTM Regional Conference Dates
- ◆ Classroom Activities
- ◆ T³ Regional Conference Registration
- ◆ Jonesboro Teacher named Top Math Educator



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Dear ACTM Family,

It is that time again - another beginning to a new school year. What will make this school year any different than any other? What will make this school year any better than any other? Should we even expect or want this year to be any different or better? ABSOLUTELY!!

We know we are good teachers. We know how many hours we devote to professional development, the preparation of lesson plans, handouts, assessments, gathering and purchasing of materials and developing activities that support the content we teach. Students and parents should be thankful that they have us. But wait a minute. Who should the thankful ones really be?

What other profession provides the opportunity to honestly make a positive difference in the future of our world? What other profession provides the opportunity to touch the lives of children in ways that truly mould these children into curious, excited and demanding learners? Our profession, the profession of teaching, is unique. Yes, we have frameworks, guidelines and deadlines, but when that door to our classroom is closed, we have the flexibility to decide how we are going to get our students to the level of success required by the State and demanded by parents and school administrators. It is up to us.

It has been said that you can find happy, pleasant people in any group. But you can also find grumpy, grouchy people in any group. Perhaps looking at our groups of students with a happy, pleasant attitude will make a difference in what type of students we choose to see in our classrooms.

I requested of my teachers this year that they not go to their classes with pre-conceived ideas about their students. Give each child a chance. It doesn't matter what kind of students they were last year. It doesn't matter what information previous teachers have "shared" with you or any negativism you may have heard in the teachers' lounge. The students may have matured over the summer. Their circumstances may have changed in a positive way. For whatever reason, their attitudes may have improved. Every child comes to us with a clean slate. Yes, for some, it may just take a few days for us to realize that they have problems. But if every student truly begins the year with a clean slate in our classrooms, their attitude, work ethic and enthusiasm for learning might just surprise us.

You have much to do – and so little time. But realize that as you are planning your classes' new beginnings, there are students in your community who are nervous, excited and anxiously awaiting to get started in your classes. I urge you to greet them with a positive attitude – with an attitude that reflects your confidence that this is not going to be just another school year – but rather that it is going to be one of the most memorable, positive years that you or they have ever experienced. You owe it to your students. You owe it to yourself.

I look forward to seeing you at the Arkansas Curriculum Conference in November in Little Rock and the Teachers Teaching with Technology conference the last of January and the first of February in Hot Springs. I am anxious to hear about the great school year that you and your students are experiencing.

Sincerely,

Melanie Nichols, President ACTM



Attention all Students in Grades 9-12

Submit a Tri-Fold Poster of
 An Interesting Problem or Investigation
 To be Displayed at the Arkansas Curriculum Conference
 On Thursday, November 1st
 All Students & Teachers whose Posters are Displayed
 will be entered in a

Presenting your Poster during a 30 minute period on Thursday is Optional

Teacher Name: _____ **Student Name:** _____

Teacher e-mail: _____ **Student e-mail:** _____

Descriptive Name of Problem or Investigation: _____

Name of School: _____

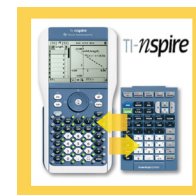
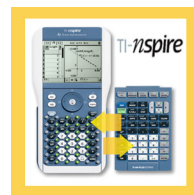
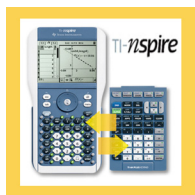
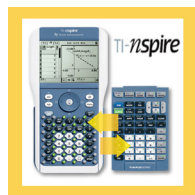
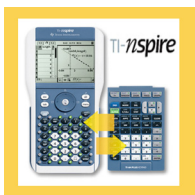
(Submissions Limited to 2/teacher)

Teacher or Student can present my poster during 30 minutes on Thursday, November 1st
 will display but cannot present my poster on Thursday.

Teachers mail or e-mail this application by October 19th to:

Jeanie McGehee
 12160 Southridge
 Little Rock, AR 72212
 email: jeanm@uca.edu

You will be notified by e-mail by October 26th.



NCTM WELCOMES LEGISLATIVE PRIORITY ON K–12 MATH EDUCATION

Reston, Va., August 1, 2007 — The agreement reached by Senate and House conferees on S. 2272, the America COMPETES Act, was welcomed today by the National Council of Teachers of Mathematics (NCTM). The legislation includes a dedicated focus on enhancing mathematics education in elementary and middle schools, and on math coaches.

“The Council has been working hard the past two years to emphasize the importance of mathematics education as the critical foundation for all STEM careers and key to America’s competitiveness in the global marketplace,” said NCTM President Francis (Skip) Fennell. “This legislation shows that policymakers not only understand the importance, but also support dedicated funding for K–12 mathematics education.”

The conference agreement authorizes new grant programs to enhance math education at the elementary, middle, and high school levels. In addition to support for best practices and in-service training, the bill provides targeted help to low-income students who are struggling with mathematics. NCTM is hopeful that Congressional authorizers will work to fund some of these new, but crucial, initiatives in the current spending cycle. The conference agreement follows through on a commitment to ensure U.S. students, teachers, businesses, and workers are prepared to continue leading the world in innovation, research, and technology well into the future.

The bill also includes a provision to provide in-service training for mathematics coaches who can assist secondary school teachers to develop and improve students’ mathematical abilities and knowledge, and assist teachers in assessing and improving student achievement.

“We know that the lack of proper mentoring and support for teachers is one reason so many leave the profession in their first few years of teaching,” said Fennell. “The guidance and support provided by a growing group of math coaches will help early and mid-career teachers and afford better learning opportunities for students.”

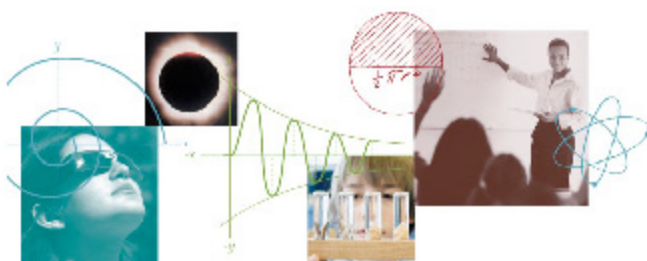
The Council also expressed its support for the formation of an expert panel through the National Academy of Sciences to provide information on promising practices for strengthening teaching and learning in science, technology, engineering, and mathematics at the elementary and secondary school levels. The panel would build on the work of the National Mathematics Advisory Panel to synthesize their work with promising practices

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 in 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. Its recently released *Curriculum Focal Points for Prekindergarten through Grade 8 Mathematics* identifies the most important mathematical topics for each grade level.

Contact: Gay Dillin, Media Relations Manager, (703) 620-9840 ext. 2189, gdillin@nctm.org.

2007 NCTM REGIONAL CONFERENCES

Richmond, Virginia	October 11-12, 2007
Kansas City, Missouri.....	October 25-26, 2007
Houston, Texas	November 29-30, 2007



**Presidential Awards for
Excellence in Mathematics
and Science Teaching**

www.paemst.org

PRESIDENT BUSH NAMES TWO JONESBORO-AREA TEACHERS AMONG NATION'S TOP EDUCATORS

Sixth Grade Academic Center and Gibbs Albright Elementary School Teachers Named Recipients of 2006 Presidential Award for Excellence in Mathematics and Science Teaching.

Washington, DC—President George W. Bush is honoring science teacher Barbara Reng, from Sixth Grade Academic Center in Jonesboro, and mathematics teacher Lisa Honey, from Gibbs Albright Elementary School in Newport, with the 2006 Presidential Award for Excellence in Mathematics and Science Teaching, the Nation's highest honor for teaching in these fields. Reng and Honey are the only winners from Arkansas, and two of 93 teachers nationwide to receive the prestigious award.

