Association of Teachers of Mathematics in Massachusetts

2020 Spring Conference

*Math is for ALL Not for Sum*

Friday March 13, 2020
College of the Holy Cross, Worcester, MA
WELCOME TO THE 2020 ATMIM SPRING CONFERENCE

The Association of Teachers of Mathematics in Massachusetts, ATMIM, is an organization devoted to improving the mathematical education of students in Massachusetts.

The purpose of ATMIM is to provide for the interchange of evolving ideas and current research involving the teaching of mathematics and its applications, to cooperate with other organizations in the improvement of instruction and curriculum, to promote professional and social relations among mathematics teachers in schools and colleges, and to increase interest in mathematics.

ATMIM is an affiliate of the National Council of Teachers of Mathematics (NCTM) and the Association of Teachers of Mathematics in New England (ATMNE). All members of ATMIM are automatically members of ATMNE.

Learn more about ATMIM at our website and follow us on Twitter and Facebook.

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Jason Hardin and Jeanette Hogan
ATMIM Spring Conference

GENERAL SCHEDULE

7:15-8:00  Registration and Continental Breakfast (Ballroom)
           Visit with Exhibitors
8:00-8:15  Welcome and Overview (Ballroom)
8:30-9:30  Session 1
9:40-10:40 Session 2
10:50-11:50 Session 3
11:50-12:30 Lunch and Visit with Exhibitors (Ballroom)
12:30-1:30  Keynote – Marian Dingle
1:45-2:45  Session 4

EXHIBITORS

Be sure to visit with our exhibitors. Exhibits will be open from 7:15 a.m. – 2:45 p.m.

- IXL
- Carnegie Learning
- hand2mind
- I Know It
- ASSISTments
- Great Minds
- Houghton Mifflin Harcourt
- Learning Cycles

A special thanks to IXL for sponsoring our breakfast this morning!

Share your thoughts and takeaways from the conference by tweeting with the hashtag #ATMIMSpeaks.
1 Math+C: Mathematics Through Programming in the Early Grades
Grades PK - 2 Room 403
The Math+C project at EDC, in partnership with the Waltham Public Schools, is developing a coherent integration of CS ideas and skills into elementary mathematics, using programming as a language to describe the mathematics. In four microworlds we’ve designed, children solve puzzles by articulating solution steps through simple programming. Come see video of second-graders developing both mathematical and CS concepts. Please bring a laptop so you can engage in solving the same puzzles.
Kate Coleman and Kristen Reed
Twitter: @kcoleman_math
@KristenReed29
Education Development Center, MA

Elsa Aviza-Oberg and Zachary Kolar
Twitter: @ElsaAviza
@ZakKolar
Waltham Public Schools

2 Increasing Your Student’s Number Sense
Grades K - 8 Room 406
Number sense is one of those things that we can tell if students don’t have it but what is it and how do we develop it in students who lack basic number sense? This presentation will give you routines and strategies that are easy to implement in your classroom to help improve overall number sense in students. With increased number sense, students will become more independent and will be more successful problem solvers, which is a critical skill to develop in our students.
Karen Walsh Fortin
Twitter: @kwalshfortin
Nashoba Regional School District, MA

Nancy Weber & Elizabeth Cowen

3 Rise and Shine! Number Routines That Allow ALL Students to Get Up, Talk-Math and Shine!
Grades 3 - 5 Room 409
This highly-participatory session is designed for teachers who are excited to learn and discover how daily “get up and go” number routines can energize the math classroom and help ALL students to grow into math learners, doers and talkers. Come see how number routines can reveal students’ understandings as well as misunderstandings of mathematical concepts and ideas in a safe and inviting setting. Teachers will discover how moving from just sitting and talking to rising and shining establishes positive class relationships based on good-discourse and allows all students equal access to mathematics. Get ready to rise and shine!
Marcie Abramson
Twitter: @mathmarcie
Brandeis University, MA

