

**Association of Teachers of Mathematics
in Massachusetts**

2024 Spring Conference

All Students Deserve a Piece of π

Thursday March 14, 2024
College of the Holy Cross

WELCOME TO THE 2024 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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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 – Amy Lucenta and Grace Kelemanik |
| 1:45-2:45 | Session 4 |

EXHIBITORS

Be sure to visit with our exhibitors. Exhibits will be open from 8:00 a.m. – 12:45 p.m.

- AB Curriculum Solutions
- CPM Educational Program
- hand2mind
- Imagine Learning
- Texas Instruments
- Bedford, Freeman & Worth Publisher
- Framingham State University
- Heinemann
- Savvas Learning Company
- WestEd

A special thanks to our Breakfast Sponsor hand2mind and
our Lunch Sponsor Imagine Learning!

1 How We Grade in a Thinking Classroom**All Grade Levels** **Suite B/C**

Here, we will facilitate an in-depth analysis of key elements from chapter 14 from Peter Liljedahl's book, "Building Thinking Classrooms". Here, we will explore how teachers can begin to transition from points-based grading to standards-based grading in a painless fashion. In addition, participants will be given time to copy, interact with, and customize specially made Google Sheet that automates student grades exactly the way Peter describes in his text.

[Session Slides](#)**Tim Brzezinski**, New Haven Public Schools (CT)**2 Fostering the Connection: How Knowing More about Your Students' Identities Can Impact Your Math Instruction****All Grade Levels** **Room 408/409**

After a research project in which our team explored how learning about student identities informs teachers' practices, we discovered something we had not expected. While teachers deeply valued learning more about their students, they had difficulty seeing the connection between knowing their students and math learning. We want to cultivate that connection. We are excited to share our ideas with you about unearthing student identity and broadening our definition of mathematics.

[Session Slides](#)**Annie Sussman**, TERC**Polly Wagner**, Math Coach Connection**Amy Chang**, Mohawk Trail Regional School District**3 Struggle Not Suffer! Perseverance and Productive Struggle in Math Class****Grades 3 – 5** **Room 401**

This highly participatory session will engage teachers in non-routine and "struggle-worthy" problems and tasks that will excite, motivate and welcome all students (and teachers!) into the math classroom. Teachers will dive into tasks that blend the Mathematical Practices with the elements of perseverance and rigor to discover how to create an environment that nurtures productive struggle. Come learn how to build a classroom where struggle is valued and where ALL students build a deeper understanding and love of mathematics.

Marcie Abramson, Brandeis University**4 Rethinking Intervention to Give Students Better Access to Tier 1 Instruction****Grades 3 – 5** **Room 402/403**

In this session, we will focus on proactive planning for intervention in order to provide students better access to Tier 1 instruction. We will use UnBound Ed's white paper: Equitable Mathematics Instruction: Enacting Instruction that is Grade-level, Engaging, Affirming and Meaningful to anchor the discussion. We will then present a case study with examples and adjustments we have made to make intervention practices more equitable, and finally we will give participants time to consider application in their context.

[Session Slides](#)**Kathleen Hubbard**, Needham Public Schools**Lindsey Sawyer**, Needham Public Schools**5 You Said What?****Grades PK – 2** **Room 406/407**

As math educators we often struggle to record or represent as a student verbally explains a mental strategy. During a tool talk, image talk or number talk, it is essential that students practice using verbal language to explain, leaving us, the teachers, to represent their knowledge of the number system. This workshop will give an opportunity for educators to collaborate with others in listening to student language, and practice representations of student thinking in order to create an equitable learning experience for all students. Representations will be driven by student language, but will follow current research on developmentally appropriate representations. Participants will leave with more confidence and ideas on how to represent their students' thinking.

[Session Slides](#) (and [Hand Out](#))**Sara Wright**, Hampden Wilbraham Regional School District

6 Project-Based Learning for All: Exploring the Outdoors via Mapmaking in Middle School Math

Grades 6-8 Room 320

All students deserve to explore the outdoors. Doing so while engaging in meaningful math discussions is a win-win for everyone. In our project-based middle school math unit, students learn map-reading, gather data, hone estimation and measurement skills, and apply proportional reasoning and problem solving skills to create scale drawings (maps!) of their local community and orienteering courses for younger grades. After learning about the unit, participants will orienteer outdoors on the Holy Cross campus.