In a citation given to Reng and Honey, President Bush commended them “for embodying excellence in teaching, for devotion to the learning needs of the students, and for upholding the high standards that exemplify American education at its finest.”

As Awardees, they each receive a \$10,000 award from the National Science Foundation (NSF), the federal agency that administers the awards program on behalf of The White House, and an all-expenses paid trip to Washington, DC, for a week of celebratory events and professional development activities.

In a letter to Awardees, President Bush said, “Math and science are critical components of America’s technological and competitive strength. Through the American Competitiveness Initiative, my Administration is working to advance American Innovation and support the efforts of teachers by increasing investments in research and development, promoting education in math and science, and encouraging entrepreneurship and technological advances.”

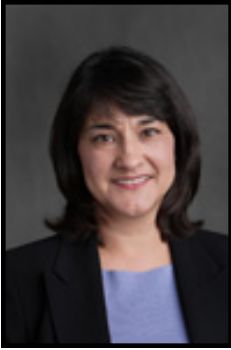
Established by Congress in 1983, the annual Presidential Awards program identifies highly qualified mathematics and science teachers in all 50 states, the District of Columbia, Puerto Rico, the U.S. Territories and the U.S. Department of Defense Schools. This year’s recipients — recommended for the award by a panel of leading mathematicians, scientists and educators — are K–6th grade teachers.

“These teachers exemplify what President Bush’s American Competitiveness Initiative aims to achieve by raising the bar for math and science education for all students, who are America’s future leaders of innovation,” said John H. Marburger, III, Director of The White House Office of Science and Technology Policy.

For more information, visit www.paemst.org.



2006 PAEMST MATHEMATICS AWARDEE



Ms. LISA HONEY

Discipline: K-6 Mathematics
407 Wilkerson
Newport, AR 72112
Gibbs Albright Elementary

Lisa Honey finds that any mathematics activity that involves measurement is a big hit with her students. “These lessons are authentic learning experiences in which kids work out of the book and sometimes out of the classroom. For example, the track field is a great place to teach elapsed time, and the basketball court easily lends itself to lessons on calculating perimeter and area,” explained Honey. A strong believer in the power of building relationships and creating real-life learning experiences in class, she makes her students the center of her instruction. “For students to succeed, it is imperative that their teachers are committed to providing learning opportunities that are geared to individual needs, interests, and levels of functioning,” she said *I have found that the less I talk, the more my students learn; and when students discover a process for themselves, they are more likely to understand and repeat it. For those reasons, my instruction time often includes 10–12 minutes of interacting with students and 30–40 minutes of exploring.* - Lisa Honey

The 2008 award program will focus on kindergarten-6th grade teachers.

For mathematics nominations and questions about the awards program, contact Roy L. Barnes, PAEMST State Coordinator for K-12 Mathematics at rleebarnes@sbcglobal.net.

2007 Election Results

President: Aimee Evans

Vice President: Mike Sturdivant

Arkansas School for Mathematics, Sciences and the Arts
200 Whittington Avenue
Hot Springs, AR 71901
Work501-622-5100
email: sturdivm@asmsa.org

Vice President - Elementary: Pamela Mulson

Fort Smith Schools, Elem. Math Coordinator
Parker Center @811 North “T” Street
Fort Smith, AR 72904
Home:479-785-0465
School:479-784-8182 ext 3541
email: pmulson@sbcglobal.net
pmulson@fortsmithschools.org

Secretary - Kittena Bell

Magnolia Schools Mathematics Coordinator
P. O. Box 649, Magnolia, AR 71754-0649
Home: 870-234-6895
School: 870-901-2515
email: Kbell@magnolia.scsc.k12.ar.us

Delegate-At-Large Jr. High & Middle School - Debbie Gibson

Greenbrier Middle School, 13 School Drive
Greenbrier, AR 72058
Home: 501-679-5667
School: 501-679-2113
email: gibsond01@alltel.net

Delegate At-Large 2-Year College: Robbie McKelvy

Delegate At-Large 4-Year College: Tracy Watson.

Don't miss out on an opportunity to receive quality professional development training on the newest TI technology in Arkansas!

TI-Nspire™ learning technology

TI-Nspire enhances the ability to:



- Use documents that align with teaching practices proven to enhance learning.
- Save and continue work from one class to the next, where the lesson left off.
- Allow student reflection and revision of work.
- Organize the build-up and sequencing ideas
- Enable formative assessment of student understanding.
- Prepare materials at the start of class, increasing time on task.

To support the introduction of the new handheld across the continent, Texas Instruments is offering a T³ TI-Nspire 2-Day Hands-On Institute in Fayetteville, AR. This institute will focus on the integration of TI-Nspire technology into the classroom with the use of content-specific activities for Algebra 1, Algebra 2, Geometry, Precalculus, and Calculus.

The cost to attend is \$225. Each participant will receive a TI-Nspire handheld, TI-Nspire ViewScreen panel and TI-Nspire computer software.

Date: September 21-22, 2007

Location: Fayetteville, AR

Contact Person: David Young, dyoung7@prodigy.net

Online Registration: TI-Nspire.com

Teachers Teaching with Technology (T³) Regional Conference

Arkansas School for Mathematics, Sciences and the Arts
200 Whittington Avenue
Hot Springs, Arkansas 71901

January 31, February 1-2, 2008

For additional information: <http://www.arkansasmath.com>

Free T³ Online Professional Development Courses

T³ Online Courses are high-quality professional development that fits your schedule! In order to reach more teachers in need of quality Professional Development the T³ Online Courses are now **FREE**. For more information, visit the Professional Development area at <http://education.ti.com>.

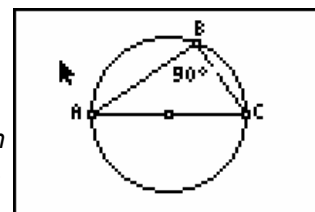


Algebra Using the TI-83 Plus/TI-84 Plus

This course introduces ways of incorporating graphing technology into your algebra lessons to enrich instruction and extend your students' comprehension. Essential algebra topics such as solving equations, transformations, systems of inequalities, proportional reasoning, and factoring are correlated to the NCTM Standards.

Geometry with Cabri Jr. and the TI-84 Plus

This course introduces ways of incorporating graphing technology into your geometry lessons to enrich instruction and extend your student's comprehension. Essential geometry topics such as Intersecting Lines, Angles and Transversals, Translations, Reflections, Rotations, Dilations, Transformations, Triangles, Quadrilaterals, Area Relationships, Chords, Secants, and Tangents, and Circles.

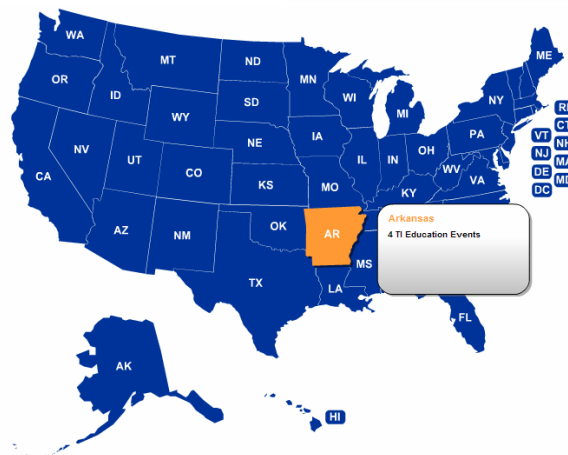


High School Mathematics Using the TI-Navigator™ and Middle Grades Mathematics Using the TI-Navigator™

Teachers using the TI-Navigator will be able to easily share created educational documents, programs, or other activities electronically for instruction. These files may then be sent to or received from all students wirelessly in a matter of seconds. The goal of this course is to prepare teachers to use the TI-Navigator system and to introduce ways of incorporating the TI-Navigator into the mathematics curriculum to enrich instruction and extend students' comprehension.