4 Got Math Stations?
Grades 3 - 5 Room 519
Got math stations? Well, you can and let us show you how! Math Stations can be used to informally assess, review previously learned skills, preview upcoming math content, provide direct intervention to struggling learners in a smaller group, and so much more! We will share how our team has implemented weekly math stations, and provide evidence of its success. Math Stations provide every student the opportunity to become “agents of their own learning” through hands-on games, activities, and small group work that is tailored to meet the needs of students. Math stations don’t have to be complicated and anyone can do it. Let us help you start your own routine of math stations today. Participants will leave with sample activities and games that can be used to start math stations of their own.
Michele Lippens and Lucy Alekseyev
Cambridge Public Schools, MA
5  **Math News: A Weekly Routine to Promote Analytical and Aware Global Citizens**  
**Grades 6 - 8**  
**Room 407/408**  
How can we encourage our students to apply their math knowledge outside of the classroom to be engaged global citizens? In the weekly ritual of Math News, students read articles, analyze graphs, and engage with media in ways that promote active questioning and analysis of the world around them. Together, we will engage in a few routines as students, as well as look at a wealth of news sources and resources for data visualization.  
**Liz Caffrey**  
Twitter: @AsymptoticLiz  
Atrium School, MA

6  **Teaching Math Vocabulary**  
**Grades 6 - 8**  
**Room 304/305**  
Misunderstandings in math can come from not having the vocabulary to describe the concept. This session will focus on how to incorporate teaching vocabulary into your math lesson.  
**Mark Drago**  
Stoneham Public Schools, MA

7  **Fostering Student Agency Through Choice and Student Collaboration**  
**Grades 9 - 12**  
**Room 401**  
Participants will learn and experience two strategies that create student choice with in the intention of developing student agency, and two additional strategies that build student collaboration. Participants will have to create an implementation plan for at least one of the strategies in their classroom context.  
**Francis Pina**  
Twitter: @franklyPINA  
Boston Public Schools, MA

8  **Powerful Moments in Math Class: Why They Stand Out and How to Create More of Them**  
**All Grade Levels**  
**Room 328**  
Why do students remember some lessons but seem to forget others completely? Researchers discovered that memorable experiences contain the following elements: Elevation, insight, pride, and connection. In this session, you will learn how to leverage these elements in math class to create meaningful and unforgettable moments for all students.  
**Mike Flynn**  
Mount Holyoke College, MA
9 Young Mathematicians: Supporting Educators and Families to Promote Children's Early Mathematical Learning
Grades PK - 2 Room 403
Research indicates that mathematical skills in early childhood may be the strongest predictor of later school success in both mathematics and reading. During this session, participants will learn about a cross-context intervention that supports teachers and families to engage in mathematical interactions through games and short problem-solving stories. Participants will view and discuss videos of children engaged in mathematics learning; explore mathematics games and materials; and learn about resources and supports for early childhood educators.

Lori Coletti and Kristen Reed
Twitter: @EarlyMathEDC
@KristenReed29
Education Development Center, MA

10 Counting as the Key to Unlocking Number Sense
Grades PK - 2 Room 406
Learning to count is a critical milestone that is key to developing strong number sense. How do children learn to count? What does the research tell us? Why do children struggle and how do we support them? How do we provide meaningful experiences with counting that lead to strong number sense? This session will answer these questions and provide routines and activities for immediate use in classrooms.

Sue Looney
Looney Math Consulting, MA

11 It's a WRAP: Making Sense of Lesson Closure
Grades 3 - 5 Room 409
One of the most challenging aspects of instruction is in being able to provide lesson closure that is consistent, doable, and productive for both students and teachers. Participants will be provided with a framework that identifies key elements of lesson closure that will help teachers wrap lessons with consistency, quality, and purpose, leading them to believe that the “trade off” of time from instruction is beneficial and will aid in building mathematical capacity for all.

