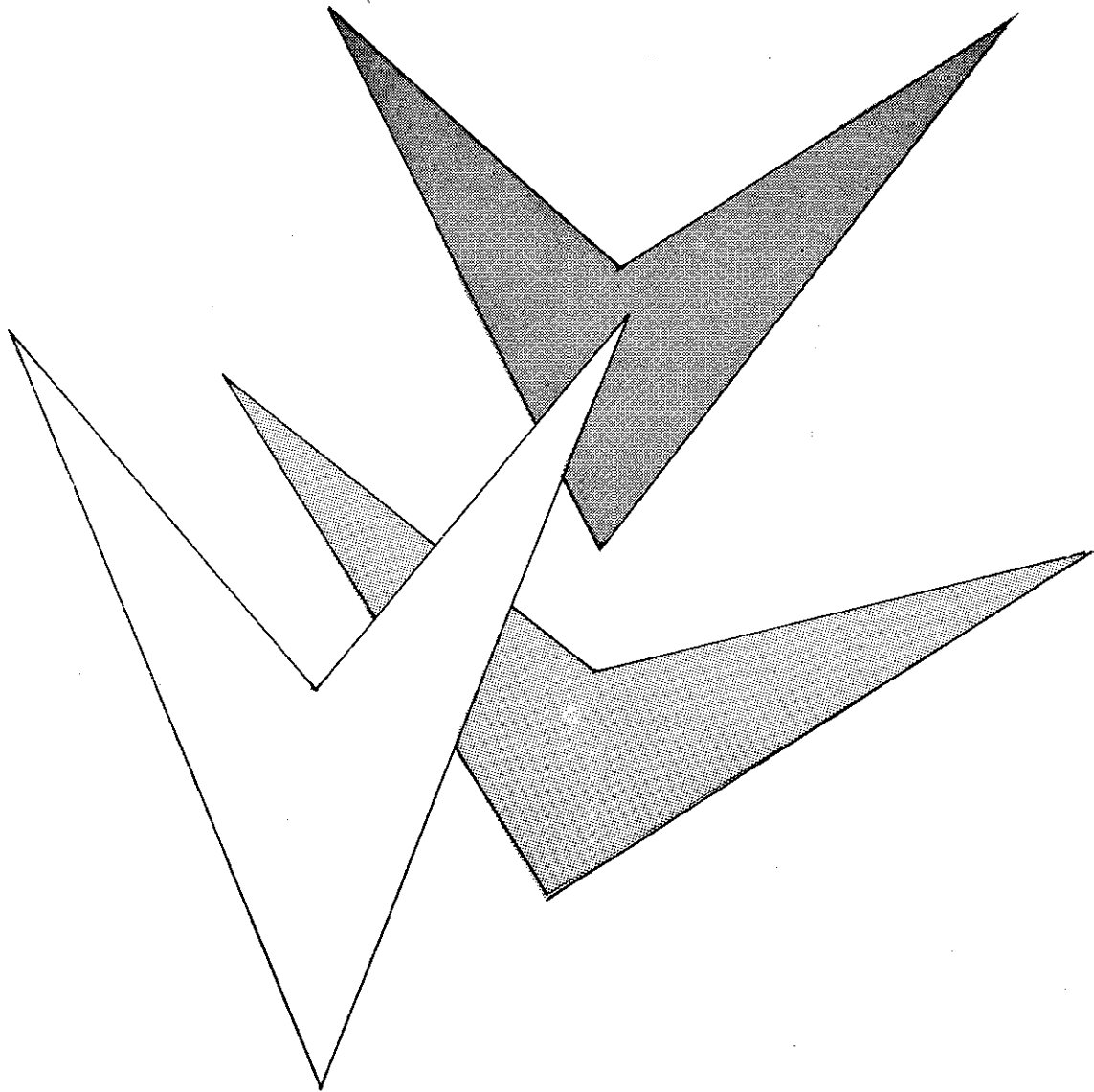


TEXAS MATHEMATICS TEACHER



Texas Council of Teachers of Mathematics

TEXAS MATHEMATICS TEACHER is a refereed journal and is the official journal of the Texas Council of Teachers of Mathematics. The views expressed are the contributor's own and are not necessarily those of the publisher or the editor. All manuscripts and correspondence about this publication should be addressed to Mr. J. William Brown, Texas Mathematics Teacher, 3632 Normandy Avenue, Dallas, Texas 75205. Manuscripts should be typed (letter-quality print is acceptable) double spaced throughout with wide margins, on 8 1/2 x 11 paper, and with figures on separate sheets. No author identification should appear on the manuscript. Five copies are required.

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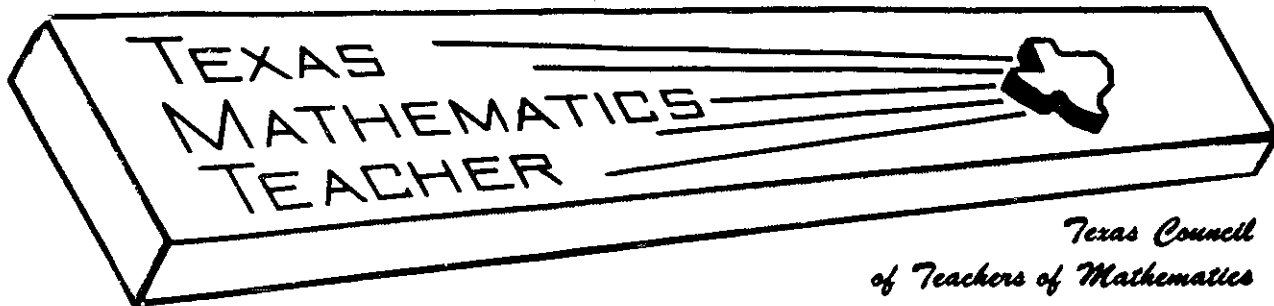
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Volume XXXIV

May, 1987

No. 3

President's Message

A man was searching diligently in a sunlit field for a key. A friend stopped to help. After a while the friend said, "This is a large field, where did you lose it?" "In the house," the man replied. Said the friend, "Then why are we looking in the field?" "The light is better out here," was the response.*

What has happened along the way of your career? Have you the same eagerness to face each day that you felt in the beginning? Are you one of the fortunate whose joy, delight, and satisfaction has increased over the years? Or have you lost the key? We hear much about "burnout" in careers with high stress. Certainly we involved in education are feeling a lot of stress. The reasons range from hot and humid classrooms with no air conditioning, to being evaluated or evaluating others according to TTAS, to budget cuts threatening the existence of summer school at the university level.

