

Math Murmurs

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



VOLUME 36, ISSUE 3

Spring 2016



Nancy Johnson,
ATMIM President

PRESIDENT'S MESSAGE

As we are beginning to see signs of spring, it is time to reflect on what we have learned throughout this year and what impact each of us can have on mathematics education in our schools and

in our state. It is the time to reflect on the journey that we have taken with our students, think about professional development plans in our future, and plan for and dream about summer vacation.

These are exciting times – this fall the Board of Education voted to adopt a path to a next-generation MCAS, referred to as MCAS 2.0. This new exam will be used by all students in grades 3 – 8 in the spring of 2017. In the future, the test will be given on the computer and will incorporate both MCAS and PARCC assessments as well as questions unique to the new test. The Department of Elementary and Secondary Education has asked for volunteers to serve on a variety of committees to prepare for the new MCAS 2.0 test. In addition, DESE has solicited opinions from ELA educators and mathematics educators in the form of an online survey to receive input on the current ELA and mathematics frameworks. All of you should have received a link to participate through an email from ATMIM.

DATES TO REMEMBER

JUNE 27-29, 2016:

New³ 2016 Summer Math Conference
Organized by AMTNYS, AMTNJ, and ATMNE
Iona College, New Rochelle, NY

OCTOBER 20-21, 2016:

ATMNE 2016 Fall Conference
*Vote with Math! Developing Informed Citizens
Through Mathematics*
Manchester, NH

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PRESIDENT'S MESSAGE (continued from page 1)

In order to help mathematics educators improve instruction, curriculum, and assessment ATMIM has taken an active role by providing both a winter and spring conference, conducting an online book study on Jo Boaler's book, *What's Math Got to Do with It?*, maintaining a blog on mathematics instruction, providing resources for parents, and releasing information on interesting mathematics issues through both Twitter and Facebook. Now is the time to consider how ATMIM can further support you in your mathematical journey. In the beginning of this school year, ATMIM surveyed to its members concerning how this organization can better support you. Soon, we will send out an end-of-the-year survey in preparation to serve you for the upcoming school year.

"It was the best of times, it was the worst of times, it was the age of wisdom, it was the age of foolishness . . ." is the opening phrase of Charles Dicken's, *A Tale of Two Cities*. It is our choice to determine how we act upon the circumstances of our time. It is my hope that we will see the power of the changes and transitions that are upon us and we will choose to act upon them constructively, making changes and striving to improve our own practice, and looking towards ATMIM to help guide our way.



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BOARD MEMBER UPDATE

Submitted by Steven Rattendi, Past-President

This summer, effective July 1st, ATMIM will welcome one new and 3 returning members to its Board of Directors.

TREASURER

Steve Yurek, a Past President of ATMIM, will be taking on the role of Treasurer. Steve has been a member of ATMIM since 1980 and has served in numerous roles including Membership Chair, NCTM Rep and President. He is also the current President of ATMNE. Steve has chaired or co-chaired countless number of conferences, and is currently Associate Director of the Center for Math Achievement at Lesley University in Cambridge, MA.

NCTM REPRESENTATIVE

Susan Weiss will continue for another term as NCTM Representative. Sue has been a member of the Board since 2001 when she was elected to the position of Secretary. Sue has presented at many national, state and regional conferences on the use of technology and interactive activities in the mathematics classroom. In 2000, she was awarded the Presidential Award for the Teaching of Mathematics for Massachusetts in Grades K-6. She is currently a teacher of mathematics and technology at Solomon Schechter Day School in Newton, MA.

DIRECTORS

Sherri Flecca will continue on for a 2nd term as director. She has been on the board since 2013, and has been the Chair of our Scholarship Committee. Sherri taught middle school mathematics in Framingham before taking a position as a middle school mathematics coach in the Newton Public Schools. Sherri has also presented at numerous conferences.

Catherine Roberts will join the board for the first time. She is currently a professor of mathematics at College of the Holy Cross in Worcester, MA. Catherine has been interested in K-12 mathematics education since her undergraduate work at Bowdoin College where she earned certification as a secondary school mathematics teacher. At Holy Cross, Catherine serves as the liaison to the teacher certification program, and she has been involved as a leader in the Intel Math Program, a national professional development program for K-8 teachers.

ATMIM Board of Directors

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Kaitlyn Aspell – President-Elect

Steven Rattendi – Past-President

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Katherine Richard – Treasurer

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Cole Gailus – Newsletter Editor

SPRING CONFERENCE REPORT

Submitted by Katie Aspell

The ATMIM Spring Conference took place at Assabet Valley Regional High School on Saturday, March 19th. Focusing on “Engaging All Learners”, the conference began with 2 one hour sessions, for each session there were 7 different speakers to choose from ranging in topics for PreK-post 12 educators. We were lucky to have over 80 educators attend including over 15 preservice teachers from both Lesley University and Stonehill College. Sessions included educators sharing fantastic resources, engaging activities, and new approaches.

