Math Murmurs

VOLUME 31, ISSUE 3
SPRING 2012

The Official Newsletter of the Association of Teachers of Mathematics in Massachusetts
an affiliate of the National Council of Teachers of Mathematics

A Message from the President, Steve Yurek

I don't think that it's an exaggeration to say that the Common Core State Standards occupies a large part of our conversation lately, so I'll provide a bit of a respite here. Vibrant organizations are almost always comprised of a healthy blend of new members, and those whose membership is a bit more "established", and these established members have experienced much change in the emphasis that the state and the nation puts upon mathematics and the teaching of mathematics. For example, the following is a small sample of other Federal or State programs that deal, or have dealt, with education reform:

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Dine and Discuss
Focus on the Common Core
Tracing Fractions and Rational Expressions Throughout the
New Massachusetts Curriculum Framework for Mathematics
A look at Fractions with an eye on Mathematical Practices

You are invited to attend ATMIM's 3rd
Dine and Discuss series of 2011-2012.
This time around, participants will get a chance to trace fractions throughout the K-12 Massachusetts Curriculum Framework for Mathematics based on the Common Core Standards.
Break-out sessions will be by grade span – Elementary, Middle School, and High School
Wednesday, May 16, 2012
Brooks School
1160 Great Pond Road
North Andover, MA 01845

Registration Begins at 3:45
Sessions from 4:15-8:00
Dinner Included

Registration/Dinner is FREE for ATMIM Members
To register for this event visit www.atmim.net.
If you have problems with registration, please email: kaspell@lesley.edu.

Inside this Issue

Dates to Remember:

Wednesday, May 16, 2012
Dine and Discuss
Brooks School, North Andover
More details enclosed and at www.atmim.net

Wednesday, May 23, 2012
MassMATE Symposium
Bridgewater State University

October 24 - 26, 2012
NCTM Regional Conference
Hartford, CT

ATMIM Achievement and Service Awards for High School Seniors

submitted by Ellen Metzger

A $500 U.S. Savings Bond and an engraved plaque were awarded to several Massachusetts high school seniors. The awards are given each year to recognize outstanding achievement or service among high school seniors in the field of mathematics. This year's winners are as follows:

For Mathematics Achievement at a non-vocational/technical high school:

Meghan Corbett from Dedham High School
Yuyang Dong from Canton High School

For the Anne Eliot Smith Award (recognizing an outstanding female nominee in mathematics achievement):

Sara Markiewicz from Stoneham High School

For Mathematics Achievement at a vocational/technical high school:

Keny German from
Blue Hills Regional Technical High School

For Service in Mathematics:

Tyler James Durocher Norton High School

The Board of ATMIM extends congratulations and best wishes to the winners and to all of these very talented and hard-working students.

If you work with high school seniors, please consider nominating a deserving student next year for the 2013 awards. Details will be posted on the ATMIM website in the fall.

Advertising in Math Murmurs

For information about advertising in Math Murmurs please contact
John Bookston, newsletter chairperson: jbookston@arlington.k12.ma.us

Price per issue:
Half-page: $400
Quarter-page: $200
Eighth-page: $100

Annual Price:
Companies can purchase advertisement space on an annual basis (3 issues) at a reduced price. In order to maintain the dynamic feel of Math Murmurs, we strongly encourage the company to update their advertisements frequently.
Half-page: $1,000
Quarter-page: $500
Eighth-page: $250

Please note that by publishing an advertisement, ATMIM does not imply endorsement of the advertised product or the company.

Tinkerplots Software for Probability and Statistics

submitted by Susan Weiss

I am always on the lookout for programs that are open-ended and help students get excited about what they are learning. The newest program that I have been using with my students is Tinkerplots 2 (www.keycurriculum.com). The program is designed for students in grades 4-9 to learn from data.

I am impressed by the ease of showing items such as averages and deviations, box plots with percentiles or special line plots. With introduction of Tinkerplots 2, there is a sampler engine to set up experiments for students to master probability and statistics concepts listed in the Common Core State Standards.

One can import Excel files or reverse and export to Excel. Data can be entered either as a table or as a set of cards. Each graph has the option of comparing up to three different attributes. My fourth and fifth grade students like the option of being able to change between so many different types of graphs. We will be using the sampler to set up an experiment randomly selecting from a collection of coins using varying sample sizes.

Other great features are the sample lessons and videos demonstrating each component of the program. I highly recommend purchasing this software as a tool in understanding the ins and out of probability and statistics.