Where do we look for the key? Some leave education to look in the field. I hope most of us will do our searching where we lost it, but will make the light better for ourselves and others. Jim Stones (always quotable, but even more so at present because he holds the title Texas Teacher of the Year) said, "Never have we needed each other more than now." That's true. Take time to offer support and encouragement to others. Point out a job well done. We all thrive on compliments. Dish out a few this week and watch the climate around you grow more positive and nurturing.

In your search for career contentment do something new and different, keep learning, and strive to meet new challenges. Teach a course you've never taught before; serve on a textbook committee; attend a workshop or summer institute like the Woodrow Wilson Functions Institute at the University of Houston in July; volunteer to do a presentation for a district in-service meeting or at CAMT next year. Challenge yourself!

High on your list of ways to grow and learn, place attendance at the Conference for the Advancement of Mathematics Teaching, August 3-5 in Austin. You've probably already received a copy of the program book. There are 311 sessions from which you can choose topics addressing every possible interest from kindergarten math to calculus. While you are attending sessions you can receive 15 hours of Advanced Academic Training (AAT) credit.

Be sure to register to attend the 2nd annual TCTM Breakfast and Business Meeting on Tuesday, August 4, at the Hyatt. ONLY MEMBERS are invited and YOU MUST MAKE RESERVATIONS to be included in breakfast. You may attend the meeting at 7:30 without reservations of course. Yes, 7 a.m. is early, but I'm expecting to see YOU there!

