



Mathachusetts

Massachusetts Mathematics Association
of Teacher Educators

Affiliate of the Association of Mathematics Teacher Educators

Fall 2007

Volume 1, Issue 2

Message from the President: Jenny Tsankova

A New Spring in the Step

Special points of interest:

President's message	1
Board of Directors	2
Dates to Remember	2
Puzzle Corner	4
How to get involved with MassMATE ...	6
MTEL Changes in January 2009	3
Useful Links	1
Recent Helpful Publications	5
Treasurer's Report	3
Application for MassMATE	7
Purposes & Goals	8

Useful Links:

- Association of Mathematics Teacher Educators (AMTE)
www.amte.net
- Association of Teachers of Mathematics of New England (ATMNE)
www.atmne.org
- National Council of Supervisors in Mathematics (NCSM)
www.ncsmonline.org
- National Council of Teachers of Mathematics (NCTM)
www.nctm.org
- Massachusetts Department of Education Professional Development
www.doe.mass.edu/pd

It is only October but the school year is well on its way. If it were not for our energy and renewed enthusiasm, one might think last school year never ended. How can it be that I am looking at a last year's quiz, ready to revise and improve it. I know thousands of math educators are doing something like that right now. We are busy, eager, we love our new students, can't wait to try that "wow" strategy or these "contagious" problems - a new school year has begun! And it feels great; it feels a part of a community of thinkers, of professionals committed to self-improvement and advancement of mathematics education!



Being excited about trying out new methods and improving one's practice is not a function of the number of workshops and courses one has attended. Instead, our enthusiasm is determined by the reflection on our daily work as a result of communicating best practices and research findings. We know that teaching or doing professional development can be a lonely experience. Thus, as professionals, we need a comfortable network where we can upgrade and enrich our toolkit, recharge our batteries, and get invigorated. With that in mind, it was even more exciting to see all of you at our first MassMATE symposium at Roger Williams University in June. The symposium was very well attended. Sixty-five math educators exchanged ideas, discussed common issues, challenges and victories, and simply got connected. Dr. Carol Findell delivered a refreshing and thought-provoking keynote address which wrapped us in a feeling of a day well-spent.

It was gratifying to find out that you would like the symposium to grow into a one-day conference with more speakers and opportunities for networking and professional development. I am especially pleased to inform you that Stonehill College has already offered to host and sponsor our next symposium in June 2008! Hope to see you there!

The beginning of the school year is highly celebrated all over the world. People bow to educators' dedication and belief in the potential of all children.

Happy New School Year to All of Us!

Board of Directors of MASSMATE:

President:

Jenny Tsankova
JTsankova@rwu.edu

President-Elect:

Deborah Upton
DUpton@stonehill.edu

Secretary:

Galina Dobrynina
GDobrynina@wheelock.edu

Treasurer:

Howard Troughton
HDTroughton@yahoo.com

Members-at-Large:

Outreach:

Susan Looney
LooneyConsulting@comcast.net

Membership/Newsletter:

Polina Sabinin
Polina@Sabinin.com

Nomination/Election:

Anne M. Collins
ACollin8@lesley.edu

Dates to Remember:

NCTM Regional Meeting and Exposition

National Council of Teachers of Mathematics
October 11-13, 2007
Richmond, VA
<http://www.nctm.org/meetings>

Speaker Proposal Deadline for ATMIM 2008 Winter Conference

November 2, 2007

ATMNE/ATMIM Conference

Association of Teachers of Mathematics in New England &
Association of Teachers of Mathematics in Massachusetts
Solving Problems: A Multi-Representational Approach
November 8-9, 2007
Springfield, MA
<http://www.atmne07.org>

ATMIM 2008 Winter Conference

Association of Teachers of Mathematics in
Massachusetts
Theme: Making Connections
January 10, 2008
Boston College, Chestnut Hill, MA

AMTE Annual Conference

Association of Mathematics Teacher Educators
January 24-26, 2008
Tulsa, OK



12th Annual Conference of AMTE

Submitted by Deborah Upton, President Elect

What city in Oklahoma has held such titles as "The Oil Capital of the World", "America's Most Beautiful City", "The Birthplace of Route 66" and "Home of the Twelfth Annual Conference of AMTE"? The answer is Tulsa!