After the first two sessions, participants enjoyed a delicious lunch. Here participants shared what they learned and talked with vendors about ways to improve their own practice. Following lunch, keynote speaker, Mahesh Sharma, engaged the audience of mathematics educators. In his presentation, Professor Sharma explained the necessity for strength in number sense and numerical thinking before moving to algebraic thinking. Throughout the keynote, Professor Sharma introduced various activities to strengthen these core skills and understandings while still teaching algebraic thinking. He pushed our thinking about different models and how important our language and the corresponding representations are in supporting all learners. Masterfully weaving in differentiation, Professor Sharma gave practical classroom practices that any teacher could use. All audience members were engaged as he showed the parallel structure of learning number sense in mathematics and building pre-requisite skills for reading.

After Mahesh’s keynote address, the conference participants went to one of the seven final sessions. These sessions served to end the conference with more discussion. It was a great day full of interesting ideas and excited mathematics educators.

TECHNOLOGY REPORT

Submitted by Susan Weiss

I work with 1st graders. By this time of the year, they have worked on both addition and subtraction by using movement on the number line. Here are two sources that I used to enrich the experience. They give a reason for using the number line and help in understanding the meaning of “difference” for subtraction. National Math Manipulatives has listed in the numbers and operations strand an app named **Number Line Bounce**. The app can be found at:

http://nlvm.usu.edu/en/nav/frames_asid_107_g_3_t_1.html?from=category_g_3_t_1.html

The student is given 4 numbers and allows “jumping” on a number line. The goal is for the student to reach an indicated number by combining the jumps. Each jump can be either going forward or backward. My students talked about the notion of below zero and above zero. This app has many variations: some easy ones followed by a hard one. My weak students loved the app since they found ways to solve the problem.

TECHNOLOGY REPORT *(continued from page 4)*

I also used KenKen which is a commercial program but has some free introductory games listed on NCTM (<http://illuminations.nctm.org/Activity.aspx?id=4184>). I used the 4X4 for addition and then 4X4 for addition and subtraction. The goal is to make equations for a given number using only the listed number. The subtraction problems are challenging. My class discussed the meaning of finding the “difference spaces” between two numbers as a means of solving the problem. The one drawback I found is that there is only one game at each level. I used an example puzzle as a way to demonstrate some strategies and the meaning of subtraction as difference. There is a link to the official KenKen site where you can purchase more puzzles.

NCTM REPORT

Submitted by Susan Weiss

At the NCTM National Conference in San Francisco in April, several NCTM Major Initiatives were discussed at the delegate meetings. Here are some of the main items.

Principles to Actions Toolkits will be available to NCTM members on the NCTM website. This includes more professional learning materials such as classroom resources, including the ARCs Series: **Activities with Rigor and Coherence**.

During the summer several programs are being offered:

Engaging Students in Learning: Mathematical Practices

Atlanta, July 11-13 for Grades K-8

Atlanta, July 14-16 for Grades 9-12

Algebra Readiness

Denver, July 18-20 Grades K-8

Number and Operations

Denver, July 18-20 for pre-K - 5

NCTM announced that **The Math Forum** became part of NCTM. The Math Forum is an online community rich in resources and materials such as Dr. Math, Teacher2Teacher, Problems of the Week and is also a source of math education research and professional development.

Additionally, key research about math anxiety was published. Most believe that the attitudes of parents and teachers can impact student academic achievement and success. The study linked parents’ and children’s math anxiety. This interesting study can be found at the following link.

<http://news.uchicago.edu/article/2015/08/10/parents-math-anxiety-can-undermine-children-s-math-achievement>

MASSACHUSETTS' SCHOOL AND DISTRICT ACCOUNTABILITY AND ASSISTANCE SYSTEM

Submitted by DESE

Colleagues: The Massachusetts Department of Elementary and Secondary Education is interested in hearing from a broad range of stakeholders about Massachusetts' school and district accountability and assistance system. Coming changes in statewide assessments and federal law have provided us an opportunity to reconsider the principles of our current system, the data we use to measure school and district progress, and the types of supports and assistance we make available. We have set up several opportunities for you and/or your staff or membership to participate in our initial discussions.