There are a couple of other important items to look for as you read this issue of the journal. For first time CAMT goes there are two \$100 scholarships being offered. There is a ballot for election of officers and for by-laws changes. We of TCTM are responsible for On-Site-Registration during the CAMT conference. Find the volunteer form included in this journal and respond to it. If you have friends who get busy and forget to read their TEXAS MATHEMATICS TEACHER, remind them to look at this one because it contains many items of importance. Thanks for your help. I'll see you at the registration table at CAMT and at breakfast on August 4.

Maggie Dement
Maggie Dement

*Another Bill Forbes story

P.S. Math Councils giving CAMT scholarships are: San Jacinto: two \$100 scholarships; Rio Grande: six \$50 scholarships; Spring Branch: five \$100 scholarships. How about your local council?

DATES FOR CAMT

1987: August 3 - 5

1988: August 2 - 4

Note your mailing label for renewal date of TCTM membership!

CAMT Registration

Help is needed! TCTM's major contribution to the Conference for the Advancement of Mathematics is On-Site-Registration. The registration table is in operation during the entire conference. Working there is your opportunity to be involved in making the CAMT conference a success! Forty hours of volunteer time from TCTM members are needed to keep that table going. The more volunteers, the fewer hours anyone will spend. The heavy traffic times will be Monday afternoon and Tuesday morning.

Use this form to volunteer to work at the registration table. Mail to:
Maggie Dement
4622 Pine
Bellaire, TX 77401

I will help at the On-Site-Registration desk during the Conference for the Advancement of Mathematics Teaching, August 3-5, Austin, TX.

Times I cannot help _____

Times I would especially like to help _____

I don't care, just assign me to _____ hours whenever you need me.

Name _____

Address _____

City _____

Telephone _____

(Xerox, List Data, and Mail)

TCTM BREAKFAST AND BUSINESS MEETING

There will be a 2nd annual Breakfast and Business Meeting of the Texas Council of Teachers of Mathematics. It will be at the Hyatt in Texas III at 7 a.m., Tuesday, August 4, in Austin. If you're going to the Conference for the Advancement of Mathematics Teaching, be sure to MAIL your reservation for the breakfast by JULY 18. This event is for members only and breakfast is BY RESERVATION ONLY. Please don't make a reservation unless you are certain that you can attend.

Mail to Maggie Dement
4622 Pine
Bellaire, TX 77401 By JULY 18

Name _____ Address _____

City _____ Local Council _____

Major interest is in

___ Elementary ___ Middle School ___ High School

I will attend the TCTM Breakfast and Business Meeting, August 4.

(Xerox, List Data, and Mail)

CAMT SCHOLARSHIPS

Are you a TCTM member who has never before attended the Conference for the Advancement of Mathematics Teaching? Is your trip to CAMT this summer not being funded by your district or local math council? Do you have a position for the fall of 87 teaching mathematics or in which you influence math education? If your answer to all three questions was "yes," then you are eligible to apply for the two TCTM \$100 scholarships for CAMT.

On this form get the appropriate signature and mail it with the recommendation and your statement by JUNE 8 to

Maggie Dement
4622 Pine
Bellaire, TX 77401

Name _____ Address _____

City _____ Local Math Council _____

POSITION (be specific, as in teacher of 3rd grade) _____

- 1) verification: I verify that _____
- a) has not previously attended CAMT in Austin,
 - b) Is not receiving district or math council funds for the trip this August 3-5, and
 - c) has a position teaching mathematics or influencing math education for the fall of 87.

Principal (if applicant is a teacher) or supervisor

- 2) A brief recommendation from your principal or supervisor.
3) An account by the applicant of a) how the ideas received at CAMT will be shared with colleagues and b) how attendance at CAMT might influence job performance.

If you are a winner, you will be notified by the end of June. Be sure to make reservation for the TCTM breakfast and business meeting on August 4 during CAMT, for winners will be introduced and the \$100 checks will be awarded at that time.