Now, you can search online for professional development on TI Technology using the new TI Events search engine. Check it out at <http://education.ti.com>.



ARKANSAS IS A NATURAL WONDER

In honor of the Weyerhaeuser supporting ad for ACTM, we decided to look for activities that related to forestry. This problem and many other good application problems can be found at thefutureschannel.com. This year we will feature activities related to the natural resources in our state. PLEASE share your activities with us.

TIMBER CRUISE

Teaching Guidelines

<p>Subject: Mathematics Topics: Problem Solving Grades: 7-12</p>
<p>Concepts:</p> <ul style="list-style-type: none"> ◆ Sample ◆ Population
<p>Knowledge and Skills:</p> <ul style="list-style-type: none"> ◆ Can solve multi-step problems ◆ Can apply the problem-solving strategy, "Solve a simpler problem" ◆ Can interpret data in a chart or table ◆ Can use proportional thinking to solve problems

Distribute the handout to teams of two or three.

Now ask the teams to work out how they would find the total volume of all of the sampled trees, and write that out (they do not actually need to carry out the computations, they need only describe how it would be done: by multiplying the number of trees in each table position in the top table by the corresponding volume of those trees in the bottom table).

Finally, ask the teams to work out how they would use that answer to determine the volume of all 1000 trees in the stand. (*Multiply by 20, since the sample is 1/20 of the size of the population.*) In discussing this, introduce or review the concepts of sample and population in this context. You may also wish to use this opportunity to review the importance of choosing a representative sample in this case, and how a non-representative sample could cause a poor estimation of total volume.

Constitution Revised!

Thank you to all ACTM members who took the time to vote on proposed revisions to the ACTM constitution. The vote was unanimous. Our constitution has been revised and is posted on our website.

FINDING THE RATE OF CHANGE OF THE VOLUME OF TOOTSIE ROLL POPS

In this activity we will determine the rate of change of volume of a Tootsie Roll Pop as it is consumed.

Equipment Needed:

- Tootsie Roll Pop for each participant
- Dental Floss
- Rulers
- Timers – one each (or watches with second hands)
- Handi-wipes
- Graphing Calculators



Procedure:

1. Using a length of dental floss, measure the initial circumference of your Tootsie Roll Pop. Record.
2. Place the Pop in your mouth and suck and twirl for exactly 30 seconds.
3. Using your length of dental floss, measure the circumference. Record.
4. Repeat steps 2 and 3 until chocolate begins to come through the pop.
5. Using a Handi-wipe, clean your hands and ruler.
6. Using your circumference measurements, find the radius and volume associated with each measurement.

$$\frac{L1}{2\pi}$$

This can easily be done by entering your circumference measurements in List 1, then entering

$$\frac{4}{3}\pi(L2)^3$$

into List 2 and into List 3.

7. Enter time data into a list. Plot the radius as a function of time.
8. Using the capabilities of your graphing calculator, find an equation of best fit for the radius as a function of time. Also find an equation of best fit for the volume as a function of time. (Using an exponential equation may make the calculus easier in following steps).
9. Find the time when the radius is $\frac{3}{4}$ its original value by graphing the line $Y2 = (3/4)(\text{your original radius})$ and your equation of radius as a function of time found in step # 8. Find their intersection.
10. Graph the equations for radius as a function of time and volume as a function of time found in step # 8.

$$\frac{dr}{dt} \quad \text{and} \quad \frac{dV}{dt}$$

Using the capabilities of your calculator find $\frac{dr}{dt}$ and $\frac{dV}{dt}$ at the time found in step # 9.

$$\frac{dr}{dt} \quad \text{and} \quad \frac{dV}{dt}$$

11. Using calculus, find equations for $\frac{dr}{dt}$ and $\frac{dV}{dt}$ from the general formulas for radius and volume of a sphere. Make necessary substitutions to ensure the change in volume is with respect to time rather than

$$\frac{dV}{dt}$$

with respect to the radius. Find $\frac{dV}{dt}$ when the radius is three-fourths its original value.

12. Compare solutions found in steps # 10 and # 11. Discuss sources of error.
13. Discuss revisions that might enrich this activity.

$$C = 2\pi r$$

$$V = \frac{4}{3}\pi r^3$$

Time		Circumference	Radius	Volume
1	0			
2	30			
3	60			
4	90			
5	120			
6	150			
7	180			
8	210			
9	240			
10	270			
11	300			
12	330			
13	360			
14	390			

ACTM TEACHER OF THE YEAR AWARDS

Wanted: the names of Arkansas outstanding mathematics teachers. The ACTM Board has decided to revise how the outstanding mathematics teachers are chosen each year. Read on to find out the new guidelines and take a minute to nominate an excellent mathematics teacher.

The Arkansas Council of Teachers of Mathematics is pleased to offer teaching awards for active members of the organization. These awards have been established to recognize excellent mathematics teachers for outstanding qualities in areas of teaching and leadership.

Who can nominate an outstanding mathematics teacher?

Anyone can nominate a teacher for the awards...a student, a parent, another teacher, a principal, a supervisor or a member of the community. An individual may nominate only one person at each level for the award. Teachers may not nominate themselves. Teachers who are nominated will not be asked to complete a packet. The selection process will be determined by asking the nominator about the teacher. Teachers selected for this award will be notified by October 25, 2007, and will be guests at the ACTM Luncheon at the Arkansas Curriculum Conference in Little Rock, November 1, 2007.

Categories of the Outstanding Mathematics Teacher Awards are the following

Primary - 4
5-8 grades
9-12 grades
2 year/4 year college

Awards and Recognition

- Plaque
- An unrestricted award of \$400
- Guest of ACTM at the ACTM Luncheon

A panel of judges will contact the nominator and select the award recipients.

Nominees must be current members of ACTM who...

- Have daily contact with students and inspire them to learn and achieve.
- Understand the individual needs of students, encourage their talents, and help build confidence and self-esteem.
- Demonstrate a thorough knowledge of mathematics and the ability to share it effectively with the students.
- Use the appropriate technology to instruct their students to help prepare them for the twenty - first century.
- Have participated in making positive contributions to the mathematics community.
- Have demonstrated participation and leadership in professional development activities and fostered cooperative relationships with colleagues.

ACTM Scholarship Application Form
Mathematics Workshop/Mathematics Institute/Math Graduate Course
January 1, 2007–December 31, 2007

Name: _____
School _____
Address _____
School Phone _____ Home Phone _____
E-mail _____

Are you a member of ACTM? Yes No
Membership status will be verified—you can join with this application—go to web site www.actm.net

Mathematics Educator	Pre-service Teachers
Current Supervisor's Name _____	University _____
Principal's E-mail _____	Classification (Freshman, etc) _____
School _____	Advisor's Name _____
Subjects/Grade Level _____	

GUIDELINES

- ◆ The maximum scholarship award is **\$500 for current teachers** and **\$250 for pre-service teachers**.
- ◆ Must be a current member of ACTM.
- ◆ If you are taking a workshop or class, it must be a math class.
- ◆ You must provide documentation that this course/workshop/conference impacts the mathematics of the student.
- ◆ Top priority will be given to those persons who have not been previously funded.

Complete the entire application form and return to:

Susan Creekmore, 308 River Wind Drive, Marion, AR 72364

All applications must be postmarked by the appropriate deadline!

Applicants will be notified by the ACTM Grant Committee . Additional instructions will be provided to the recipients.

On a separate sheet of paper answer the following questions:

1. How does this class/workshop impact the teaching of mathematics or the student learning of mathematics?
2. What area of study do you wish to pursue and how will this study impact your mathematics teaching?
3. Where will you attend this training or course?
4. What is your ultimate goal upon completing the workshop/mathematics course/conference?
5. A proposed budget including the cost of the workshop, mathematics course or conference.

For guidance in writing the scholarship/grants application, please feel free to contact any ACTM Board member.

