Math Murmurs

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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

Just this year alone, you have had the opportunity to join your colleagues in at least six enlightening Professional Development Experiences, four of which were sponsored by ATMIM. In October the NCTM Regional Conference was held in Hartford, CT. In October (Hopedale) and November (Cambridge), ATMIM hosted Dine and Discuss Workshops. Our Winter Conference was held at Boston College in January, and just a few weeks ago, we held our Spring Conference at Assabet Valley Reg Tech HS in Marlborough. By the time this newsletter reaches you, the NCTM National Conference will have been held in Denver. But there's even more on the horizon: the MassMATE conference at Bridgewater State University is in May and Lesley University and ATMNE will co-sponsor a Common Core Math Institute in Cambridge during July. Next school year plan to attend ATMNE's two-day Fall Conference in Killington, VT on October 24 and 25. We owe it to our students and to ourselves to remain current in content and in pedagogy. So whether you attend an ATMIM, ATMNE, NCTM sponsored event or an event sponsored by any of the other fine professional organizations, make a resolution to make it happen. We all know that life moves pretty quickly, so try not to postpone your decision and earn some PD.

In closing, I'd like to say that it has been two years since I assumed ATMIM's presidency (talk about life moving quickly) and next year that responsibility belongs to Steven Rattendi, from Newton South HS. Steven is bright, young, energetic, enthusiastic, and has a positive vision for ATMIM and its membership. He has been a major part of any forward thinking that has taken place recently, and we know that he will represent us all in the most gracious and able manner. Best wishes for Steven!

And the winners are ...

submitted by Neelia Jackson

Our slate of nominees was uncontested, but the level of interest was not. Each of the nominees brings a passion and desire to work for math education in the Commonwealth. With this newly elected slate of directors, we have expanded from Foxborough to Framingham peaking at North Andover.

Don Cameron is ATMIM's President-Elect. Don teaches at Brooks Academy in North Andover. His passions outside of the classroom and off the track include chocolate, so we know Don will be awesome! Congratulations, Don, for accepting the challenge to grow ATMIM.

Sheri Flecca and Alison Mello were elected to the Board of Directors. Sheri currently teaches in Framingham; she believes in a blend of innovation and persistence – qualities strengthened while working in a middle school. Alison Mello has the desire to work with professional development opportunities allowing educators to engage in conversations about education. Both Sheri and Alison are interested in building relationships with teachers and students across the Commonwealth.

Congratulations to Don, Sheri and Alison!! We look forward to working with you all.

Inside this Issue

Dates to Remember:

May 23, 2013
MassMATE Symposium
Bridgewater State University
www.MassMATE.net

July 29 - 31, 2013
Monday - Wednesday
Mathematics Institute
Lesley University
http://www.lesley.edu/PageTemplate.aspx?id=2712

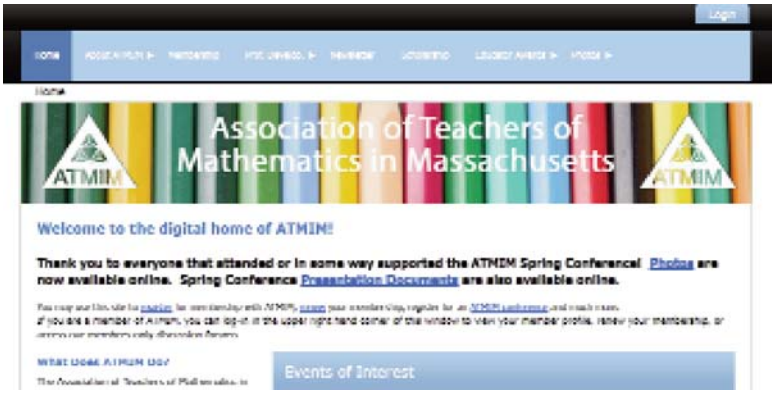
October 24 - 25, 2013
Thursday and Friday
ATMNE Fall Conference
Killington, VT
www.atmne.net

"Like us on Facebook to stay updated on upcoming ATMIM events!"