(Xerox, List Data, and Mail)

!!ATTENTION!!

(Determine if YOUR County is listed in the Regions electing Directors on Ballot; if so, VOTE!). A listing of the counties in each REGION is given below.

NORTHEAST REGION

- VI- Austin, Brazos, Burleson, Colorado, Grimes, Houston, Leon, Liberty, Madison, Milam, Montgomery, Polk, Robertson, San Jacinto, Trinity, Walker, Waller, and Washington
- VII- Anderson, Angelina, Cherokee, Henderson, Nacogdo, Panola, Rusk, Sabine, San Augustine, Shelby, Smith, and Van Zandt
- VIII- Bowie, Camp, Cass, Delta, Franklin, Gregg, Harrison, Hopkins, Lamar, Marion, Morris, Rains, Red River, Titus, Upshur, and Wood
- X- Collin, Dallas, Ellis, Fannin, Grayson, Hunt, Kaufman, and Rockwall
- XII- Bell, Bosque, Coryell, Falls, Freestone, Hamilton, Hill, Lampasas, Limestone, McLennan, Mills, and Navarro

NORTHWEST REGION

- IX- Archer, Baylor, Clay, Foard, Hardeman, Jack, Knox, Montague, Throckmorton, Wichita, Wilbarger, and Young
- XI- Cooke, Denton, Hood, Johnson, Palo Pinto, Parker, Somervell, Tarrant, and Wise
- XIV- Callahan, Eastland, Fisher, Haskell, Jones, Notan, Scurry, Shackelford, Stephens, Stonewall, and Taylor
- XVI- Armstrong, Briscoe, Carson, Castro, Childress, Collingsworth, Dallam, Deaf Smith, Donley, Gray, Hall, Hansford, Hartley, Hemphill, Hutchinson, Lipscomb, Moore, Ochiltree, Oldham, Parmer, Potter, Randall, Roberts, Sherman, Swisher, and Wheeler.
- XVII- Bailey, Cochran, Crosby, Cottle, Dickens, Floyd, Garza, Hale, Hockley, Kent, King, Lamb, Lubbock, Lynn, Motley, Terry, and Yoakum

(CONTINUED, PAGE 7)

STUFF Strategic Tactics Ultimately For Fun

Dear T.C.T.M. Members:

We are finishing up for another year. Hope you feel more completed than we do. Take one last look around your classroom for ideas for the fall editions of S.T.U.F.F. We still need you even though we have been able to survive in the past! We are now separated; Judy in Kilgore, Bettye in Houston. This means we will need your support even more.

Remember! One activity will give you a year's membership in T.C.T.M. and the State Journal. Don't you want to see your name in print!?! Send your ideas to: Judy Lynn Tate, Region VII ESC, P.O. Box 1622, Kilgore, TX 75662.

The STUFF Staff
Bettye and Judy

Primary

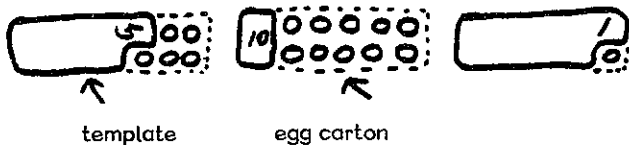
Are missing addends a headache? Try this idea: Cut egg cartons to have cups or cells for each number desired. Staple a numeral label on the edge.

Example:



For a problem such as, $3 + \underline{\quad} = 5$, put 3 counters, beans, buttons, etc. into 3 cups. The empty cups visually show and direct the child to count "how many more" are needed to make 5.

A variation of the above from Sharon Stark, Resource Teacher, is to make templates to fit on top of an uncut egg carton. Cut out portion exposes the cups as desired. Label each template to correspond to the exposed number of cups.



Use for missing addend work as above.

Elementary

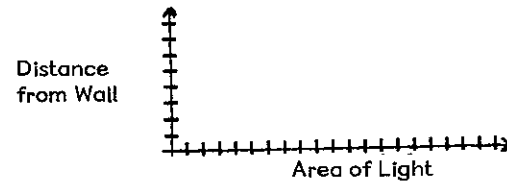
How Much Area Will a Flashlight Cover?