The Association of Mathematics Teacher Educators (AMTE) is the national organization that MassMATE is affiliated with and it is holding its annual conference in Tulsa, Oklahoma from January 24 through January 26, 2008. A workshop regarding the incorporation of software into the K-6 setting, working group discussions concerning the mathematical preparation of elementary teachers, a framework for a mathematics methods course, and research in mathematics education, as well as a keynote address about general issues and concerns in mathematics education by Ed Silver from the University of Michigan are just some of the highlights. More information regarding these and the other numerous conference activities can be found at <http://www.amte.net/> under the link "2008 Conference Information". The website also contains information regarding registration and hotel reservations.

Personally, the annual AMTE conferences are a favorite of mine. They always provide wonderful opportunities for me to learn, share, and meet people in the field. I find that they are perfect in size, offerings are ample but not overwhelming, and presenters and participants are friendly and willing to discuss and engage. I always come back to my campus with new ideas and a rededication to my work. So make your plans now to attend and I will see you in Tulsa in January!

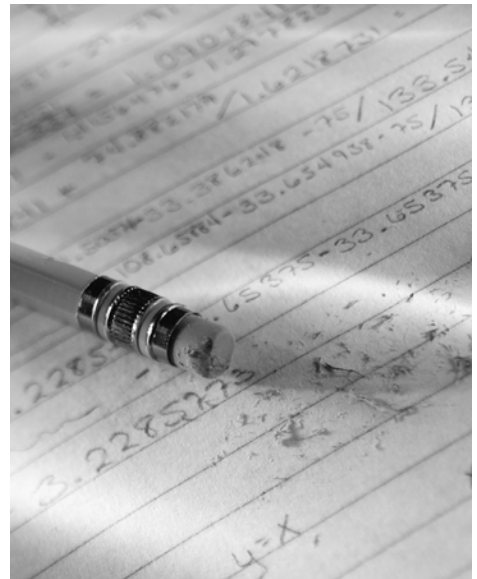
MTEL Changes in January 2009

Submitted by Anne M. Collins, Nomination/Election Chair

MTEL requirements are changing for perspective elementary teachers who intend to take the Massachusetts Tests for Educator Licensure (MTEL). Beginning in January 2009 all perspective elementary teachers must pass an enhanced mathematics section of the MTEL in order to become certified. This new mathematics section will be comprised of 100 questions that range from a comprehensive understanding of the Massachusetts Curriculum Frameworks to fluency in the five strands contained within the K - 8 frameworks. This means that perspective elementary teachers will have a deep understanding of mathematics far beyond the mathematics they teach.

Although this may seem intimidating at a first glance, the changes were enacted to ensure that everyone who teaches mathematics understands not only what is expected of the students at their grade level but can appreciate what mathematics students will need to know and be able to do in subsequent grades. Knowledge and fluency in mathematics above the grade level a teacher teaches should ensure that the foundational mathematical vocabulary is used and developed and the underlying foundational concepts are introduced appropriately so that all students are able to build upon those concepts as they move through the grades and as the mathematics they learn becomes more sophisticated.

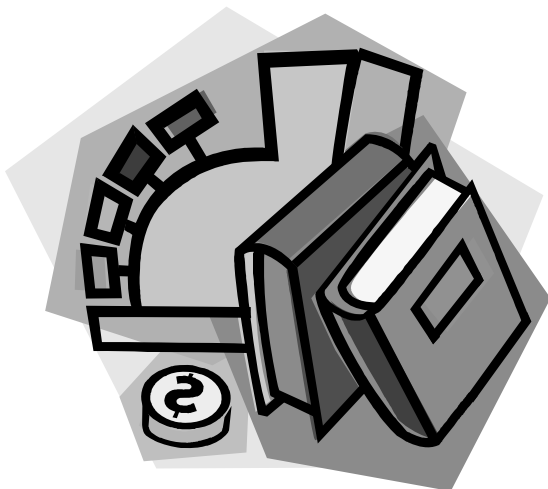
Change is often difficult and the changes to the licensure requirements may also provide challenges in its infancy but since the intent is to improve the teaching and learning for all students it is a necessary change.



Treasurer's Report

Submitted by Howard Troughton, Treasurer

In our first year of operation, my primary goal as treasurer has been to establish MassMATE as a financial entity. This has involved obtaining a business certificate, opening up a bank account, depositing membership dues, and developing a method of keeping track of all financial transactions (the latter task has been surprisingly more difficult than I had expected).



Over the course of the next few months I will be applying to the IRS to obtain official non-profit status for MassMATE. I fully expect this task to present some challenges since the application form itself has 28 pages while the *instructions* for completing the application form has 38 pages!