Victoria Cavanaugh, Brookline Public Schools
Barbara Bryant, Navigation Games

7 Reflections from Bringing the Real World into Real Classroom

Grades 9 - 12 Room 410

As an applied mathematician and math modeler, I enjoy open-ended messy problems. After 25 years teaching at the post-secondary level and 7 years leading the American Math Society, I am now privileged to lead the Consortium for Mathematics and Its Applications, a MA-based, 40+ year nonprofit dedicated to providing students & teachers with resources centered around math modeling. This semester, I'm teaching with COMAP materials to get front-line experience. How's it going so far? What are my mid-stream takeaways? How might you access quality materials to bring the real world into your classroom and inspire the next generations of students?

[Session Slides](#)

Catherine Roberts, COMAP (Consortium for Math and Its Applications) & College of the Holy Cross

8 Incorporating 6 EL Strategies into Math Class Grades 9 - 12 Room 519

During this session, participants will learn six English Learner (EL) instructional strategies that can be applied to math lessons. While the modifications are designed to help increase access to the curriculum for EL students, they will also improve the academic language proficiency of all students. You'll walk away with concrete examples of how to embed these strategies into your own math lessons, starting tomorrow.

[Session Slides](#)

Heather Russo, Marlborough Public Schools



The 2024 ATMNE conference will be held on **October 24 & 25, 2024** at the Sheraton Tara in Nashua, NH.

TEACHERS
 Your Voice, Your Ideas, Your Experiences are **IMPORTANT!**
 Consider joining us and sharing about your journey - and how you are inspiring, engaging, and **Awakening Student Agency!**



Join keynotes
 Pamela Seda,
 Ken Williams,
 Rachel Lambert, and
 Latrenda Knighten



Submit your speaker proposal form by **Monday, April 1, 2024** to be considered for the program.

<http://gg.gg/ATMNE24inNH>

student readiness for participation will be the three themes embedded throughout the presentation.

[Session Slides](#)

Katie Leman, Marlborough Public Schools

11 BTC Thin Slicing in Elementary

Grades 3 – 5

Room 401

Task design inspired by Liljedahl's Building Thinking Classrooms. We explore how to design tasks that provide opportunities for students in small groups to move through curricular content. The pedagogical power in these "thin slicing tasks" derives from variation theory, where the designer must carefully vary only one aspect of the task progresses while holding other elements constant. The progression of tasks helps students go from the 'low floor' to the 'high' ceiling. In this session, we experience the implementation of a thin-slicing task, and reflect in the design, implementation and experience. Finally, participants work on developing a thin-slicing task on one topic with a partner, and or small group, and engage in a round of feedback with another team.

[Session Slides](#)

Kristin Benedict, Framingham Public Schools

Leigh Ann Evans, Framingham Public Schools

9 AI is not what you think it is, unless you think it is hot garbage

All Grade Levels

Suite B/C

Okay some AI is useful, like my vacuum cleaner or my email spam filter. But most AI is terrible, despite what is often portrayed by tech companies and news media as profoundly advanced technology superseding human intelligence. AI can be expensive and harmful. As AI technologies creep into our classrooms, and as we hope to educate students in data sciences, it is important that we educate ourselves and our students with skepticism (being reasonably critical).

[Session Slides](#)

Jededyah Williams, Belmont High School

10 Restorative Circles - Supporting Learning & Discourse

All Grade Levels

Room 320

The presentation will begin by defining restorative practices and doing an overview of the various types of circles, within the 3 tiers of support. Then, the group will focus on how to implement circles in the math classroom to support student learning, build community, and drive high levels of engagement with discourse. Vocabulary usage, language objectives, and

12 Deep and Rigorous Mathematics and Strength-based Assessment: Two Components of Equitable Teaching and Learning

Grades K – 5

Room 402/403

What does equitable teaching and learning look and sound like? How do deep and rigorous mathematics and strength-based assessment support the development of students' mathematical identity and agency? In what ways can curriculum materials promote equity in the mathematics classroom and support students who have been historically marginalized? This session explores a framework for reflecting on characteristics of a mathematics learning community that foster and support all students in becoming powerful thinkers and learners.

[Session Slides](#)

Karen Economopoulos, TERC, Cambridge MA

Megan Murray, TERC, Cambridge MA

Annie Sussman, TERC, Cambridge MA

13 Moving Past Counting On and Counting Back for Addition and Subtraction

Grades PK – 2

Room 406/407

Many older students are stuck in the phase of counting on and counting back. With rich learning experiences in K-2, by the end of second grade, students can use composite strategies to reason about math facts and larger addition and subtraction problems. Grounded in the research of Dr. Steffe and Dr. Wright, this session unpacks why so many are stuck and shares instructional strategies to support students to move beyond this stage.