Tape a large sheet of wrapping paper, chart paper, or newsprint to the wall. With a yard stick, rule off one inch squares. Darken the room and shine a flashlight straight at the center of the paper. Hold the flashlight almost against the paper. Draw the outline of the light. Estimate the number of square inches of light.

Build a data table as below:

Area of Light	Distance from Wall	Increase in Area
5	0	-
	10	
	20	

Record your information, make other measures at 10 inch units from the paper. What patterns are noted? Can you graph the data?



Here are a series of questions for you and your class to work on:

Make up a series of numbers

- * each member being exactly divisible by 3.
- * each member exactly divisible by 4.
- * each member of which has a remainder of 1 when divided by 5.
- * each member of which has a remainder of 5 when divided by 4.
- * (even) each member of which is divisible by 3.
- * (odd) each member of which is exactly divisible by 3.
- * (odd) each member of which is exactly divisible by 5.
- * greater than 15 and less than 29, each member of which is exactly divisible by 4.
- * (odd) each member of which is exactly divisible by both 3 and 5.
- * (even) greater than 7 and less than 20, each member of which is exactly divisible by both 2 and 3.
- * (even) each member of which is not divisible by 3 or 5, but is divisible exactly by 2.
- * (even) each member of which leaves a remainder of 1 or 2 when divided by 3 or 6.

Can you make up some directions of your own for certain series to be generated? Do these examples entail some problem solving as well as computational ability?

Middle School

Collecting and Interpreting Weather Data

This project is most effective if conducted when the seasons are changing. Have each student make a chart to record the following weather data:

1. Daily high temperature
2. Daily low temperature
3. Record high temperature
4. Record low temperature
5. Minutes of sunshine
6. Percent of possible sunshine
7. Precipitation total for the day
8. Precipitation total for the month
9. Precipitation total for the year
10. Sunrise
11. Sunset

(Other categories can be added.)

Prepare a bulletin board for recording the daily weather data.

Every morning before classes begin, tape record the local weather data that is broadcast by NOAA and received on special weather radios. If you do not have access to one of these radios you can get this information from the morning newspaper and make your own recordings.

Immediately after the tardy bell rings play the recording twice. (This gets the students quiet and in their desks quickly.) Students record the data on the charts they prepared earlier. While the recorder is playing the teacher can use this time to take roll. At the end of each day record the data on

the bulletin board so that absent students can keep their charts up to date. Follow this procedure for four weeks.

On the fifth week divide the class into groups. The number of groups and group size will vary according to the class size and the number of categories used. The following is an example of group assignments:

- GROUP 1a - Make a line graph showing the daily high temperature, daily low temperature, and the average daily record highs and lows for weeks 1 and 2.
- GROUP 1b - Same as Group 1a except use weeks 3 & 4.
- GROUP 2a - Make a double bar graph for the daily record highs and lows for weeks 1 and 2.
- GROUP 2b - Use weeks 3 and 4.
- GROUP 3a - Make a line graph showing the change in sunrise (A.M.) and sunset (P.M.) for weeks 1 and 2.
- GROUP 3b - Use weeks 3 and 4.
- GROUP 4a - Make a bar graph showing the minutes of sunshine each day and a second bar graph showing the daily percent of possible sunshine for weeks 1 and 2.
- GROUP 4b - Use weeks 3 and 4.
- GROUP 5a - Make a line graph showing the precipitation totals for the day, month, and year for weeks 1 and 2.
- GROUP 5b - Use weeks 3 and 4.