1) We have launched an online [statewide feedback form](#) through which we will gather high-level feedback from a variety of stakeholders. The questions on the form are in the attached document so that you can review them ahead of completing the survey if you wish. The survey includes closed-ended questions about various priorities for the system as well as the opportunity to provide open-ended feedback on a number of guiding questions. **We encourage you to distribute the link to the feedback form widely to your membership** so that as many community members as possible participate: <http://www.surveygizmo.com/s3/2708886/Accountability-and-assistance-stakeholder-feedback-2016>.

2) The feedback form also includes a place to attach a letter or other written feedback instead or in addition to completing the form, if you would like to provide official comment from your organization. You may also send letters to esea@doe.mass.edu at any time.

3) We will be hosting several open conference calls for stakeholders: Tuesday, May 3 from 3 to 4:30 pm; Thursday, May 5 from 3 to 4:30 pm; and Wednesday, May 11, from 1 to 2:30 pm. During each session, we will discuss several of the guiding questions from the feedback form to gather more qualitative and nuanced information about your suggestions and priorities. Each conference call is limited to 20 participants so that we can more easily manage the discussion, so please select just one or two people from your organizations to attend. Please register at <http://www.doe.mass.edu/conference/?ConferenceID=8321>.

Our plan is to gather feedback through the end of the school year, spend the summer developing some options and recommendations, and then reengage with stakeholders in the fall to solicit input on our proposals. We look forward to learning more from you during this process and hope you will be able to participate.

Carrie Conaway,
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<http://www.doe.mass.edu/research/>

LESLEY UNIVERSITY 4TH ANNUAL SUMMER MATH INSTITUTE

Submitted by Steve Yurek

The Lesley University 4th Annual Summer Math Institute will be held from Tuesday, July 26, through Thursday, July 28, 2016 at the University Hall campus in Cambridge. Each day there will be sessions in 3 grade levels: Elementary (including PreK – K), Middle and Secondary School and each 100-minute session will be repeated later in the day, so that each teacher from each grade level will experience everything that every other teacher will experience. There will also be a 60-minute General Session each day that will be coordinated with the Institute's theme: ***Mathematical Representation: Looking at, and Making Use of, Structure.***

As in the past, our presenters represent the most respected math educators and professionals from New England and beyond, among them are Dr. Anne M. Collins from Lesley University, Jim Matthews from Siena College, Vicki Milstein from Brookline Public Schools, Donna Knoell from Pawnee Mission Kansas, Dr. Kate Marin from Stonehill College, Dr. Jay Schiffman from Rowan University, Nancy Johnson from Hopedale Public Schools, Natalya Vinogradova from Plymouth State University, Linda Dacey, Lesley University (ret) and many more.

Each day participants will be treated to a satisfying breakfast and a hearty lunch and have wonderful networking opportunities with current, former and soon-to-be colleagues.

Each day 6 PDP's will be awarded.

The following links will provide additional information, including registration and fee:

[Click here for information about the Lesley University 4th Annual Summer Math Institute](#)

[Click here to register for any or all workshop sessions](#)

Questions? Contact Steve Yurek at syurek@lesley.edu

NEW³ 2016 JOINT CONFERENCE



A joint Conference of the Associations of Mathematics Teachers of

New York
[AMTNY](#)

New Jersey
[AMTNJ](#)

New England
[ATMNE](#)

Registration and information can be found by pasting this URL to your address bar.
<http://www.amtnys.org/Sub%20Pages/Conferences/Summer%20Conference.html>

TRAVEL THE WORLD, EARN PD CREDITS AND BRING GLOBAL UNDERSTANDING INTO YOUR CLASSROOM

Submitted by Nancy Johnson

Founded in 2007, Global Exploration for Educators Organization (GEEO) is a 501c3 non-profit organization that has sent over 1300 teachers abroad on adventurous travel programs. With GEEO educators can earn professional development credits while seeing the world. GEEO's trips are 7 to 21 days in length and are designed and discounted to be interesting and affordable for teachers. In addition to amazing tour leaders, many of the programs are accompanied by university faculty that are experts on the destination.

GEEO also provides teachers educational materials and the structure to help them bring their experiences into the classroom. The trips are open to all nationalities of K-12 and university educators, administrators, retired educators, as well as educators' guests.

GLOBAL EXPLORATION FOR EDUCATORS *(continued from page 8)*

GEEO is offering the following travel programs for 2016: Bali/Lombok, Bangkok to Hanoi, Costa Rica, Eastern Europe, The Galapagos Islands, Iceland, India/Nepal, Southern India, Ireland, Israel, Italy, Morocco, Myanmar (Burma), Peruvian Amazon, Peruvian Andes, Portugal/Spain, Heart of the Silk Road, Southern Africa, Turkey, Vietnam/Cambodia, Western Balkans, Morocco (Winter Break), The Philippines (Winter Break) and Mt. Kilimanjaro (Winter Break). The registration deadline is June 1st, but space is limited and many programs will be full well before the deadline.