For our 2006 fiscal year-end (June 30, 2007), we had a total of \$35 in assets and no liabilities. At the time of writing this report, MassMATE has a total of 20 members and our bank account balance stood at \$310. Coincidentally, the filing fee for non-profit status is \$300, which means that I can no longer use the fee as an excuse to procrastinate filing the application.

In the meantime I wish everyone continued success in their personal and professional development as we all strive for better mathematics education in a better world.

Puzzle Corner: Confessions of a Reluctant Sudoku-phile

Submitted by Howard Troughton, Treasurer

I have to confess that when I first heard about the Sudoku craze I was not particularly impressed. I had played tons of number puzzles and logic games when I was younger, and Sudoku just didn't strike me as being especially interesting - it seemed that it would be possible to develop an algorithm that with time and patience could be used to solve virtually any puzzle, however complex. I continued to scorn the Sudoku crowd until my wife discovered two really interesting variations on the Sudoku theme.

They are published daily by Michael Mepham for The Daily Telegraph (London, England) and the Los Angeles Times, and are available on-line at the www.sudoku.org.uk. Each day, three different puzzles are published, ranging in difficulty from gentle to moderate to tough to diabolical. In any given week there are two of each of the first three difficulty levels and one diabolical.

In addition to the traditional format (the "Daily Sudoku"), there are variations called "Jigsaw" and "Killer". Superficially these puzzles are similar to traditional Sudoku in that the digits 1 through 9 must be entered onto a 9 x 9 grid in such a way that there are no repeated digits along any row or column. But it is the differences that caught my attention. The standard puzzle has nine 3 x 3 squares in which no digits can be repeated, whereas in the "Jigsaw" puzzle the shapes are no longer squares but irregular shapes made up of 9 cells. Some of the same strategies can be used to solve the puzzles, but because of the irregularity of the shapes, you need to be much more flexible in your thinking and adjust your strategy to each individual puzzle. They are incredibly addictive, sometimes frustrating, but never boring. The sample on the right is the "Jigsaw" puzzle from September 17, 2007 (gentle level).

To give an idea of some of the "Jigsaw" strategies, consider row "H". Cell H8 must be a 7 (because H2, H4, & H6 cannot be). That leaves a 3, 6, & 9 to be placed in this row. H2 & H4 can't be a 9, so the 9 must be in H6. Another "easy" entry is G7: since columns 8 & 9 have their 1's, G7 must be a 1. Many of the traditional Sudoku strategies work with the "Jigsaw" puzzle, but there are always a few novel strategies that work for one type of puzzle or shape. It will certainly keep you guessing.

The other variation is called "Killer". I suspect that for some people, this puzzle is precisely that: a real killer. However, for someone who devoured number puzzles as a child, "killer" translates to pure fun! The board format is identical to the traditional 9 x 9 grid. However, looking at a fresh puzzle you would first notice that there are very few numbers already entered into the grid. Instead there are blocks of cells enclosed by dashed lines (called "cages" by the puzzle's creator). Each cage has a number associated with it, corresponding to the sum of the cells in the cage. Of course, the rule is that no digit can be repeated in a cage.

As an example of how this works, consider the "Killer" puzzle from September 22, 2007 shown to the right (gentle level). The cells B1 and C1 combine to make a cage with a total of 5. Since there are only 2 cells, they must either be 4 & 1 or 3 & 2. However, there is already a 3 in the first column (cell E1) so the combination must be 4 & 1 but we aren't sure which one goes where. Next look at row B, cells B5 & B6, which sum to 4. The only possibility is 3 & 1 (since 2 & 2 is not allowed). Although we don't know where they go, we do know that cell B1 cannot be a 1 so it must be a 4, and therefore C1 must be a 1.

	1	2	3	4	5	6	7	8	9
A						5			
B	7		6		3		9		1
C		4		9		8		3	
D		9						6	
E			8	1		4	3		
F		5						1	
G		7		4		6		5	
H	2		1		5		4		8
J				7					

	1	2	3	4	5	6	7	8	9
A	15			16			17		4
B	5	17	24		4			11	
C					9		5		9
D	26				34		7		
E	3	5					15		6
F	14	10				23			
G		12		6		15	18		10
H	8		8	11					
J	8			22			8		

Continued on Page 5

Puzzle Corner: Confessions of a Reluctant Sudoku-ophile—Continued

Another useful strategy is the knowledge that the sum of the digits 1 through 9 is 45. This can be used to determine the entry in cell B3. The 3 x 3 block in the top left-hand corner has three cages completely contained inside of it, with totals 15, 5 & 17. These add up to 37, which means that cell B3 must be an 8 (45 - 37). Likewise the cages along the top row (15, 16, 17 & 4) add up to 52. Since these make up the entire row plus cell B7, the digit in that cell must be a 7.