[Session Slides](#)

Marria Carrington, Mount Holyoke College

14 Exploring Algebra and Probability in Middle School with Virtual Manipulatives

Grades 6-8

Room 408/409

In this session, designed for middle school teachers, participants will explore lesson ideas, class openers and warm-up routines, and exploratory spaces that will engage students in thinking deeply about algebraic ideas, and explorations of theoretical and experimental probability. Participants will leave the session with the skills and knowledge to immediately use these activities with their students, as well as the ability to author their own activities using virtual manipulatives. The session will use the free virtual manipulatives and tools available on Polypad from Desmos Classroom.

[Session Slides](#)

David Poras, Polypad, by Amplify

15 Exploring with Technology as a Learning Tool in the Mathematics Classroom

Grades 9 - 12

Room 410

Participants explore Mathematical Modeling with Coding. Exploring projects and ideas that challenge middle and high school students. Coding experience is relevant to discovering projects made to use with automated vehicle technology. The automated vehicle provides students opportunities to engage concretely with concepts in Algebra, Geometry, and STEM. This session will highlight an example of Culturally Responsive Instruction. Discover activities and tasks that may stretch your thinking about what can be done with hands-on technology.

[Session Slides](#)

Filiberto Santiago-Lizardi, Boston Public Schools

16 The Role of Counterexamples in Mathematics

Grades 9 - 12

Room 519

Counterexamples can alleviate common misconceptions. Focusing on their role, we cover the areas of number and operations, pre-calculus, calculus, and discrete mathematics examining some classical theorems. Participants discover why all hypotheses need to be satisfied and form counterexamples when they are relaxed. We attempt to salvage false statements in order to render them true. Delving more deeply in the sense of not stopping after a few cases plays a vital role in our excursions.

[Session Slides](#)

Jay Schiffman, Retired (Rowan University)

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17 Pi and Other Things You Find in Strange Places

All Grade Levels

Suite B/C

Some mathematical ideas build across multiple topics. You find some of these in strange places. Let's explore some vertical connections and see how ideas like area models, number lines, and pi turn up in unexpected places.

Paul Gray, NCSM: Leadership in Mathematics Education

18 Supporting Professional Learning Communities to Enhance Mathematics Instruction by Leveraging Data

All Grade Levels

Room 320

Discover the power and potential of PLCs. This session will include concrete practices to facilitate and structure a high-quality PLC for teachers by: Ensuring content aligns with teachers' authentic practice Centering on student work and data Supporting strong teacher engagement These ideas emerged from our research on virtual PLCs that we have led for the last three years.

[Session Slides](#)

Cristina Heffernan, The ASSISTments Foundation

19 A Data Journey: Shifting Mathematical Mindsets

Grades 3 – 5

Room 401

Follow one school's journey into investigating student beliefs about math ability, starting in a single classroom and expanding to the whole school. We will present analysis of data from; student and teacher perception surveys, classroom observation notes, and examples of student work. We explore how pedagogical practices could impact the development of student math identity. Participants will leave with resources to assess student and teacher mindset and strategies to strengthen students' positive math identity.

Janamarie Sunkle, Boston Public Schools
Jeff Parks, Boston Public Schools

20 Feedback that Fits: Fostering Growth and Equity in Math Education

Grades 3 – 5

Room 402/403

This interactive workshop provides hands-on experience with practical tools for implementing equity-driven feedback in the math classroom. Participants will engage in activities and simulations that foster student growth and inclusivity, leaving with actionable strategies to transform their teaching approach and enhance every student's mathematical learning journey.

[Session Slides](#)

Elly Blanco-Rowe, Breaking the Math Ceiling Consulting

21 One Teacher + 20 Students + Two Coaches = A Journey The Impact of Reflection on Equitable Teaching and Learning

Grades PK – 5

Room 406/407

The presentation will allow participants to consider the impact of both student reflection and teacher reflection by following two coaches as they support one teacher and a classroom in using both teacher and student reflection tools to impact more equitable teaching and learning. We will introduce, demonstrate, and try out teacher and student reflection tools in order to develop and cultivate a habit of systematic and deliberate reflection in order to create an equitable mathematics learning community.