ATMIM Website gets a Facelift!

submitted by Steven Rattendi

If you have not visited www.atmim.net in a few months, you should do so now. The site has an updated and more modern look to it. We hope you find it easier to navigate the site and get the information you need.



In our quest to provide you with relevant and up-to-date information, we will list professional development opportunities in mathematics that go beyond those offered by ATMIM and ATMNE. If you know of a specific event that would be of interest to our membership, please pass it on to me or any Board member for posting.

Finally, please take this opportunity to login to your account on our website. Update your information including your email address, mailing address, school/organization information, and other profile data. Your username is the email where you have been receiving ATMIM correspondence. If you have forgotten your password, then there is a password-reset option within the login screen. You are strongly urged to use a reliable email address where you have control of your "spam" filters, so that you do not miss out on important information from ATMIM. Hope you enjoy the new site!

Latest Developments on the PARCC Assessment

submitted by Mark Healy

The Partnership for Assessment of Readiness for College and Careers (PARCC) is a group of 22 states voluntarily working together to develop a common set of K-12 assessments in English language arts/literacy and mathematics anchored in what it takes to be ready for college and careers. PARCC is one of two state consortia developing assessments aligned to the Common Core State Standards (CCSS) through the federal Race to the Top Assessment grant. The PARCC performance-based and end-of-year assessments for grades 3 through 11 will be ready for full implementation in the 2014-15 school year.

Design of the Assessments

K-2 Formative Assessments

The Partnership will develop an array of assessment resources for teachers of grades K–2 that are aligned to the Common Core State Standards, and vertically aligned to the PARCC assessment system. The tasks will consist of developmentally-appropriate assessment types, such as observations, checklists, classroom activities, and protocols, which reflect foundational aspects of the Common Core State Standards. The K-2 formative assessment tools aim to help create a foundation for students and put them on the track to college and career readiness in the early years.

Grades 3-11 Assessment Components

The PARCC design in Grades 3-11 includes four components - two required summative and two optional non-summative – to provide educators with timely feedback to inform instruction and provide multiple measures of student achievement across the school year. In high school, there will be course assessments in Algebra I, Geometry, and Algebra II, as well as Mathematics I, Mathematics II, and Mathematics III.

Required Summative Assessment Components:

• Performance-Based Assessment (PBA) administered after approximately 75% of the school year. The mathematics PBA will focus on applying skills, concepts, and understandings to solve multi-step problems requiring abstract reasoning, precision, perseverance, and strategic use of tools.

• End-of-Year Assessment (EOY) administered after approximately 90% of the school year. The mathematics EOY will call on students to demonstrate further conceptual understanding of the Major Content and Additional and Supporting Content of the grade/course (as outlined in the PARCC Model Content Frameworks), and demonstrate mathematical fluency, when applicable to the grade or course.

Optional Non-Summative Assessment Components:

• Diagnostic Assessment designed to be an indicator of student knowledge and skills so that instruction, supports, and professional development can be tailored to meet student needs.

• Mid-Year Assessment (MYA) comprised of performance-based items and tasks, with an emphasis on hard-to-measure standards. After study, individual states may consider including the MYA as a summative component.

The 3-8 assessments will include a range of item types, including innovative constructed response, extended performance tasks, and selected response (all of which will be computer based). For high school, there will be college-ready cut scores on high school tests, which will signify whether students are ready for entry-level, credit-bearing college coursework. Earlier tests will be aligned vertically to ensure students are on - and stay on - the track to graduating ready for college and careers.

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NCTM Update

Submitted by Anne Collins, NCTM Director

A wintery mix of snow, cold, and wind greeted the 7,000 attendees at the NCTM Annual Meeting in Denver earlier this month. The opening ceremony featured Mayim Bialik, a real-life neuroscientist and Big Bang Theory co-star Amy Farrah-Fowler. They generously remained after the opening session to meet and greet attendees at a reception sponsored by Texas Instruments.