*A follow-up report of the workshop/mathematics course/conference should be submitted within 3 months after completion to
Susan Creekmore, 308 River Wind Drive, Marion, AR 72364*

I submit this scholarship to ACTM for consideration. I understand that this is a competitive scholarship application process.

Signature

Date

Funds Are Limited!
Only quality applications will be considered

Scholarship and Grant Application Deadlines
April 30, August 31, December 31

ACTM Grant Application Form
In Class Project/Materials/Technology
January 1, 2007-December 31, 2007

Name: _____

School _____

Address _____

School Phone _____ Home Phone _____

E-mail _____

Are you a member of ACTM? Yes No

Membership status will be verified—you can join with this application—go to web site www.actm.net

Principal's Name _____

Principal's E-mail _____

School District _____

Subjects/Grade Level _____

GUIDELINESThe maximum grant award is **\$250**.

Must be a current member of ACTM.

The project must focus on mathematics learning.

Top priority will be given to those persons who have not been previously funded.

Complete the entire application form and return to:**Susan Creekmore, 308 River Wind Drive, Marion, AR 72364**

Applicants will be notified by the ACTM Grant Committee. Additional instructions will be provided to the recipients.

On a separate sheet of paper give the following information:

Name of the project

Complete description of the project

A proposed budget including item description, quantity, price and total

*I submit this grant to ACTM for consideration. I understand that this is a competitive grant application process. I give permission for ACTM to list my project idea in the state newsletter.*_____
Signature_____
Date

Scholarship and Grant Application Deadlines
April 30, August 31, December 31

MATH TRICKS

by Sheryl Cox

Does this ever happen to you? A friend or relative sends you a math trick they have seen somewhere (usually on the internet) and wants to know if you can “figure it out”. Most of the ones I have seen are based on the divisibility of nine: if you add the digits of any multiple of 9, the sum will also be a multiple of 9.

Last week I got an email from my sister directing me to a website (by an uncola to remain nameless) claiming to read my mind. I was directed to write a 3 or 4 digit number, then rearrange the digits to form a different number and subtract. After circling one of the digits (specifically NOT a zero) in the difference, I had to type in the other digits and the computer would “magically” know the digit I had circled.

The explanation I sent to her follows.

Think of it this way: Suppose I choose 257 and rearrange it to be 725.

Now the 7 is worth 700 and it used to be worth only 7 --- a difference of 693, which is divisible by 9.

The 5 was worth 50, but now only worth 5 --- a difference of 45, which is divisible by 9

The 2 was worth 200, but now it is worth only 20---a difference of 180, which is divisible by 9.

700	50	200
<u>-7</u>	<u>-5</u>	<u>-20</u>
693	45	180

So all the differences will be divisible by 9.

Now to put it in general terms....

Any digit that moves from the ones place to the tens place would be worth 10 times as much as it used to be, so there is a difference of 9 times the original digit. (9 times any digit will be a number that is divisible by 9)

Any digit that moves from the ones place to the hundreds place would be worth 100 times as much as it used to be, so there would be a difference of 99 times the original digit (again, 99 x any digit is divisible by 9)

Even if a digit moves from the ones place to the thousands, it will be worth 1000 times as much, and the difference will be 999 times the original digit (again 999 times anything is divisible by 9)

The same sort of thing happens if you move a digit from the tens place to the hundreds or thousands place - it will be worth 10 times or 100 times as much, so the difference will be 9 or 99 times the original digit and therefore divisible by 9.

I tried to avoid explaining with algebraic expressions like using t for the digit in the tenths place, making it worth 10t, but worth 100t if it moves to the hundreds place. A follow up phone call indicated that not only did she understand, but she was able to share the explanation with a curious co-worker.

This sort of puzzle sparked interest in “how the math works” and could be used with students to deepen their understanding. Helping them create an explanation using mathematical symbols would strengthen their sense of mathematical power, while allowing for practice with the base 10 system and using algebraic expressions to represent situations.

*ASMSA hosted the second annual Math and Technology Camp
August 5th through August 8th*



Mrs. Melanie Nichols (Dean of Academic Affairs) welcomes MTC participants and parents to ASMSA.



Students record data collected from an experiment involving the Golden Ratio.

Twenty-three incoming ASMSA juniors arrived on campus on Sunday afternoon and immediately began exploring a number of mathematical topics including: Conjectures, Counting with Factorials, Modular Arithmetic, Sets, Functions and Relations. The ASMSA Mathematics faculty served as instructors for the camp with Marizza Bailey as the primary instructor and designer of the curriculum.

The first MTC was held in the summer of 2006 as the result of the efforts and vision of Mrs. Nichols. She envisioned a camp in which incoming ASMSA juniors would receive an early exposure to the ASMSA social and academic environment in hopes that they would be better equipped to succeed once the regular academic year began. The 2006 MTC students did very well during the 2006 – 2007 school year.

Mrs. Nichols and the ASMSA math faculty are confident that the 2007 MTC participants will also achieve great things this year.

Lack of Technology Equipment Is Not an Excuse Anymore!

In 2006, ACTM purchased two sets of technology equipment for classroom teachers. Each set includes an LCD projector, a spare bulb, and an Interwrite Tablet. ACTM members can apply to use a set for one year in the classroom. You will need to provide a laptop and a cart for the technology. It is expected that the equipment will be used for presentations at the annual Teachers Teaching with Technology (T³) Regional Conference and at the Arkansas Curriculum Conference (ACC). Also, ACTM asks that you make a presentation at one of these conferences (a board member can help you with this presentation). Applications can be found at www.actm.net. They will be accepted and reviewed by the ACTM executive board Technology Loan Program members throughout the year. Applications must be completed in full to avoid any delays in processing the ACTM Technology Loan request. For additional information please contact Jean McGehee at jeanm@uca.edu or Melanie Nichols at nicholsm@asmsa.org.

2007 Summer PD at ASMSA

This summer ASMSA hosted the second annual professional development institute extravaganza. The institutes were held on the ASMSA campus from June 4th to June 8th. A total of 40 teachers participated in one of three institutes: *Algebra Success* (Walt Levissee Instructor), *Geometry Success* (Marizza Bailey Instructor), and *Fundamentals of Calculus* (Mike Sturdivant Instructor). *Algebra Success* and *Geometry Success* focused primarily on teaching strategies with a strong technology emphasis. In particular, the geometry institute focused on the new changes in the Arkansas Geometry Frameworks, which emphasizes proofs and a more rigorous approach to Non-Euclidean Geometry. *Fundamentals of Calculus* was more of a content institute that served as a refresher course for teachers who plan to attend the AP Calculus Summer Institute, thus enabling them to teach Calculus in the near future. Information about the 2008 institutes will be included in the Spring ACTM news letter.

(Continued from page 1)

We will be treated to the school's Folk Music and Acoustics students who will perform for us as well as share the science of their instruments.



Janet Hugo, the Director of ASMSA, will also speak at the luncheon. She is not only a state leader for mathematics, science, and technology, she is also a national leader—serving as the President of the National Consortium for Specialized Secondary Schools of Mathematics, Science, and Technology (NCSSSMST). Dr. Hugo will inspire all of us to play a role in getting our students in the pipeline to training and careers in Science, Technology, Engineering, and Mathematics (STEM).

Awards Could your name be on an award?

Teachers of the Year, Scholarships, and Grants will be announced at the ACTM luncheon held at the ACC Conference, Thursday, November 1, 2007.

In recent years, we have received few applications for scholarships and grants, and we have not given *Teacher of the Year Awards* for three years. It is up to YOU!!!

Please use the forms provided in this issue. If funding has ever stopped you from doing a special project in your classroom, attending another conference, or taking a graduate course, then you need to take the short time it takes to fill out a grant or scholarship form. An unrestricted monetary form is also available for nominated outstanding teachers.