Results of the 2011 National Financial Capability Challenge

submitted by Sharyn Sweeney, DESE

Thank you teachers for increasing Massachusetts' participation in the National Financial Capability Challenge. This year Massachusetts holds sixth (6th) place for participation based on the number of grade nine to twelve students participating. The good news keeps on coming. Out of our 4000 students, 27 had perfect scores (up from 19 last year), and 849 students performed in the top 20%. The number of teachers participating this year is 91, (about 20 more teachers than last year).

The Massachusetts State Treasurer's Office, the Federal Reserve Bank of Boston, and the Massachusetts Department of Elementary and Secondary Education will honor the students with perfect scores as well as the students who scored in the top 20% and their teachers at a celebration on June 8, 2012 at the Federal Reserve Bank of Boston.

What is ARML?

submitted by Marty Badoian

ARML (American Regional Math League) was conceived as an interstate competition covering the eastern seaboard, and was formed by the joint action of leagues from New York, New England, New Jersey, Pennsylvania, Maryland, and Virginia. Since its inception in 1976, ARML has snowballed, burgeoned, and mushroomed into a national program, involving almost 2000 students and teachers from almost every state.

ARML is like no other mathematics contest. After months of planning and preparations, tryouts and practice sessions, busloads of students stream onto four college campuses nationwide resembling beehives of excitement and anticipation. New friendships are made and old ones are renewed. Students are drawn together by their love of mathematics, eager to measure their abilities against other talented students on a collection of truly challenging, non-routine problems covering a variety of problem solving situations.

[ATMIM thanks Marty for his longtime leadership of the Eastern MA ARML and GBML. His teams have one of the greatest records of any in nationwide competitions. We will ask him for names and schools of his team this year at ARML.]

Membership Report

submitted by Joan Martin

The two Dine and Discuss evenings that ATMIM has conducted have attracted many new members. We currently have 338 active members and 197 members currently with renewals overdue. Previously, many members renewed at the Spring Conference. With Dine and Discuss substituting for the Spring Conference this year, members have been notified of expiring membership electronically through our new WildApricot System.

If you are experiencing any difficulty renewing or accessing your information on the ATMIM website please contact Joan Martin, membership chair, joan_martin@newton.k12,ma.usAffiliate of the Association of Teachers of Mathematics in New England and the National Council of Teachers of Mathematics

Central Massachusetts Teams Compete in Prestigious Meets

submitted by Beth Blumberg, coach

In the summer of 2011, 29 students representing 12 high schools in Central MA participated in the Regional competition at Penn State. Our "A Team" placed 29th out of 64 teams in Division A. Our top scorer, 10th grader, Dhroova Aiylam, earned 8 points (out of a possible 10) to qualify for the tie breaker round. In addition to other honorable "A Team" scores, several students on our B team scored 4 and 5 (very promising for future meets). During the school year, the team meets once a month to learn and engage in practice meets comprised of relays, individual rounds, power rounds and team rounds. One team scored 7th in the nation this fall in the Power Round competition.

Saturday, November 12, 2011, two teams of six mathletes each competed in HMNT at MIT against a field of 80 teams. Dhroova Aiylam came in 7th in the individual round, and 3rd in the general round (winning an abacus, and a Klein bottle). Our second team had an impressive score of 87 in the that round. In the In the team round, our teams came in 2nd with 31 points and 9th with 20 points taking home two plaques and a beautiful trophy.

Students on the HMNT teams:

Dhroova Aiylam, Shrewsbury (Mass Academy);
Rachel Kotisky, Shrewsbury;
Eric Nie, Westborough;
Joshua Hyde, Westborough;
John Tsai, Northborough (Algonquin) and
Ben MacDonald, Jefferson (Wachusett).

Anish Athalye, Shrewsbury (Mass Academy);
Priyansh Bhatnager, Shrewsbury;
Mike Curran, Shrewsbury
Vivian He of Shrewsbury;
Ningrui Li, Westborough and
Lambert Wang, Grafton.

And competing individually were:
Curran Kalia, Shrewsbury (St. John's);
Camilla Menard, Holden
Madeline Martin, Holden.

ATMIM sends its congratulations to all involved and wishes them continued success June 2 in this year's ARML.