As usual the NCTM Board of Directors met prior to the research precession and conference. The Board approved additional task forces to provide an alignment of all archived mathematics problems to specific CCSSM standards. This work will occur during the summer of 2013 and hopefully be available to members by late Fall 2013. A second group will be developing a formative assessment resource designed to align problems to CCSSM together with classroom strategies for incorporating formative assessment into classroom instructional practices. Suggestions will include grade level strategies for assessing content standards for prior student knowledge and understanding; strategies for how to intervene with a short instructional activity should students not have the foundational knowledge for completing the planned lesson; sample exit cards/tickets-to-leave in order for teachers to evaluate what understandings which with students leave class. Included also will be suggestions for how to provide immediate and effective feedback to students in real time.

The Board appointed Cathy Carroll from California to Chair the Boston 2015 Annual conference. Yours truly was appointed the Host Arrangements Chair. (It is never too early to put your name on my volunteer list.)

The Caucuses for affiliates were organized differently this year with all affiliates meeting together in a general information session prior to breaking out by region. This new format ensured that all affiliate representatives were privy to the same information shared by NCTM and the Affiliate Services Committee (ASC). Members of the Nominations and Elections committee spoke at this caucus in order to remind members that their voice is necessary to the ensure the Council continues to best represent teachers of mathematics. Please nominate yourself or a colleague to serve as a member of the Board of Directors. The nomination form may be obtained online by going to the NCTM website.

NCTM continues to support teachers as they implement the CCSS and invites teachers to visit the website for a variety of resources designed to facilitate their classroom implementation.

NCTM looks forward to seeing you all at the summer institutes in New Orleans and the Fall regional conferences in Las Vegas, Louisville, or Baltimore. More information is available on the NCTM website at www.nctm.org.

PARCC from page 2

Assessment Administration and Guidance

PARCC has released two items to help schools and districts prepare for the new assessments in 2014-15:

i.) The Assessment Administration Capacity Planning Tool, a spreadsheet-based tool that will support school budgeting and planning decisions

ii.) A related guidance memo to help schools and districts plan for the new tests

PARCC estimates that students will spend the approximate times below to complete all the sessions, or timed components, of the PARCC performance-based and end-of-year assessments in both ELA/literacy and math:

8 hours annually in 3rd grade
Just over 9 hours in grades 4–5
A little less than 9 ½ hours in middle school
A little more than 9 ½ hours in high school

Schools and districts will have a maximum of one four-week window to complete the administration of the performance-based and another maximum four-week window to complete the end-of-year tests. States, districts or schools can choose to administer the tests in a shorter time span if they have sufficient capacity to do that, and many are expected to do so. PARCC is issuing some rule-of-thumb advice for schools to consider so they can ensure they can get the testing done within those windows.

Schools with up to three tested grades, (up to 5th, 6-8 or 9-11) should have at least one hardware testing device for every two students in the largest tested grade.

A school that has six tested grades, such as a K–8 school, should have one device per student in the largest tested grade.

These student-to-device ratios will enable schools to administer the PARCC tests within the testing windows. More devices will allow them to administer the assessments more quickly.

Next Updates

This month PARCC will release three more guidance documents:

i.) Draft Grade- and Subject-Specific Performance Level Descriptors (PLDs)

ii.) Draft PARCC Accommodations Manual for students with disabilities and English learners

iii.) PARCC Assessment Blueprints

By the end of June, PARCC will release a further set of guidance documents:

Guidance on Participation in Field Test and Practice Tests
Design of Diagnostic and K-1 Tools
Final Subject- and Grade-Level Performance Level Descriptors
Final Accommodations Manual for Students with Disabilities
Final Accommodations Policies and Participation Guidelines for ELL

To access all guidance documents, or any other supporting information, visit www.parcconline.org.