Teachers of the Year must be nominated by ACTM members and should follow the directions on the application.

Teachers Teaching with Technology (T³) Regional Conference
Arkansas School for Mathematics, Sciences and the Arts
200 Whittington Avenue, Hot Springs, Arkansas
January 31, February 1-2, 2008

- ☞ Come and charge your batteries! Energize! Share your experiences! Link!
- ☞ Hear the latest information for TI-Nspire™ math and science learning technology.
- ☞ Attend sessions for elementary and middle school mathematics and science, algebra, geometry, statistics, pre-calculus, calculus, chemistry, biology, and physics.
- ☞ Listen to exciting presentations by teachers who use technology.

Where: Arkansas School for Mathematics, Sciences and the Arts and the Arlington Hotel and Spa, Hot Springs, Arkansas

When: January 31, February 1-2, 2008

***** Registration is limited to the first 500 registrants. The Elementary Short Courses will be held in designated rooms at ASMSA**

Reception: Thursday, January 31, 2008, 6:30 – 9:00 p.m., Arlington Hotel Games, prizes, food and the opportunity to pick up materials before the Friday morning rush!

Sessions at ASMSA: Friday, February 1, 2008, 9:00 AM – 4:30 PM
 Saturday, February 2, 2008, 8:30 AM – 11:40 AM

Hotel Accommodations:

Arlington Hotel and Spa,	239 Central	800-643-1502	double room
			\$ 78.00 plus tax
Velda Rose Hotel & Spa,	218 Park Avenue	888-624-3311	double room
			\$ 72.00 plus tax
Comfort Inn & Suites,	3627 Central Av.	877-682-4442	double room
			\$ 89.99 plus tax

Blocks of rooms will be held until January 1, 2008.

Please make your own reservations.

To receive the conference prices mention the T³ Regional Conference.

Airport Shuttle available from Little Rock Airport:

\$40 per person one way 800-643-1505

Cost: Non-refundable Registration fee: \$50 for ACTM or ASTA members, \$65 for nonmembers, includes Thursday night reception and continental breakfasts Fri & Sat

For more information, call **UCA AR Center for Mathematics and Science Education** at (501)450-3426.

Bring your own calculator(s) or use those provided in the sessions at the Conference.

T³- Regional Conference

One form per person.
Form may be photocopied.

Registration:

\$50 ACTM / ASTA Members _____

\$65 Non-members _____

Math ___ Science ___ (choose one pref.)

Box lunch Friday \$ 5 _____

TOTAL _____

NO REFUNDS

I will attend the complimentary reception Thursday evening.

I will eat complimentary breakfast:

Friday Saturday

Name _____

Home Address _____

City _____

State Zip _____

Phone _____

E-mail Address _____

School Name _____

Elem Middle School

High School Other

Make checks payable to Arkansas Council of Teachers of Mathematics.

Mail Registration Form and Fee to:

ACMSE

**201 Donaghey Ave, Main 212
 Conway, AR 72035**

Phone: (501) 450-3621

Fax: (501) 450-5009

To print a registration form log on to www.arkansasmath.com under the calendar or www.asmsa.org under outreach.

**PLEASE POST ON DEPT.
 BULLETIN BOARD.**

2008 T³ REGIONAL CONFERENCE
SPEAKER PROPOSAL FORM
Hot Springs, AR * February 1-2, 2008

Name _____
 I am a T³ Instructor Circle/Highlight one: National Regional

School or Affiliation _____ State _____

Email Address _____

Home Phone _____ Cell Phone _____

Title of Session _____

Description _____

To email your proposal, delete excess information below and leave only the items that apply in each category. Save with your NAME in the title and email as an attachment.

Session Length (check one) ___ 90 minutes ___ 60 minutes

Content Area (check all that apply) ___ elementary ___ middle school math ___ middle school science
___ Algebra 1 ___ Algebra 2 ___ Geometry ___ Pre-cal/Trig ___ Calculus ___ Statistics
___ Biology ___ Chemistry ___ Physics ___ Other (specify _____)

Technology Focus (check all that apply) ___ TI-Nspire ___ TI-Navigator System ___ TI-73 ___ TI-83/84 Plus Family
___ CBR ___ CBL 2 ___ TI-89 ___ TI-Voyage ___ TI-10 ___ TI-15 ___ TI-Interactive ___ TI-Connect (on computers) ___ TI-Smart View

Participant Technology Level (circle one) NOVICE BEGINNER INTERMEDIATE ADVANCED

Presentation Equipment Needs (check all essential items-calculators will be provided)

___ TI-Navigator System (laptop, access point, hubs, LCD projector)

___ LCD projector ___ Overhead Projector

___ Interactive board (circle/highlight one: Interwrite Board Smart Board Either)

___ Computer Lab (list software needed _____)

___ Other (specify _____)

PLEASE RETURN TO: Aimee Evans, Program Chair
PO Box 2303, Conway, AR 72033 aimee.evans@sbcglobal.net
Message Phone (501) 336-9792

DEADLINE FOR PROPOSALS: NOVEMBER 9, 2007

Arkansas Curriculum Conference 2007 Registration

November 1 and 2, 2007

Little Rock Statehouse Convention Center

Full Name: _____ Badge Name: _____
 School District or Business: _____ E-Mail: _____
 School/Business City: _____ Work Phone: _____ Fax: _____
 Home Address: _____ City: _____ State: _____ Zip Code: _____
 Area(s): Science Social Studies English/Language Arts Mathematics Elementary Other _____

CONFERENCE REGISTRATION FEES (Please Circle)

- Two-Day Pre-Registration Fee\$75.00
(After Oct. 19th : \$85.00)
- One-Day Pre-Registration Fee\$55.00
(After Oct. 19th : \$65.00)
_____ Thursday _____ Friday
- Full-time Student Registration Fee\$20.00
- Non-teaching Guest Badge\$ 5.00
(Name of Guest _____)
- Total Amount From This Section \$ _____**

MEMBERSHIP DUES (Please Circle)

- AR Council for the Social Studies (ACSS)\$15.00
- AR Council of Teachers of English/LA (ACTELA)\$15.00
- AR Council of Teachers of Mathematics (ACTM)\$15.00
- AR Science Teachers Assoc. (ASTA)\$15.00
- School Science & Mathematics Assoc. (SSMA)\$50.00
- PRE-REGISTRATION ONLY!!!!**
- Join ACSS, ACTELA, ACTM, & ASTA ALL for\$44.00
- Or...Join 2 or More Organizations
- 2 or more Organization Circle choices below.**
- AR Council for the Social Studies (ACSS)\$12.50
- AR Council of Teachers of English/LA (ACTELA)\$12.50
- AR Council of Teachers of Mathematics (ACTM)\$7.50
- AR Science Teachers Assoc. (ASTA)\$12.50
- Total Amount From This Section \$ _____**

SHORT COURSES - Please circle the letter(s) of the short course(s) you wish to attend. (Lunch and materials included) See descriptions on page 20. You must be registered for the ACT 2007 conference to attend these courses:

- A Thursday Math: Using TI-Navigator in the Math Classroom (6-12)
- B Friday Science: Science curriculum Ideas from NCLB (6-12)
- C Friday Science: Cheap and Easy Labs—How to Extend Lessons to Include Really Neat Labs (Physical Science/Chemistry/Physics)
- D Friday Math: Improving Math Teaching and Teaching and Learning: Using Investigations in Number, Data and space (K-5)
- E Friday Science: It's elementary—K-4 GLOBE, That Is!
- Total Amount From This Section \$ _____**

SOCIAL FUNCTIONS (Please Circle)

- ACSS Luncheon..... Thursday..... 11:30-1:30\$15.00
- ACTELA Luncheon Thursday 11:30-1:30\$15.00
- ACTM Luncheon Thursday 11:30-1:30\$15.00
- ASTA Luncheon Thursday 11:30-1:30\$15.00

Make checks/POs payable to: ACT 2007

- Check # _____ (NO Credit Cards Accepted)
- ACC Joint Luncheon Friday 11:30-1:30\$15.00
- Total Amount From This Section \$ _____**
- GRAND TOTAL Enclosed \$ _____**

School Districts may pay by purchase order.