Detailed information about each trip, including itineraries, costs, travel dates, and more can be found at <https://www.geeo.org/> or by calling 1-877-600-0105.

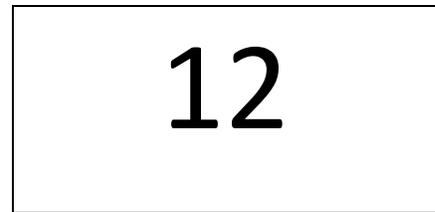
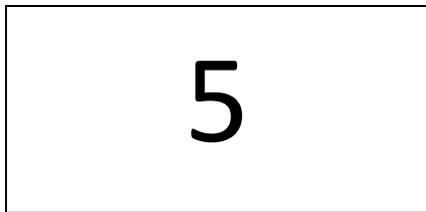
PROBLEMS TO PONDER

Submitted by Polina Sabinin

The questions below are from the 2016 Math Kangaroo International Competition in Mathematics (www.mathkangaroo.org). Math Kangaroo 2016 was held on March 17, 2016. For information about participating in this event, contact MathKangaroo@bridgew.edu.

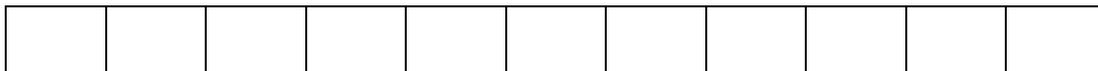
ELEMENTARY SCHOOL

1. Zoe has two cards. She wrote a number on each side of both cards. The sum of the two numbers on the first card is equal to the sum of the two numbers on the second card. The sum of the four numbers is 32. What could be the two numbers of the sides that we cannot see?



- A. 7 & 0 B. 8 & 1 C. 11 & 4 D. 9 & 2 E. 6 & 3

2. John has a board with 11 squares as shown in the picture. He puts a coin in each of eight neighboring squares without leaving any empty squares between coins. What is the maximum number of squares in which one can be sure that there will be a coin?



- A. 1 B. 3 C. 4 D. 5 E. 6

PROBLEMS TO PONDER (CONTINUED FROM PAGE 9)

3. The number 2581953764 is written on a strip of paper. John cuts the strip 2 times and gets 3 numbers. Then he adds these 3 numbers what is the smallest possible sum he can get?
- A. 2675 B. 2975 C. 2978 D. 4217 E. 4298

MIDDLE SCHOOL

4. The symbols \bigcirc , \square , and \triangle represent 3 different digits. If you add the digits of the 3-digit number $\bigcirc\square\bigcirc$ the result is a 2-digit number $\square\triangle$. If you add the digits of the 2-digit number $\square\triangle$, you get the 1-digit number \square . Which digit does \bigcirc represent?
- A. 4 B. 5 C. 6 D. 8 E. 9
5. The kangaroos, Jum and Per, start to jump at the same time, from the same point, in the same direction. They make one jump per second. Each of Jum's jumps is 6 m in length. Per's first jump is 1 m in length, the second is 2 m, the third is 3 m, and so on. After how many jumps does Per catch up to Jum?
- A. 10 B. 11 C. 12 D. 13 E. 14
6. Theo's watch is 10 minutes slow, but he believes that it is 5 minutes fast. Leo's watch is 5 minutes fast, but he believes that it is 10 minutes slow. At the same moment, each of them looks at his own watch. Theo thinks it is 12:00. What time does Leo think it is?
- A. 11:30 B. 11:45 C. 12:00 D. 12:30 E. 12:45

HIGH SCHOOL

7. When the positive integer x is divided by 6, the remainder is 3. What is the remainder when $3x$ is divided by 6?
- A. 4 B. 3 C. 2 D. 1 E. 0
8. Each of the eight identical envelopes contains one of the following numbers: 1, 2, 4, 8, 16, 32, 64, 128. Eva chooses a few envelopes randomly. Alie takes the rest. Both sum up their numbers Eve's sum is 31 more than Alie's. How many envelopes did Eve take?
- A. 2 B. 3 C. 4 D. 5 E. 6
9. How many different real solutions are there to the equation below?
- $$(x^2 - 4x + 5)^{x^2+x-30} = 1$$
- A. 1 B. 2 C. 3 D. 4 E. infinitely many

PROBLEMS TO PONDER (CONTINUED FROM PAGE 10)**ANSWERS**

1. C
2. D
3. B
4. E
5. B
6. D
7. B
8. D
9. C

Professional Development Resources

Are you looking for good professional development resources?

Consider the *New England Mathematics Journal*!



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