ATMIM Spring Conference Report

submitted by Steve Yurek

On Saturday, March 23 over 100 persons interested in mathematics education met at Assabet Valley Reg Tech HS in Marlborough for ATMIM's Spring Conference -- celebrating our 110th year of service to Massachusetts Math Teachers. Dr. Steve Miller, Professor of Mathematics at Williams College in Williamstown, MA delivered our Keynote Address, with the message that very often, powerful mathematical thought can be generated by the simplest of questions. He was joined by 30 other presenters who offered their expertise on a range of topics from The Mathematics of Map Making to Using Literature to Model Mathematics to various aspects of the Common Core and much more.

This was our first attempt at a Saturday conference, hoping to free our teachers from the task of preparing for a sub and then facing the task of reviewing all the work that was done in their absence. By all indications, this idea was well-received by our Massachusetts teachers, as well as many who live in each of the five states that border Massachusetts. Efforts will be made to continue this practice in the future.

Thanks to Assabet Valley for their hospitality and thanks to their technical and support staff for their help. The breakfast and luncheon meals were prepared by the school's Culinary Arts students, and the quality and quantity of their offerings caused many attendees to signal a big Thumb's Up!

Ballots were cast for the positions of Directors and for President-elect. (See the article: And the Winners Are)

The day's activities ended with 4 terrific door prizes: A 1 year ATMIM membership – A 1 year NCTM membership – A Texas Instrument hand-held device of the winner's choosing – and A Kindle Fire.

Providing a quality conference is not a small task, and would not have been possible without the cheerful assistance of the members of the ATMIM Board of Directors. The attendees enjoyed the day and were able to bring good mathematics back to the classroom.

We hope to see even more of you at the next ATMIM event.

ATMIM Scholarships Awarded

Submitted by Nancy Johnson

The Association of Teachers of Mathematics in Massachusetts has awarded the following scholarships, each in the amount of $250, to deserving 2013 graduates:

Matt Waldman, of Canton High School,
recommended by Martin Badoian, is the winner of the Achievement Award.

Sam Solomon, of Canton High School,
recommended by Martin Badoian, is the winner of a Service Award.

Ariya Shaji, of Weston High School,
recommended by Jim McLaughlin, is the winner of a Service Award.

Aaron Nesselle, of Blue Hills Regional Technical High School,
recommended by Albert Dellorco, is the winner of the Vocational Award.

All of these outstanding seniors will receive an engraved plaque in addition to the monetary award for their achievements. Congratulations. We are so proud of your hard work.

Problems to Ponder

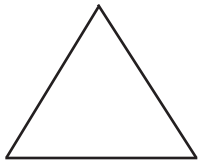
submitted by Polina Sabinin

Questions are from 2013 Math Kangaroo International Competition in Mathematics (www.mathkangaroo.org)

Elementary School

1. Baby Roo wrote down several numbers using only the digits 0 and 1. The sum of these numbers is 2013. It turned out that Roo wrote the fewest numbers possible to get this sum. How many numbers did Baby Roo write?
A. 2 B. 3 C. 4 D. 5 E. 204

2. Joining the midpoints of the sides of the triangle in the drawing we get a smaller triangle. We repeat this one more time with the smaller center triangle. How many triangles of the size of the smallest triangle will fit in the original triangle?



A. 5 B. 8 C. 10 D. 16 E. 32

3. Cristi has to sell 10 glass bells which vary in price: 1 dollar, 2 dollars, 3 dollars, 4 dollars, 5 dollars, 6 dollars, 7 dollars, 8 dollars, 9 dollars, and 10 dollars. In how many ways can Cristi divide all the glass bells into three packages so that each of the packages has the same price?
A. 1 B. 2 C. 3 D. 4
E. Such a division is not possible.