P.O. # _____ (must be included)
 Faxed registration with school purchase order only.
 District: _____
 Contact Person: _____
 Phone: (_____) _____

Please include a separate registration form for each person covered by the PO#.

SPECIAL NEEDS (Please check)

____ Visual Impairment _____ Hearing Impairment
 ____ Physical Impairment _____ Other, Please list below:

EARLY RESERVATION DEADLINE - OCTOBER 15TH

Registration Cancellation Policy

Cancellations made prior to October 15th will receive a 100% refund.
 Cancellations made from October 16th - 26th will receive a 50% refund.
 Cancellations made after October 26th will receive NO refund.

RETURN ACT 2007 CONFERENCE REGISTRATION

WITH PAYMENT BY OCTOBER 15, 2007 TO:

Arkansas Conference on Teaching
 c/o Little Rock Convention Bureau
 P.O. Box 207

Little Rock, AR 72203
 501-376-4781 or 1-800-844-4781 Fax: 501-376-4143 (PO #'s only)

NOTE: FOR HOTEL RESERVATIONS

Hotel Reservation form is online this year
DIRECTLY to
 The Peabody Hotel: ATTN, Reservation Department.

Arkansas Curriculum Conference

Tentative Sessions for Thursday, November 1

Matrix #	Title	Session Description
#005	Algebraic Thinking for 5th and Sixth Graders	Most texts do not go far enough to prepare your fifth and sixth graders for success with the algebra SLE's. Learn how to fix it, or at least how to get started.
#010	"Mission: M Possible - Mathematics, Mentors, and Motivation"	Come and experience the missions that our students in grades 7-12 are asked to solve using a TI-84+ graphing calculator and robot. Handouts will be given.
#015	Poster Session: Secondary Math Problems--Algebra Focus	High School students will display interesting algebra problems and explorations that they have solved and explained for topics from Algebra 1 to Algebra 2. Some sponsors will be available at all times to discuss the problems.
#019	Getting to Know the Amended Algebra 1 and Geometry Frameworks	The Algebra 1 and Geometry Frameworks were amended in 2006, and the amendments take effect this school year. This session will look at the changes to these frameworks and will suggest instructional strategies appropriate for implementing the changes.
#021	Proportional Reasoning Connects the Five Content Strands in Middle School	Proportional reasoning is the centerpiece of the middle school curriculum and connects all content strands. Five rich problems - one from each strand will demonstrate how proportional reasoning develops in grades 5-8.
#025	Problem Solving "Counts"	This session will provide teachers with specific tools to guide students into problem-solving strategies. Teachers will leave with lots of ideas to enrich their core math curriculum.
#033	Using Origami for Geometric Exploration and Fun	Students create an origami parallelogram then consider angle measures, segment lengths, areas, and lines of symmetry of the original square and an octagon that transforms into a pinwheel with surprising results.
#034	Poster Session: Secondary Math Problems--Geometry Focus	High School students will display interesting geometry problems and explorations that they have solved and explained for topics from geometry and its connections. Some sponsors will be available at all times to discuss the problems.
#037	Getting to Know the Amended Algebra 2 Frameworks	Arkansas is one of nine states participating in the American Diploma Project. One component of this project includes testing for Algebra 2 to which end a committee of teachers has amended the Algebra 2 Frameworks with approval by the State Board.
#039	Using Handbooks for Interventions in Mathematics Education	This session will showcase reference tools for making connections in Mathematics, Grades 1-5. These tools provide teachers with ideas for remediation and/or acceleration and are appropriate for independent use by students, in class or at home.
#044	Pattern and Function Connections	This will feature how to make concrete connections with patterns, t-tables, graphs, and equations. This involves technology to engage your students! This lesson can be extended in many ways... including linear, quadratic, and exponential functions.
#047	What's New at TI?	Come be N-Spire! Experience the new TI N-Spire handheld as well as other new products, resources, and materials from TI.
#050	Poster Session: Secondary Math Problems--Upper Level Mathematics Focus	High School students will display interesting upper level mathematics problems and explorations that they have solved and explained for topics from Pre-calculus, TCM, and Calculus. Some sponsors will be available at all times to discuss the problems.
#062	ACTM Luncheon	
#082	Beyond Definitions: The language of geometry	Good vocabulary is essential to a deeper study of geometry, so how do you develop children's language and understanding of geometric definitions and properties? We will use manipulative to discuss some experiences students should have.
#089	Using TI-Nspire in the Classroom	This session will include the basics of TI's newest technology: TI-Nspire. Basic functions and activities for Algebra I through Algebra II will be shown.
#092	Poster Session: Secondary Math Problems--Algebra Focus	High School students will display interesting algebra problems and explorations that they have solved and explained for topics from Algebra 1 to Algebra 2. Some sponsors will be available at all times to discuss the problems.
#97	Math and Literacy - The WRITE Combination	This session will focus on cross-curricular writing strategies for Mathematics and Literacy.

More Thursday Sessions

#103	Recommendations for Mathematical "Targets"	In April 2006, NCTM released Curriculum Focal Point for Pre-kindergarten through Grade 8 Mathematics. Come learn about the mathematical concepts recommended as "targets" for each grade level (K-8).
#108	High-tech Investigations for Integrated Math and Science	Experience sensory technology activities with graphics utilities, tools and software for integrated math and science curriculum in the middle school. Activities include temperature, motion, light probes - aligned with NCTM/ NSTA.
#111	Poster Session: Secondary Math Problems--Geometry Focus	High School students will display interesting geometry problems and explorations that they have solved and explained for topics from geometry and its connections. Some sponsors will be available at all times to discuss the problems.
#126	Recommendations for Mathematical "Targets"	In April 2006, NCTM released Curriculum Focal Point for Pre-kindergarten through Grade 8 Mathematics. Come learn about the mathematical concepts recommended as "targets" for each grade level (K-8).
#129	Investigating Shapes, Area and Perimeter	The session will engage participants in solving and analyzing a geometry task centered around area and perimeter to emphasize the importance of a "rich task".
#132	Get A Clue! Using Technology to Solve a "Crime."	Participants will work in small groups and use a variety of tools including the TI-84 to solve a "crime." Each group will present the findings of their investigation.
#136	Poster Session: Secondary Math Problems--Upper Level Mathematics Focus	High School students will display interesting mathematics problems and explorations for topics from Algebra 1 to Calculus. Some sponsors will be available at all times to discuss the problems.
#138	Using PowerPoint for Current Arkansas Frameworks in Math and Science Classrooms	Spend this session learning how to incorporate PowerPoint, United Learning video clips, and inquiry-based activities into your math/science classroom to fill the gaps in teaching the current Arkansas math/science frameworks.
#143	Measurement Conversion and Rate Tables in Third and Fourth Grades	If the unit is bigger, you divide... "what? Has this explanation ever confused your students? Learn a new approach to helping 9 year olds understand measurement conversions and rates.
#151	Lights, Camera, Action! Center Stage with math, science and literacy.	A hands-on approach to center based activities to enhance and provide interventions for math, science and literacy.
#157	Human Number Lines: Engaging Kinesthetic Learners in Middle School Math	Aimed at reaching underperforming sub-populations, students are engaged and out of their seats exploring the properties of inequalities and ordering real numbers.