Christine Moynihan
Taunton Public Schools, MA

12 Inclusion and Equity in Facilitated Mathematical Discussions
Grades 3 - 5 Room 519
At a recent NCTM regional conference, Kassia Omohundro Wedekind and Allison Hintz spoke on “Cultivating Listening” during mathematical discussion. How do you measure listening? What does good listening look like? Can you teach listening as a skill? This talk attempts to answer these questions through structuring whole class discussions, individual discussions, and measuring progress individually through complete sentence written journal responses. This approach aims to increase equitable access to complex math topics by engaging the whole student in discussion.

Fernando Acosta and Lauren Giordano
The Chestnut Hill School, MA
13 How Common Wrong Answers Can be Used to Support Student Learning
Grades 6 - 8 Room 407/408
Common Wrong Answers can be a powerful tool to understand the learning process and address math misconceptions. Our team has analyzed thousands of students’ responses from Open Educational Resources (OER) math problems. In this presentation, I will explain how to identify common wrong answers and leverage them to help students learn!

Cristina Heffernan
Worcester Polytechnic Institute, MA
Cindy Starks

14 All Math is the Same
Grades 9 - 12 Room 304/305
What if your students started learning higher-level concepts in the third grade? How would those extra years of preparation pay off? In this workshop we look at how teaching basic topics with long-range understanding of mathematics builds a solid foundation for students to easily incorporate new ideas as they mature mathematically.

Jamil Siddiqui
Twitter: @jamilsid312
East Bridgewater Public Schools, MA

15 Students Think
Grades 9 - 12 Room 401
Students are already thinking. Before we tell them anything, they have ideas and questions. Students are naturally curious, but somehow schooling has trained them to quash those wonderings. How do we elicit and validate their ideas? During this session we’ll experience routines that provide low pressure opportunities for all students to contribute to the class discussion. We will then consider when each routine is best used and how to build off the ideas generated.

Tina Cardone
Lesley University, MA

16 The Good, the Bad and the Ugly: The Language of Math
All Grade Levels Room 328
How has the Mathematical Practice standard of precision changed how teachers of math use language and vocabulary in their daily practice? This session will take a critical look at math vocabulary and phrases, both new and old, that are commonly used in classrooms today. Come ready to laugh, ponder, reflect and renew!

Pam Halpern
Salem State University, MA
Cara Goldberg
Lexington Public Schools, MA
Featured Speaker

Susan Weiss, Margaret J. Kenney Award Speaker
Session 4 -- Presentation #27
Using Discrete Math to Make Math Exciting for All Students

IXL is personalized learning

K-12 curriculum aligned to MA standards
Real-Time Diagnostic assessment
Personalized guidance for each student
IXL Analytics with real-time insights

Free 30-day classroom trials available at www.ixl.com/trial
17 Open Middle Math in Elementary
Grades PK - 2 Room 403
Looking for more engaging problems that support students to understand & love mathematics? Want to increase the quality of discourse in your classroom? Inspired by Robert Kaplinsky & Nanette Johnson, learn how to effectively implement Open Middle problems to provide students with opportunities for strategic thinking, rich discussions, and connection-making. Learn how a worksheet of practice problems can be replaced by one question that supports students to develop both procedural fluency & conceptual understanding - while having fun too!

Molly Rawding
Twitter: @RawdingMolly
Lexington Public Schools, MA

Tara Trifiletti
Twitter: @TaraTrifiletti
Braintree Public Schools, MA

18 No More Tricks!
Grades 3 - 5 Room 406
Discussion of instructional strategies for developing conceptual understanding of mathematical concepts in grades k-8 and how to implement them into your classroom. We will explore how common tricks undermine students' understanding of concepts and discover how to use math tools to help students make sense of concepts through the CRA (concrete, representational, abstract) progression.

Danielle Kreuger and Kristi Pramuka
Regional School District 1, CT

19 Visual Number Talk Routine: Making the Connection between Representations and Equations
Grades 3 - 5 Room 409
Build connection-making and improve numerical fluency with Visual Number Talks. Students will want more and be disappointed when this routine is over while learning important mathematics. This routine has the elasticity to meet the needs of all students without using "leveled" worksheets.