Problems to Ponder Answers:			
1.	D	5.	D
2.	D	6.	B
3.	E	7.	D
4.	E	8.	D
		9.	A

Problems to Ponder

submitted by Polina Sabinin

Questions are from 2012 Math Kangaroo International Competition in Mathematics (www.mathkangaroo.org)

MathKangaroo 2013 will be held on March 21, 2013

Elementary School

1. A grasshopper wants to climb a staircase with many steps. She makes only two kinds of jumps: 3 steps up or 4 steps down. Beginning at the ground level at least how many jumps will she have to make in order to take a rest on the 22nd step?
A. 7 jumps B. 9 jumps C. 10 jumps
D. 12 jumps E. 15 jumps

2. Lucy makes two numbers with the digits 1, 2, 3, 4, 5, and 6. Both numbers have 3 digits and each digit is used only once. She adds these two numbers. What is the greatest sum Lucy can get?
A. 975 B. 999 C. 1083 D. 1173 E. 1221

3. A rectangular sheet of paper measures 192 mm x 84 mm. You can cut the sheet along just one straight line to get two parts, one of which is a square. Then you do the same with the non-square part of the sheet, and so on. What is the side of the smallest square you can get with this procedure?
A. 1 mm. B. 4 mm C. 6 mm D. 10 mm
E. 12 mm

Middle School

4. Rick has 5 cubes. When he arranges them from smallest to largest, the difference between the heights of any two neighboring cubes is 2 cm. The largest cube is as high as a tower built from the two smallest cubes. How high is the tower built from all 5 cubes?
A. 6 cm B. 14 cm C. 22 cm D. 44 cm
E. 50 cm

5. David wants to arrange the twelve numbers from 1 to 12 in a circle so that any two neighboring numbers differ by either 2 or 3. Which of the following pairs of numbers have to be neighbors?
A. 5 and 8 B. 3 and 5 C. 7 and 9
D. 6 and 8 E. 4 and 6

6. An equilateral triangle starts in a given position and is rotated into new positions in a sequence of steps. At each step it is rotated about its center, first by 3 , then by a further 9 , then by 27 , and so on (at the n-th step it is rotated by a further (3n)). How many different positions, including the initial position, will the triangle occupy? (Two positions are considered equal if the triangle covers the same part of the plane.)
A. 3 B. 4 C. 5 D. 6 E. 360

High School

7. What is the smallest possible size of an angle in an isosceles triangle ABC that has a median that divides the triangle into two isosceles triangles?
A. 15º B. 22.5º C. 30º D. 36º E. 45º

8. Consider two operations which can be performed on a fraction: 1) increase the numerator by 8; 2) increase the denominator by 7. When we start with fraction 7/8 and perform a total of n such operations in some order, we obtain 7/8 again. What is the smallest possible value of n?
A. 56. B. 81. C. 109.D. 113 E. This is impossible.

9. Three vertices of a cube (not all in the same face) are P(3,4,1), Q(5,2,9) and R(1,6,5). Which point is the center of the cube?
A. (4,3,5) B. (2,5,3) C. (3,4,7) D. (3,4,5)
E. (2,3,5)

Just Back from NCTM in Philadelphia

submitted by Steve Yurek

The NCTM Annual Conference was held in Philadelphia last week, from April 25 through the 28th. The keynote address was delivered on Wednesday evening by Diane Ravitch, Historian of Education at New York University, who presented "Will Current School Reforms Improve Education?" The Closing session was given by Edward Burger, whose topic was "How to Teach Creativity Discretely: From Doodling to Discovering". There were almost 1,000 sessions that spanned all grade levels and all interest levels. The Philadelphia Convention Center was a huge forum that accommodated almost 10,000 attendees and hundreds of exhibitors. If your palate was primed for Mathematics and Mathematics Education, then Philly was the place to be.

Mark your calendars for next April 17 to 20 as the NCTM 2013 Annual Conference will take place in Denver, Co. and the NCTM Northeast Regional Fall Conference will be in Hartford, CT from October 25 to 27, 2012.

Board of Directors Directory

(President's Message continued from Page 1)

- A Nation at Risk: The Imperative For Educational Reform (1983)
- Massachusetts Education Reform Act (1993)
- No Child Left Behind (2001)
- Race to the Top (2008)

And this doesn't include the (high stakes) testing that is used to measure the outcomes of programs such as the ones listed above. Examples include: MEAP, MCAS, NAEP, TIMMS, NECAP, and such.