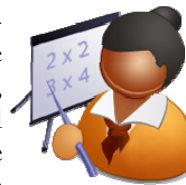
State Department Explores Ways to Deal with Shortage of Mathematics Teachers

Beverly Williams, Assistant Commissioner at ADE, reported two ways in which ADE is trying to alleviate the shortage of teachers in mathematics and other areas. At a September meeting, she told the ACTM Board about the Professional Teaching Permit and a program to prepare middle school teachers to teach 8th Grade Algebra.

The 8th Grade Algebra program is only in the discussion stage, but the permit program is up and running. Current professionals in fields such as forestry, engineering, and industry can apply for

a one-year permit to teach one or two classes per semester in grades 9-12. The applicants must have a bachelor's degree in the content area, pass the appropriate Praxis II Content examination, complete forty professional development hours within the first year. They can renew the permit or eventually enter the teaching field through the alternative licensure program.

Ms. Williams stated that there are sev-



eral perceived benefits. We can build relationships between schools and communities, introduce interesting people to the teaching profession, and create economic opportunities for our students and schools.

This permit program extends to sciences, business, art and music. If you know a need in your schools and an interested professional with the time to teach a class, help them make a match by contacting ADE.

Arkansas Curriculum Conference 2007 Short Course Descriptions

The registration fee for short courses is \$25 except where noted within the description.

Lunch and materials are included in the short course. You must be registered for the ACC 2007 conference to attend these courses. Short Course reservations are only taken on the attached registration form. Tickets for the short courses will be enclosed in your registration packet.

Thursday, November 1, 2007

(Ticket Required)

Math: Grades 6-12

Presenters: Corey Boby and Theresa Watson

Using TI-Navigator in the Math Classroom

Already have a TI-Navigator, but need help. Come learn to do more interactive lessons in less time. Bring your laptop so you practice the activities before returning to the classroom. **Limit – 100 participants.**

Friday, November 2, 2007

(Ticket Required)

Science: Grades 6-12

Presenters: Marian Douglas and Keith Harris

Science Curriculum Ideas from NCLB

Participants from the UALR MSEP and ASMSA NCLB grant will present their curriculum projects developed from the Arkansas Science Academy.

Friday, November 2, 2007

(Ticket Required)

Science: Physical Science/Chemistry/Physics

Presenter: Terri Frost

Cheap and Easy Labs - How to Extend Lessons to Include Really Neat Labs

Come join the fun and find out about some really neat activities that are very cheap to implement. Teachers who work in districts that do not like to spend hundreds on science equipment, then this is just for you.

Friday, November 2, 2007

(Ticket Required)

Math: Grades K-5 Presenters: Bill Nielsen, Judy Trowell and Sarah Hogg

Improving Math Teaching & Teaching and Learning: Using Investigations in Number, Data & Space Learn about new revisions in the Investigations curricula (including the increased emphasis on computational fluency and algebraic thinking), examine characteristics of effective instruction, & share ideas about implementation.

Friday, November 2, 2007

(Ticket Required)

Time: 8:00 a.m. - 3:00p.m.

Science: Grades K-4
Presenter: Lynne Hehr

Please note this course is \$50.

It's Elementary – K-4 GLOBE, That Is!

Explore the world of earth and environmental science in this hands-on, inquiry- and content-driven day! Investigate earth systems, clouds, hummingbirds, soils, and water with Elementary GLOBE storybooks, lessons and much more! All participants will receive the Elementary GLOBE certification, the Elementary GLOBE teacher guide, CD and 5 storybooks plus **ACC** luncheon tickets. **Limit – 24 participants.**

2008 T³ INTERNATIONAL CONFERENCE

GET THE SKILLS YOU NEED UNDER YOUR BELT.

*February 29-March 2, 2008
Hyatt Regency - Dallas*

No other conference for K-college math and science teachers offers you more exciting professional development and networking opportunities than the 2008 T3 International Conference in Dallas. This inspiring two-and-a-half-day event – our 20th Anniversary conference – is a great time to build your teaching skills, enhance your curriculum and lead your



students to higher achievement – all by learning to integrate the latest TI technology into your classroom.

Whether you're a first-year teacher or an experienced educator, you'll have the choice of more than 400 sessions to attend, filled with hands-on activities and led by some of the most respected presenters in math and science education.

Arkansas Curriculum Conference

Tentative Sessions for Friday, November 2

Matrix #	Title	Session Description
#202	A Treasure Chest of Trigonometry Activities	Participants will engage in a variety of trig activities which include Law of Sines and Cosines, trig identities, problem solving, graphs of trig functions, and other topics. Some Kagan activities will be included. All are easy-to-make activities.
#206	Patterns are Powerful! Construct or not to Construct? Teach students to think!	Is the figural pattern linear or quadratic? Involve students in writing their own definitions and conjectures. Use Cabri Jr. or traditional construction techniques for new geometry frameworks? BYOC
#211	Integrating Math & Science Through Investigations	Participants will be involved in fun, activity based investigations which integrate skills needed in both math and science. Hand-outs will be provided.
#215	Improving Mathematics Teaching and Learning: Using Investigations in Number, Data and Space	Learn about new revisions in the Investigations curricula (including the increased emphasis on computational fluency and algebraic thinking), examine characteristics of effective instruction, & share ideas about implementation.
#217	Using TI-Navigator in the Math Classroom	Already have a TI-Navigator, but need help. Come learn to do more interactive lessons in less time. Bring your laptop so you practice the activities before returning to the classroom.
#221	Up to Speed with TI-Navigator's Activity Center	TI-Navigator's Activity Center allows students to contribute real-time to a shared workspace. A good question and the Activity Center can be all you need to create a mathematical learning community in your classroom with topics such as linear inequalities.
#223	"Show Me The Math!" Using the Process of Representation to Teach Math.	This session will investigate the math process of Representation as a way for students to understand math concepts and for teachers to assess student understanding. Handouts will provide hands-on activities.
#233	How Big is Big? Proportional Reasoning for the Middle School	The purpose of this session is to provide participants with novel activities that illustrate the importance of proportional thinking in the middle school.
#234	VersaTiles--A quick and easy way to introduce and reinforce concepts in the Secondary Math Classroom	Ready-Made Activities using VersaTiles will be used to explore concepts in Algebra I through Calculus. Participants will also learn to write an activity.
#242	Optimism: What's the Largest Rectangle That Can Fit in an Ellipse?	Participants will estimate the area of the largest rectangle that fits into a given ellipse. The actual area will be found using calculus and the TI-84 and TI-89. Bring your own calculators.
#247	Using Geolegs in the Middle School classroom	The purpose of the geoleg workshop is to learn a standards based geometry/measurement program that teaches multiple math strands while emphasizing measurement and geometry. The geoleg manipulative will be introduced.
#252	Teaching Function and Representation in Pre-Algebra/Algebra	The session will focus on the importance of multiple representation in developing the concept of function for pre-algebra and algebra students.
#253	Operation Box Cars-Elementary Math Games	This game workshop focuses on the best card and dice games that help students understand and master the basic operations. By connecting games practice with strategies students will become more empowered and successful. Come prepared to play.
#261	TI-Nspire™ and the Activity Exchange: How To Move To This New Technology	Learn of the new TI-Nspire™ device and see how the Activity Exchange will help you use this tool with your children.
#271	Motivating students to learn how to prove, and Non-Euclidean Geometry.	Proofs are back. I found I can motivate students to want to learn proofs if I tell them they are learning "How to argue, and win every time." I would also like to present a conceptual, yet intuitive lesson in Non-Euclidean Geometry.
#278	Activities on the TI-89	After a brief introduction to the TI-89 calculator, participants will use it to investigate some activities from Algebra and Calculus.

About Mathematics Education Trust

Supporting Teachers... Reaching Students... Building Futures

Established by the National Council of Teachers of Mathematics, the Mathematics Education Trust (MET) offers opportunities to expand your professional horizons! MET supports the improvement of mathematics teaching and learning at the classroom level through the funding of grants, awards, honors, and other projects by channeling the generosity of contributors into classroom-based efforts that benefit all students.