Our goal is for every student to:
Do and discuss important mathematics
Believe in themselves and their capacity
Stick to the work at hand
Enact the Practice Standards
Build confidence and competence.

Polly Wagner
Twitter: @pwagnerivy
Erving Elementary School, MA

Jana Sunkle
Boston Public Schools, MA

20 Rethinking Pre-Assessments: Gathering Data with Equity in Mind
Grades 3 - 5 Room 519
All students are capable of mathematical thinking, but traditional pre-assessments usually focus on what students don’t know. Let’s examine our practices through an equity lens. Together, we will collaboratively analyze student work samples, and identify formative pre-assessment strategies that honor student thinking, support instructional decision making, and promote equity.

Jenna Laib
Brookline Public Schools, MA
21 Analyzing the Equity of Teacher Feedback in the Development of an Artificial Intelligent Tool for Math Education
Grades 6 - 8 Room 407/408
Daily communication has become easier and quicker with the help of smart technology. Suggested replies and text messages allow us to easily click and send rather than spending time writing. We are applying this same technology to advance math teaching. Come learn about how we are analyzing the way teachers give feedback, similarities/differences and/or implicit/explicit biases in their feedback, and more, to develop an artificial intelligence tool to support math teaching.

Cristina Heffernan
Worcester Polytechnic Institute, MA

22 Using Technology to Encourage Deeper Learning
Grades 9 - 12 Room 304/305
Explore the use of technology, such as Desmos, to promote higher level thinking and retention. We will work with participants to create Desmos teacher activities and share ones we have created ourselves. We will also explore using technological enhancements to help students with conceptual understanding before moving to procedural fluency. Participants are encouraged to bring a laptop to fully engage in this workshop.

Christopher Szkutak and Alicia Edkin
Twitter: @WHRHS_MrSzkutak
@WH_Edkin
Whitman Hanson Regional School District, MA

23 Math/Science Cohort Program for Students of Color - Making the Push to Honors/AP
Grades 9 - 12 Room 401
We will share learnings regarding the implementation of Natick Public School’s initiative to push students of color into Honors and AP courses. We hope to foster discussion within other districts, and create a network of educators who are on a similar path.

Andrew Hollins and Jayashree Pillai
Natick Public Schools, MA

24 Strengthening Mathematics Curriculum in Massachusetts: Resources from the MA Dept. of Elementary and Secondary Education
All Grade Levels Room 328
Expanding access to high-quality, standards-aligned mathematics curricular materials can significantly improve student outcomes, especially when teachers have the professional learning opportunities they need to make the most of those materials. This presentation will focus on resources and programs the MA Dept of Elementary and Secondary Education has initiated to support districts and educators to ensure that all students in Massachusetts enjoy the many benefits of a strong math curriculum.

Ian Stith and Stephen Garschina-Bobrow
Department of Elementary and Secondary Education, MA
Lunch Keynote

Marian Dingle

Ballroom 12:30-1:30 PM

Where is the Love?

As educators, we have pledged ourselves to do what is best for children. For many, this is how we show love. Are these two concepts the same? Should they be? Can love be quantified? Let us dig deep into this love conversation and connect it to our mathematical mission.

Marian Dingle is an elementary classroom educator with twenty years of experience. Always fascinated with mathematics, her early years in education are characterized by her obsession with advocating for marginalized students and guiding families toward opportunities. However, more recent years have caused her to move toward more public advocacy and activism in mathematics education.

Marian’s mission is to help mathematics educators provide a more culturally responsive education to all students, especially those with marginalized identities. Often, that means centering their experiences and those of the educators who share those identities. By pushing the conversation through her blog, Twitter, and in person, she seeks to center the intersection between mathematics and social justice. She has been a speaker at NCTM Regional and Leadership Conferences; is a Heinemann Fellow 2018-2020, conducting action research on the effects of positive cultural identity on student self-efficacy, confidence and performance; serves on the advisory board of Teaching Tolerance; and has shared her work through various blogs, podcasts, and professional publications.
25 Increasing Equity via Thinking Routines
Grades PK - 2
Room 403
As participants in the Alpha Pilot of IMK-5, we witness that predictable and challenging thinking routines invite all students to engage and see themselves as capable mathematicians. We will share observations about how these thinking routines have increased participation by students who previously self-identified as unable, or were perceived to be unable to access our longtime curriculum. The emphasis on students posing questions in this thoughtful curriculum empowers students and builds a joyful mathematical community.