As I hope is clear, the logic involved in these puzzles is of a completely different nature than in traditional Sudoku. The player must perform and process many different sum combinations in order to solve the puzzle - and therefore reinforce computation as well as logic. As a mathematics educator, I appreciate any type of activity that develops mathematical reasoning and skills, and doubly so if these skills can be developed in a friendly and challenging format.

I just love these variations on the Sudoku theme and wanted to share them with a larger community. If you want to simply "get your feet wet", you might try the following gentle "Mini Killer" which uses a 6 x 6 grid, and involves only the digits 1 through 6. Hint: The largest sum with two cells is 11 (6 & 5) and the largest with three cells is 15 (6, 5 & 4). Also the sum of the numbers 1 through 6 is 21.

If you want to learn more about these puzzles and maybe try a few - go the Sudoku Online website at:

www.sudoku.org.uk.

The key links referred to in this article are found in the right-hand column: "Daily Mini Sudoku and Killer", "Daily Sudoku Online", "Daily Jigsaw Sudoku", and "Daily Killer Online". Each of these links includes the current daily puzzle as well as a 30-day archive and solutions to previous puzzles. There is also a wealth of information and links related to the puzzles.

Enjoy!

	1	2	3	4	5	6
A	5		11			11
B	9		4	11		
C	11				12	
D	11		6	5		
E					11	
F		15			4	

Recent Helpful Publications

Submitted by Susan Looney, Outreach Chair

As we begin a new school year, it is a good time to enhance libraries and resources for professional development. Three titles from NCTM are worth consideration. All books can be purchased through the NCTM website: www.nctm.org.

Practice-Based Professional Development for Teachers of Mathematics by Margaret Schwan Smith provides a new perspective on how to design, conduct, and evaluate professional education experiences for teachers. It explores a specific type of professional development opportunity that connects the ongoing professional development of teachers with the actual work of teaching and presents snapshots of practice-based professional development, offers ideas for designing high-quality professional development experiences, and explains how to assess the effectiveness of professional development.

Another suggestion is Designing Professional Development for Teachers of Science and Mathematics by Susan Loucks-Horsley, Peter W. Hewson, Nancy Love, and Katherine E. Stiles. This description and discussion of the practices and issues of professional development for mathematics and science education examines the challenges ahead and the educational systems of the future. It serves as both a primer on the principles of effective professional development and a conversation among professional developers about ways to create the learning programs.

Finally, there is Exploring Classroom Assessment in Mathematics: A Guide for Professional Development by Deborah Bryant and Mark Driscoll. This guidebook is inspired by the potential of classroom assessment to inform teachers and improve mathematics instruction. Its investigations are built on the principles of effective professional development, grounding instructional change in students' understanding, and focusing on capacity building.

Heinemann also has released professional development materials that might be valuable for your professional development plans. The series Young Mathematicians at Work has been developed by Catherine Twomey Fosnot and Maarten Dolk. The resources include a resource book, a professional development package, and / or classroom materials. The professional development package includes a CD-ROM with video clips of classrooms with accompanying activities and reflective questions for teachers. Topics include addition and subtraction for Pre-K through grade 3, multiplication and division for grades 3 through 5, and fractions, decimals and percents for grades 4 through 6. See www.heinemann.com for more information.



MassMATE to lead Regional AMTE Caucus

Come see us in Springfield at the 2007 ATMIM/ATMNE conference. MassMATE will lead the Regional AMTE Caucus.

The caucus will be in the Middlesex room on Friday, November 9th from 1:45 pm to 2:45 pm.

We hope to see you there!

NEW: Opportunities for undergraduate Students at the ATMIM conference

Undergraduate students interested in mathematics education are invited to submit a 50- word proposal for a poster presentation at the ATMIM conference. A Poster Presentation is a visual display depicting a research, software, curricular, or other project of interest to math educators. Posters will be available for viewing throughout the conference, where conference participants will be able to discuss posters with the author(s).

E-mail the title and 50-word description to Jenny Tsankova at JTsankova@rwu.edu by November 15, 2007.