Mary Runyon
Ysleta ISD
El Paso, TX

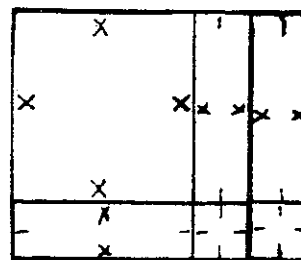
Senior High

FACT - R - BLOCKO

- PLAYERS:** 2 to 5
1 scorekeeper
- MATERIALS:** 4 to 6 squares, X units on a side (called "X-squares"), for each player
- 12 or more rectangles, one unit by X units (called "X's", for each player.
- 15 or more squares, one unit on a side (called "1's", for each player.
- A set of cards with factorable polynomials (leading coefficient of one)

DIRECTIONS: Shuffle the cards and place face down in the center of the table. Turn over the top card. Each player chooses the number of squares and rectangles indicated on the card and tries to arrange it in a rectangle

Example: $x^2 + 3x + 2$



1 "X square"
3 "X's"
2 "1's"
can be arranged like this

and raises his or her hand when completed. The first player to do so gives his answer

Example: $(x + 2)(x + 1)$

and the scorekeeper checks the answer with the solution key, the number in the upper left hand corner of the card corresponding to the problem number on the key. The key is a list of the polynomials and their factors.

If a player does not give a correct answer, the next player who raised his or her hand gives the answer, etc. The player who gives the correct answer takes the card.

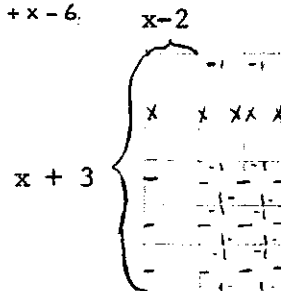
Play continues until all cards are gone. The player with the largest number of cards is the winner.

VARIATION FOR MAJOR WORK CLASSES:

Cards can be made up to factor such polynomials as

$x^2 + x - 6$ by designating one side of the rectangle and one side of "1's" as being negative.

Example: $x^2 + x - 6$



Using
1 "X square"
1 "X"
(3⁺ and 2⁻ X's)
6 "1's"

(CONTINUED FROM PAGE 5)

SOUTHEAST REGION

- I- Cameron, Hidalgo, Jim Hogg, Starr, Webb, Willacy, and Zapata
- II- Aransas, Brooks, Duval, Jim Wells, Kenedy, Kleberg, Live Oak, Nueces, and San Patricio
- III- Bee, Calhoun, Dewitt, Goliad, Jackson, Karnes, Lavaca, Matagorda, Refugio, Victoria, and Wharton
- IV- Brazoria, Fort Bend, Galveston, and Harris
- V- Chambers, Hardin, Jasper, Jefferson, Newton, Orange, and Tyler

SOUTHWEST REGION

- XIII- Bastrop, Blanco, Burnett, Caldwell, Comal, Fayette, Gillespie, Gonzales, Guadalupe, Hays, Llano, Lee, Travis, and Williamson
- XV- Brown, Coke, Coleman, Comanche, Concho, Crockett, Erath, Irion, Kimble, Mason, McCullough, Menard, Runnels, San Saba, Schleicher, Sterling, Sutton, and Tom Green
- XVIII- Andrews, Borden, Crane, Dawson, Ector, Gaines, Glasscock, Howard, Loving, Martin, Midland, Mitchell, Pecos, Reagan, Terrell, Upton, Ward, and Winkler
- XIX- Brewster, Culbertson, El Paso, Hudspeth, Jeff Davis, Presidio, and Reeves
- XX- Atascosa, Bandera, Bexar, Dimmit, Edwards, Frio, Kendall, Kerr, Kinney, LaSalle, Maverick, McMullen, Medina, Real, Uvalde, Val Verde, Wilson, and Zavala