Each generation of Americans struggle with what they consider to be the best, most effective way to educate their children – and our generation is no different. The names of the initiatives may change – the emphasis on pedagogical techniques and strategy may shift, but there is one constant that has remained, and must remain --- that we mathematics teachers have a knowledge, and a deep understanding, of the mathematical content well beyond the level that we expect our students to master. That's not to say that implementation of sound pedagogical methods, effective classroom management, clear communication skills, common sense, etc., are not important. On the contrary, they are absolutely necessary, and we should always be open to improving those skills, but we also have a primary duty to improve our mathematical knowledge, and it's never too late to become resolved to do so. During the course of any school year (and throughout the summer as well), many organizations throughout New England offer afternoon/evening, single day, multi-day conferences (including webinars and e-workshops) with the intention of keeping its mathematics teachers "content sharp". Our organization, ATMIM, serves Massachusetts, and is an affiliate of both ATMNE (our New England Association) and NCTM (our National Council). There are other organizations within Massachusetts that also serve Massachusetts Mathematics teachers, with MassMATE and MathWest coming to mind. Our own DESE offers summer content conferences/courses in many areas. If you live or teach in a town that borders another state, look into their programs too. Even if it's not possible to attend a conference, visit the mathematics section of your local book store. There are many titles that will catch your eye and will be a great way to allow you to continue to stretch yourself. Google a topic, talk to your colleagues, strengthen yourself in the dozens of ways that I haven't even mentioned. Being a math teacher is challenging work--- but if it were easy, anybody could do it.

ATMIM Board of Director Elections

Voting for Board of Director positions will be conducted online later this month. Keep an eye on your inbox for your ballot. Here are the bios of the candidates.

Nominees for Director

Mark Healy

My name is Mark Healy and I am the Pre-K through 12th grade District Mathematics Coordinator for Cambridge Public Schools where I support teachers and administrators in Cambridge in developing a rich and rigorous mathematics program that meets the needs of all of our students.

Educated in Canada, I taught Grades 8–12 mathematics, including International Baccalaureate and Special Education classes, in Calgary, Edmonton, and Vancouver. I received the Outstanding New Teacher of the Year award from the British Columbia Association of Math Teachers and later served on their Executive Board. I then moved to New York to work as the Associate Director of Mathematics Curriculum for Kaplan K12 Learning Services, where I offered in-person training and developed teacher and student resources for school districts across the US.

I have also worked as Adjunct Faculty at the University of British Columbia and at Lesley University teaching graduate mathematics education courses. I am also an author of the MathWorks textbooks currently being used in high school classrooms across Western Canada, which teach important math concepts and skills necessary for skilled trades occupations. I have also supported ATMIM and ATMNE through co-chairing the Coaching strand of the 2011 ATMNE Annual Conference, and have co-facilitated "Dine and Discuss" professional development workshops for teachers, focused on understanding and implementing the new 2011 Massachusetts Mathematics Framework.

As a member of the ATMIM Board of Directors, I hope to support the organization's efforts in bringing quality professional development through in-person workshops, as well as through online supports, such podcasts and online community sharing.

Nancy Johnson

Nancy Johnson has been involved in mathematics education for 28 years. She is a graduate of Skidmore College with a BA in mathematics and received a Masters in Mathematics from WPI. Nancy has been teaching mathematics at Hopedale Junior – Senior High School for the past 18 years and has been the department head of the mathematics department for the past eight years. During this time, she has worked with students of all abilities. Nancy is a strong advocate of the use of technology in the mathematics classroom, and most recently is excited by the potential of the TI-NSpire CAS handhelds and software. Nancy has also introduced the concept of a Professional Learning Community joining the mathematics department and the special education department in order to strengthen mathematics education for all. She has been a national presenter of Lesson Study at the national conference of NCTM in Atlanta, Georgia in 2009. Nancy also received the Blackstone Valley Educator's Most Promising Practice Award and was a state finalist for the PAEMST Award in 2009. Nancy served as a member of the grade 10 MCAS Assessment Development Committee for several years and is a member of NCTM, ATMNE, NCSM, and several math directors groups.

Christine Joyce

Christine's love of math began as a member of the state champion Canton High School Math team under the guidance of long-time educator, Marty Badoian. After earning a degree in engineering and serving a brief stint as an IT consultant, a volunteer trip to Namibia introduced Christine to her real passion: teaching. Christine is now in her 8th year as an educator and has taught math in grades 4 through 12 in schools in San Diego, Canton, Italy, and Cambridge. Christine is also an educational consultant, publishing books on SAT II math and various state assessments and, most recently, creating math assessments for The Achievement Network. In her current role as the Math Curriculum Specialist in Sudbury, Christine is working to align curriculum to the Common Core, support teachers in improving their instruction, and use data to inform district decisions regarding math achievement. Christine has a Bachelor's degree in industrial engineering from Georgia Institute of Technology and a Master's degree in School Leadership from Harvard Graduate School of Education.

Candidate for Treasurer

Katherine Richard

Bio to be included with ballot,soon to follow.