Calling for Proposals for ATMIM 2008 Winter Conference on January 10, 2008



Proposals are now being accepted for the ATMIM Winter Conference to be held on Thursday January 10, 2008 at Boston College.

The theme is "Making Connections." We, as educators, are charged (or challenged?) with guiding students to making connections between the mathematics they are learning and knowing when and how to use that knowledge.

Proposals are sought for one hour sessions addressing Elementary, Middle School, and High School mathematics.

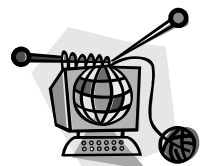
First speakers receive a complimentary registration.

You can find the speaker proposal form at the ATMIM website at www.ATMIM.net or by e-mailing Neelia Jackson, the Winter Conference Chair, at NJackson@boston.k12.ma.us. Remember, the proposal must be in by November 2, 2007.

Getting involved in MassMATE

Help keep us connected on-line

We have a volunteer student who will be creating our web-site for us. We are looking for someone who can help us keep this website current. If you or someone you know can be our webmaster, please contact Jenny Tsankova at JTsankova@rwu.edu.



Contribute to Mathachusetts



We value our member's thoughts and contributions! Please consider writing an article for Mathachusetts.

Also, let us know of any noteworthy events, projects, or programs occurring in your district or school, so that we may consider including it in Mathachusetts!

Please contact Polina Sabinin at Polina@Sabinin.com with your submissions.

Advertising in Mathachusetts

Mathachusetts will be publishing advertisements related to Mathematics Education. For more information, formats, fee schedules, and to obtain an application, please contact Polina Sabinin, the newsletter chairperson at Polina@Sabinin.com.



MASSMATE Membership Application

Massachusetts Mathematics Association of Teacher Educators

MASSMATE was established as a forum for mathematics teacher educators to communicate with each other and collaborate with other groups interested in the teaching of mathematics in the state of Massachusetts.

Name: _____ Date: _____

Home Address: _____

Work Address: _____

Position: _____

E-mail(s): _____

Phone numbers: Work: _____ Home: _____

Cell: _____ Fax: _____

Professional Activities:

Which category or categories best describes your professional activities?

- Faculty at an Institution of Higher Education

Subjects taught: Mathematics Mathematics Education Other

- Public or Private School Teacher

Type of school: Elementary Middle High School Other

- Professional Development Provider

- District Mathematics Specialist

- Teacher Educator

- Education Consultant

- Other (please specify): _____

Are you currently a member of any of the following organizations? (Check all that apply)

- NCSM NCTM ATMIM AMTE ATMNE MAA AMS

- NCSM NCTM Other (please specify): _____

Membership Level (Annual)

- Regular \$20

- Retired or Student \$10

- Non-profit Institution \$50

- For-profit Institution \$100

Please send check payable to MassMATE to:

MassMATE, c/o Polina Sabinin, 374 Great Road, Unit 12, Acton, MA 01720

MASSMATE'S Purposes and Goals

The Massachusetts Mathematics Association of Teacher Educators (MassMATE) is a nonprofit organization whose purpose is to provide a forum for mathematics teacher educators to communicate with each other and collaborate with other groups interested in the teaching of mathematics in the state of Massachusetts. Specifically, the goals of MassMATE are to:

- promote **leadership** among mathematics teacher educators;
- serve as a **forum** for ideas and resources in mathematics teacher education;
- encourage **research** related to mathematics teacher education;
- promote quality **undergraduate** and **graduate** programs in mathematics education;
- encourage and support professional development programs for **in-service** teachers;
- encourage and support professional development programs for postsecondary **faculty** involved in mathematics education;
- facilitate **communication and collaboration** among **professionals** involved in mathematics education and mathematics teacher education at all levels;
- facilitate **communication and collaboration** among members of educational **administrative** units, such as departments of mathematics and departments of education;
- coordinate activities and work collaboratively with **other associations** and organizations concerned with the preparation and professional development of mathematics teachers;
- work cooperatively with the **federal and state** agencies to enhance the mathematical, pedagogical, and clinical **preparation of teachers** of mathematics at all levels with respect to criteria for credentialing and licensing teachers in Massachusetts; and

Share these with a colleague and have them join MassMATE today!



Polina Sabinin
 MassMATE Newsletter Chair
 374 Great Road, Unit 12
 Acton, MA, 01720
 E-mail: Polina@Sabinin.com
 Phone: 978-263-6040

Massachusetts Mathematics Association
 of Teacher Educators