CANDIDATE INFORMATION

<u>Position</u>	<u>Memberships</u>	<u>Current offices/honors</u>
<u>President-elect: OTTO BIELESS</u> Mathematics teacher/ Department Chairman Skyline Center, Dallas ISD	Greater Dallas CTM NT Area Advanced Placement TCTM, NCTM, MAA	President-elect GDCTM
<u>President-elect: BILL DUNCKER</u> Secondary math coordinator Midland ISD	West Texas Frontier CTM (NEW affiliate!) TCTM, NCTM, MAA	President-elect NFCTM
<u>Treasurer: SALLY LEWIS</u> Mathematics Teacher/ Department Chairman Randolph HS Randolph ISD	Alamo CTM TCTM, NCTM Phi Delta Kappa Steering Committee FOM Conference	Finalist: Greater San Antonio Chamber of Commerce Excellent Educator
<u>Treasurer: BARRIE SHEFFIELD</u> Secondary Math Consultant Irving ISD	GDCTM, TCTM, NCTM Metroplex Supervisors Group TASCD, ASCD Phi Delta Kappa	
<u>Parliamentarian: DIANN RESNICK</u> Mathematics Teacher/ Department Chairman Bellaire HS Houston ISD	Houston CTM TCTM, NCTM, MAA Calculus Ele. Analysis Teachers of Houston	Past-president HCTM Woodrow Wilson Fellow Director Rice NSF Institute Director CEATH
<u>Parliamentarian: MARILYN RINDFUSS</u> Mathematics Teacher/ Department Chairman St. Mary's Hall San Antonio	Alamo District CTM TCTM Independent School Assoc. Southwest SAT Review Board	President, ADCTM Program Director for Math, ISAS
<u>Director, Northwest Region: JUDY NORMAN</u> Mathematics Teacher Burleson HS	TCTM NCTM	
<u>Director, Northwest Region: SALLY ANN RUCKER</u> Mathematics Teacher/ Department Chairman Alamo Jr. High	WT Frontier CTM TCTM, NCTM Midland EA TSTA, NEA	
<u>Director, Northeast Region: BOB MORA</u> Mathematics Coordinator K-12 Carrollton-Farmers Branch ISD Part-time college instructor	GDCTM, TCTM, NCTM TASM, NASM, ASCD NCTASCD, MAA	Editor, GDCTM
<u>Director, Northeast Region: TOMMY TOMLINSON</u> Retired Director, Adult Evening School, Tyler ISD	ETCTM, TCTM, NCTM TASM, TSTA, TASCD Phi Delta Kappa	Northeast Director, TCTM Honored by ETCTM for long years of Outstanding Service

TCTM Election Ballot

Please vote immediately and mail. The mailing address is on the back of this page, so you can fold, staple, stamp, and mail. It MUST be postmarked by June 8. Read the Candidate information in this issue of the journal.

President-elect Otto Bieless
 Bill Duncker

Treasurer Sally Lewis
 Barrie Sheffield

Parliamentarian Diann Resnick
 Marilyn Rindfuss

Check the list of regions by county (printed elsewhere in this journal) to see if you vote on the next two offices.

You must live in the Northwest Region to vote on:

Director, Northwest Region Judy Norman
 Sally Ann Rucker

You must live in the Northeast Region to vote on:

Director, Northeast Region Bob Mora
 Tommy Tomlinson

The Executive Committee of TCTM recommends Honorary Membership be bestowed on our retiring editor, J. William Brown.

Please vote: yes
 no

Constitutional changes which were discussed in the January issue of the journal, page 5.

yes ARTICLE VI Section 2

no Membership Dues
a. Annual dues for any active member shall be eight dollars.
b. Annual dues for any associate member shall be four dollars.
c. There shall be no annual dues for honorary members.

yes ARTICLE VII Section 1

no One regular meeting of the Texas Council of Teachers of Mathematics shall be held at the annual meeting of the Conference for the Advancement of Mathematics Teaching (CAMT). A quorum shall consist of twenty-five members.

1887

George H. Willson
2920 Bristol
Denton, TX 76201

Attention Educators of Texas Elementary School Mathematics

Something new is building up steam in Texas. Welcome to the birth of STEAM, an organization for teachers and others interested in elementary school mathematics. STEAM is a section of the Texas Council of Teachers of Mathematics, an affiliate of the National Council of Teachers of Mathematics.