MET provides funds to support classroom teachers in the areas of im-

proving classroom practices and increasing teachers' mathematical knowledge. MET also sponsors activities for prospective teachers and NCTM's Affiliates, as well as recognizing the lifetime achievement of leaders in mathematics education. There may be a program that's just right for you!

The NCTM Lifetime Achievement Awards are presented annually following a nomination and selection process. Other awards are available through a competitive process based on proposals submitted by individual applicants. All 2008–09 applications must be postmarked by **November 2, 2007**.

Applications for the 2008–09 [Prospective Secondary Teacher Course Work Scholarship](#) must be postmarked by **May 9, 2008**.

Please help us support these programs! [Send your tax-deductible gift to MET](#). Your gift, no matter its size, will help us reach our goal of providing a high-quality mathematics learning experience for all students.



Grants, Scholarships, and Awards

go to <http://www.nctm.org/met.aspx#grants> for more information

More Friday ACC Sessions

#280	Using TI-Nspire in the classroom	This session will include the basics of TI's newest technology: TI-Nspire. Basic functions and activities for Algebra I through Algebra II will be shown.
#288	Mixing Math and Science in the Lab	Can it really be done? Can math and science co-exist? I believe they can and we can make it easier for you. Join us in a fun day of seeing how we can make the Math and Science Frameworks work for us.
#292	Teaching Algebra and Geometry using Cabri Jr	Cabri Jr. activities will be demonstrated. Graphing calculators will be provided to use in the session. Files will be given to all who bring their own graphing calculator.
#297	Tools for Geometric Constructions in Middle School	Participants will demonstrate understanding of seven basic geometric constructions using a compass, straightedge, and protractor. Several different varieties of tools will be used. These will be compared to constructions using Geometer's Sketchpad.
#299	Integrating Science and Math through Aerospace Activities	Participants will be engaged in hands-on aerospace activities which help in the development of science and math concepts. Handouts will be provided.
#300	Analysis of the 2007 ACTM Algebra II Regional Exam	An item analysis of the 2007 ACTM Algebra II regional exam will be presented along with a comparison to the 2006 exam.
#302	POWER PLAY - GAMES FOR TEACHING PLACE VALUE	Get your students on the Power Play Team. Games will cover place value concepts including: rounding, expanding, ordering, comparing and reading large numbers, decimals and more. Games will incorporate the use of cards, dice and multi-sided place value dice.

Tips for Writing Successful Proposals

1. Match your proposal to the intent of the grant you are seeking.

DO make certain your idea falls under the broad umbrella of the grant. Build on the NCTM *Principles and Standards*. State your goals (usually one or two) and objectives clearly. Remember a goal is a broad statement about what you hope to accomplish. It usually is not measurable. An objective is a specific statement about what you will do and is measurable.

DON'T be unrealistic and aim for “pie in the sky.”

2. Delineate your plan.

DO be specific about what you will do and when you will do it. A timeline shows good planning and helps bring life to the proposal. Write clearly and succinctly. Demonstrate the alignment of your planned activities to your goals, objectives, and grant requirements.

DON'T expect proposal readers to figure out what you are going to do; they want you to tell them your plan.

DON'T use excess verbiage or language that is unnecessary.

3. Observe technical guidelines.

DO read the directions on the RFP (request for proposal) carefully and make certain you include everything mentioned. Not following directions is one of the major reasons many proposals are not funded. Have a sound budget. Get estimates about the costs to be incurred and the length of time needed to complete the project.

DON'T exceed the page limit, font size, or budget limits. Don't exaggerate or be unrealistic about the budget or resources needed for the project.

4. Emphasize the benefits to students.

DO show a need for the project and have a creative solution to the problem. Focus on the expected impact on student learning.

DON'T philosophize in the proposal.

5. Describe possible long-term implications.

DO have an evaluation plan that measures the objectives you have laid out. Describe how assessment information will be collected, used, and reported.

DON'T promise more than you can deliver.

6. Enlist the support of your principal, supervisor, and colleagues.

DO make certain persons that you ask to write your letters indicate their strong support and commitment to your project. Provide them with a copy of your proposal so that they will understand the details and requirements of your project.

DON'T forget to have someone not connected to your project read it and the RFP to see if it makes sense and all guidelines are met. A new pair of eyes can be very helpful.

ACTM HOSPITALITY ROOM

ACTM members are invited to relax in the ACTM Hospitality Room.

☺ Continental breakfasts: Thursday and Friday mornings, 6:30 am — 8:30 am

☺ Informal Reception: Thursday evening, 4:30 pm - 6:30 pm

Elementary Math Specialists:2007-2008

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Stanley Paul, Mathematics Specialist

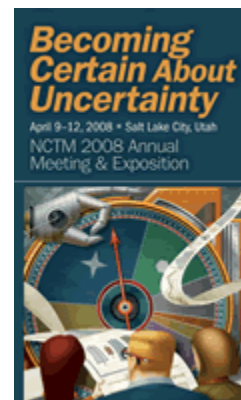
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ACTM Technology Loan Application

Arkansas Council of Teachers of Mathematics is pleased to offer to ACTM members the opportunity to use an Interwrite Tablet and Digital Projector in their classrooms and professional presentations during **one** school year. It is expected that the equipment will be used for presentations at the annual Teachers Teaching with Technology (T³) Regional Conference and at the Arkansas Curriculum Conference (ACC). Two Interwrite Tablets and Digital Projectors will be available for loan to ACTM members. Applications will be accepted and reviewed by the ACTM executive board Technology Loan Program members throughout the year. Applications will be throughout the school year.

Directions: Please complete all information requested on this application form. Applications must be completed in full to avoid any delays in processing the ACTM Technology Loan request. For additional information please contact Jean McGehee at jeanm@uca.edu or Melanie Nichols at nicholsm@asmsa.org

Name of ACTM Member: _____

Home Address: _____

Home Phone: _____ Email: _____

School District/Educational Agency Name: _____

School District Administrator: _____

School District/Educational Agency Address: _____

School District/Educational Agency Phone: _____

Equipment will be hand delivered when feasible, otherwise equipment will be mailed. Mailing address: (*Please use exact address. UPS will not deliver to Post Office Boxes*)

Plan for ACTM Technology Loan Program Equipment

1. Specific classes or areas of proposed technology use:

2. Plans for sharing of technology. **Must include at least one presentation at either a Regional Teachers Teaching with Technology (T³) conference or the Arkansas Conference on Teaching (ACT).**

3. Statement of current educational or instructional needs for technology:

4. Short term and long term technology goals:

All signatures required:

I accept responsibility to maintain the Interwrite Tablet and Digital Projector in good working condition while it is in my possession.

ACTM Member Signature _____ **Date** _____

I understand that the ACTM Technology Loan Program has made the Interwrite Tablet and Digital Projector technology available for a limited period of time. It will be my responsibility to return the equipment to a member of the ACTM executive board Technology Loan Program on or before May 15 of my technology loan award year.

ACTM Member Signature _____ **Date** _____

During the time the Interwrite Tablet and Digital Projector are loaned to the above named ACTM member, the ACTM Member's School or Educational Agency will be responsible for:

- 1) Providing insurance coverage under their school or educational agency insurance plan for the Interwrite Tablet and Digital Projector.
- 2) Repair expenses for the Interwrite Tablet and Digital Projector
- 3) Providing replacement bulbs as needed for the Digital Projector
- 4) Providing a computer to be used with the Interwrite Tablet and Projector
- 5) Providing a presentation cart on which to store and transport the Interwrite Tablet and Projector

ACTM Member's School Principal/Agency Administrator _____

Title _____

Please return the completed application by October 15, 2007 to:

**Brad Roberts
P.O. Box 327
Pleasant Plains, AR 72568
Broberts@bradford.wmsc.k12.ar.us**