Middle School

4. A 2 x 2 x 2 cube is to be constructed using 4 white and 4 black unit cubes. How many different cubes can be constructed in this way? (Two cubes are not different if one can be obtained by rotating the other.)
A. 16 B. 9 C. 8 D. 7 E. 6

5. The perimeter of a trapezoid is 5 and the lengths of its sides are integers. What are the measures of the two smallest angles of the trapezoid?
A. 30° and 30° B. 60° and 60° C. 45° and 45°
D. 30° and 60° E. 45° and 90°

6. Let S be the number of squares among the integers from 1 to 2013^6. Let Q be the number of cubes among the same integers. Then:
A. S = Q B. 2s = 3Q C. 3S = 2Q
D. S = 2013Q E. $S^3 = Q^2$

High School

7. How many positive integers are multiples of 2013 and have exactly 2013 factors (including 1 and the number itself)?
A. 0 B. 1 C. 3 D. 6
E. None of these answers

8. Julian has written an algorithm in order to create a sequence of numbers $a_1 = 1$, $a_{m+n}=a_m+a_n+mn$, where m and n are natural numbers. Find the value of $a100$.
A. 100 B. 1000 C. 2012 D. 4950 E. 5050

9. Baby Roo wants to find a six-digit number, the sum of whose digits is even, and the product of whose digits is odd. Which of the following statements about such a number is correct?
A. Either two or four of the digits are even.
B. Such a number cannot exist.
C. There is an odd number of odd digits.
D. All six digits can be different.
E. None of these

All grades bonus:

A gardener wants to plant 100 trees (oaks and birches) along an avenue in the park. The number of trees between any two oaks must not be equal to five. Of these 100 trees, what is the greatest number of oaks that the gardener can plant?

Send your class solutions to polina.sabinin@bridgew.edu.

The most interesting solutions will be posted on the ATMIM website and the class will get a certificate.

Answers will be available later on the ATMIM website – www.atmim.net

Fr. Bezuszka Mathematics Award Nominations Equals the Empty Set

submitted by Steven Rattendi

This year, the ATMIM Board received zero nominations for its Fr. Bezuszka Mathematics Award. The award honors excellence in the teaching of Mathematics both in the classroom and with the ATMIM community of members.

Past recipients of this award are Dr. Margaret Kenney of Boston College, Filberto Santiago-Lizardi of the Boston Public Schools, and Rhonda Girouard of Assabet Valley Regional Technical High School. Please keep this award in mind next year as you are thinking about the excellent colleagues you work with and have learned from over the years.

We hope to have an abundance of nominees next year.

Technology for the IPAD

submitted by Susan Weiss

As schools are trying to decide how to improve their math programs, technology is the tool set that many schools are evaluating. There are many apps in math which are great for reviewing facts or practicing skills. I was looking for apps which are more open ended to allow for exploration. I found a series that I have been using for years but apps are now available for the ipad. The series is called "Hands-On Math" designed by Fred Ventura (Ventura Educational Systems) http://www.venturaes.com . The series comes with a User Guide with a complete overview of how the program works and how it uses the different math manipulatives and ideas for using them. Some of the titles are Hundreds Chart, Color Tiles, Base Ten Blocks, Bean Sticks, Number Balance, and Attribute Blocks. I have used the Base Ten Blocks which sets up addition and subtraction problems. The program allows for regrouping in each position which is very important as children are learning regrouping. I also tested Bean Sticks which allows for creative ways of building the number system using powerful number theory. These are not free apps but I think well worth the cost of $1.99 each. If you are ordering for a group of ipads, you should ask about educational prices. For a fun quick game, look at Sushi Monster; for chip trading base 10, there is a free program - Place Value Chart - that automatically regroups from 100 to tens to ones. It does have its limitation of size of number and demonstrating subtraction or addition. As with all apps, a teacher needs to supervise the usage and monitor as students work on each app. Enjoy!

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