Maureen Durkin O’Connell
Ipswich Public Schools, MA

26 What Does it Mean to be “Smart” in Math Class?
Grades 3 - 5
Room 406
Ask any student in math class, “Who is smart here?”, and without hesitation, the child will confidently point out the students who have been granted that status. “But on what premise?”, one might ask, and who decided? Imagine the classroom in which the response to “Who is smart in math?” was “We are.” In this session we will examine what it takes to make that happen by providing reliable examples of what teachers can do.

Andrea Darby and Polly Wagner
Shutesbury Elementary School, MA

Margaret J. Kenney Award Speaker

27 Using Discrete Math to Make Math Exciting for All Students
Grades 3 - 5
Room 409
Explore several topics in Discrete Math to make math exciting and enhance any math program. Participants will leave with new ideas that make math fun as we learn to topics such as probability, voting, best routes, and more.

Susan Weiss
Solomon Schechter Day School, MA

28 Unleveling Mathematics in Grades 5-7 Utilizing a Math Workshop or Guided Math Model
Grades 5 - 7
Room 519
The emphasis on math learning and teaching has shifted. Districts recognize the need to provide a personalized learning environment that will present all students with appropriate challenges. The model of leveled math in middle grades does not meet the needs of all students. We will offer an alternative model for personalizing math education with an emphasis on deeper learning and address common concerns of unleveling.

Kristina Bold and Mary O’Gorman
Westford Public Schools, MA

About the Margaret J. Kenney Award:
The Margaret J. Kenney Award was created by ATMIM to honor the contributions of Peg Kenney, a beloved mathematics professor at Boston College. Peg will be greatly missed in the mathematics education community both locally and nationally. She was a gifted leader, author, and speaker. Peg was a past president of both ATMIM and ATMNE; she served on NCTM’s Board of Directors and several committees. Her influence has been phenomenal. While her command of mathematics and its teaching was extensive, Peg had a particular interest in Number Theory, Discrete Mathematics, and Geometry. In order to honor Peg’s legacy, each year members of the ATMIM board will select an exemplary Massachusetts teacher to give a content-rich presentation in one of these three areas of mathematics.
1:45 P.M. – 2:45 P.M.

29 Concrete Instruction in Middle School? Yes Please!

Grades 6 - 8 Room 407/408
Think manipulatives are just for elementary math? Isn’t it odd that as math becomes more abstract, we offer fewer tools to support thinking and help students make connections? This session will focus on the role of concrete exploration in developing understanding of key middle school concepts including integer operations, expressions and equations, and more! Come and see how to unleash the power of tools and models as a pathway to deep student understanding!

Alison Mello
Foxborough Public Schools, MA

30 Identifying and Dismantling Implicit Power Structures in the Mathematics Classroom

Grades 9 - 12 Room 304/305
This session is an immersive experience where you will take on the role of a “student.” Collaborating with other participants, you will complete a geometry modeling task. While experiencing the challenge of navigating group work, you will be made aware of the "air" and must choose how to act in light of the power structures that exist.

Xi Yu
Cambridge Public Schools, MA

31 How to Analyze Teacher Discourse Moves in My Instruction: A Tool for Self-Reflection on Discourse.

Grades 9 - 12 Room 401
Participants will learn how to use Teacher Discourse Moves (TDMs) in an intentional and productive way. After learning about the TDMs, participants will analyze teachers’ use of TDMs by using a tool focused on discourse. Participants will reflect on how the tool can be used while watching their own teaching to enhance discourse in their practice.

Cara Goldberg
Lexington High School, MA