The purposes of STEAM are:

- * to improve mathematics teaching in elementary schools
- * to create and maintain greater interest in the learning and teaching of mathematics at the elementary school level
- * to provide services and opportunities for the professional growth, development, and training of elementary teachers of mathematics
- * to serve as a forum for teachers and others interested in elementary mathematics education in Texas and the nation
- * to promote the value of learning mathematics among other educators and citizens of Texas
- * to identify needs and trends in elementary mathematics education, and to take positions that will positively affect mathematics education in Texas
- * to foster coordination among the various groups interested in and impacted by elementary mathematics education in the state
- * to promote the benefits of the National Council of Teachers of Mathematics, the Texas Council of Teachers of Mathematics, and the Conference for the Advancement of Mathematics Teaching among Texas elementary mathematics teachers

STEAM will publish a newsletter that will contain contributions and a "help wanted" section. Teachers will be able to ask for ideas, helps or suggestions for ways to handle problems that arise in their teaching of mathematics; be they related to methods, materials, manipulatives, etc.

The newsletter will keep elementary teachers informed about what is happening in elementary mathematics across Texas, what is being offered for elementary teachers in local NCTM affiliates and other news of interest.

There will be a kick-off hospitality room on Tuesday, August 4, at the conference for the Advancement of Mathematics Teachers (CAMT) to begin the organization. Look for signs and flyers at the conference for more detailed information.

Ramona Jo DeValcourt
TEA Mathematics Specialist

NOTES

I recently came across a book by Al Parker entitled "How to become a more creative person and teach it to your students or it's rainy day schedule. The roof leaks. I don't have any films. Someone has gotten sick from eating cafeteria food. The snake is loose and I'm beginning to go crazy. A Manual of Survival for the Sensitive." As the title may suggest, it's not one of the more "in-depth" writings on education, but I would like to share part of one section with you. This section is called, "Things they didn't tell you about teaching."

1. That there would be times you would break the 4-minute-mile getting to the restroom during passing periods.
2. That the air conditioner only works in winter and the heater in summer.
3. That the rotten kids are never sick.
4. That the parents who come to open house are not the ones you need to see.
5. That if you give clay to 8th graders, half of them will end up making toilets.
6. That if kids could go anywhere at school, half of them would end up in the restroom.
7. That if you get a run in your stockings, every kid in the class will tell you about it.
8. That some of the cutest kids can have the worst breath.
9. That teachers do not automatically become smarter when they become principals.
10. That substitutes can really write nasty notes.
11. That good, comfortable shoes will mean more than new clothes.
12. That if you come out of a bar, you'll run into one of your students and his parents.

I had two reasons for sharing these 'things' with you. 1. A smile at this time of year will help you make it to the next break. 2. Mary Moler said that I needed to submit something for the newsletter.

President, Wyoming CTM, March, 1987

PLEASE SOLICIT NEW MEMBERSHIPS!

TEXAS COUNCIL OF TEACHERS OF MATHEMATICS PROFESSIONAL MEMBERSHIP FORM

Please print all information. Thank you. Date _____

Name _____ Telephone () _____

Street Address _____

City _____ State _____ Zip _____

	Amount Paid
TEXAS COUNCIL OF TEACHERS OF MATHEMATICS dues: \$5 new? _____ renewal? _____	
NATIONAL COUNCIL OF TEACHERS OF MATHEMATICS dues (one journal): \$35 Arithmetic Teacher _____ Mathematics Teacher _____ OR dues (both journals): \$48	
Student membership dues: \$15 (one journal) Arithmetic Teacher _____ Mathematics Teacher _____ OR dues \$20 (both journals) I certify that I have never taught professionally. _____ student signature	
Journal of Research in Mathematics Education (NCTM members only) \$12	
Make check to TCTM for total amount. Thank you. TOTAL PAID	

Local Council name _____

School name: _____

Position: teacher _____ dept. head _____ supervisor _____

student _____ other (specify) _____

Fill out, and mail to Mrs. Bettye Hall, 3830 Richmond, Houston, Texas 77027

TEXAS MATHEMATICS TEACHER

J. William Brown, Editor
Texas Council of
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DALLAS, TEXAS 75205

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