Katrina Mills, Wellesley Public Schools
Danielle Silverman, Wellesley Public Schools
Bevin Hale, Wellesley Public Schools
Annie Sussman, TERC, Cambridge MA

22 Is it Really as "Easy" as Pi?

Grades 6-8

Room 408/409

Join us for hands-on manipulative-rich tasks focused on formulas related to circles and spheres. Participants will work collaboratively to develop understanding of circumference and the area of a circle and avoid the question, "Is it $2\pi r$ or πr^2 ?" We will then squish clay to derive the volume formula of a sphere.

Sue Hamilton, Carnegie Learning, Inc

23 Transitional Math: A Success Case of Transferring Math Vocabulary to ESL Students

Grades 9 - 12

Room 410

Learning math vocabulary is a critical component of academic success for English language learners (ELLs). Without a strong understanding of math vocabulary, ELLs may struggle to understand math concepts and solve problems effectively. However, with targeted support and effective strategies, ELLs can develop the language skills necessary to succeed in math and other academic subjects. By providing explicit vocabulary instruction, using visual aids, and integrating math vocabulary instruction with other language skills, educators can help ELLs build their math vocabulary and comprehension. Investing in ELLs' math vocabulary learning is not only crucial for their academic success, but it can also have a positive impact on their overall language development and confidence in their abilities. As educators, we have a responsibility to support ELLs in their learning and provide them with the resources and strategies they need to achieve their goals. Let us remember that every ELL student has unique needs and learning styles, and it is our duty to adapt our teaching methods to meet those needs. By doing so, we can create a learning environment where ELLs feel valued, supported, and empowered to achieve their full potential in math and beyond. Come learn more about the details of building your practice with the needs of the ELL in mind.

[Session Slides](#)

Romeu Rodrigues, Hudson Public Schools

24 Zombie Chickens: Using Computer Simulations to Explore Exponential Systems

Grades 9 - 12

Room 519

Computer simulations provide a fun, interactive way to explore the dynamics of exponential growth or decay. This workshop shares examples from Model Mysteries, a student-centered text that uses Stella Online (free system dynamics software) to model engaging topics ranging from zombie chicken infestations to rumors spreading in schools. Lesson plans and student work exemplars included. Participants are encouraged to bring a laptop and build their own Zombie Chicken outbreak model!

[Session Slides](#) and [shared doc](#)

Rachel Molenaar, Innovation Academy Charter School



Are you interested in helping ATMIM plan future events? Please see any of the board members at the conference to learn more about the openings we have on the Board!

Lunch Keynote

Amy Lucenta and Grace Kelemanik

Ballroom 12:30-1:30 PM

[Session Slides](#)

Pause and Interpret: The Key to Making Sense of Math Problems and Concepts

Do your students get overwhelmed by wordy problems, complicated expressions, or unfamiliar representations? Do they grab numbers and start calculating without thinking? Or, do they get overwhelmed and shut down? We will share concrete strategies you can use to help students slow down and make sense of messy math problems and grow as confident, independent math problem-solvers.



Grace Kelemanik and Amy Lucenta, co-founders of Fostering Math Practices, have extensive K-12 mathematics experience with a focus on developing mathematical thinking in all students, particularly in historically marginalized students. As former classroom teachers, coaches, and pre-service educators, they support teachers, districts, and educational collaborative organizations to transition their curriculum and pedagogy to reflect current mathematics education research through professional development and coaching.



Grace and Amy are co-authors of *Routines for Reasoning: Fostering Mathematical Practices in All Students*.

- Follow them both on Twitter @GraceKelemanik @AmyLucenta

Margaret J. Kenney Award Speaker

25 Be the Guide, Not the Hero: Supporting Colleagues Struggling with Change in Math Education

All Grade Levels

Suite B/C

Change initiatives in mathematics are challenging, especially when the shifts we want educators to make go against their deeply held beliefs about teaching and learning. In this session, you will learn about an effective framework that is designed to disrupt educators' belief systems and empower them to become the driving force behind your change efforts. You will also explore effective strategies to best support educators who are resistant to change.

Mike Flynn, Self-Employed

26 Shifting Math Instruction to Foster Mathematical Thinking and Reasoning

All Grade Levels

Room 320

Creating a classroom environment that fosters mathematical thinking and reasoning requires three critical shifts in our instruction; Focus on Thinking, Step out of the Middle, and Support Productive Struggle. Come learn about these shifts and some essential strategies that will support creating a student centered classroom that focuses on thinking and reasoning.

Justin Alix, Fitchburg Public Schools

Rebecca Colo, Fitchburg Public Schools

27 Rethinking Rounding: From Rhymes to Reasoning with Conceptual Place Value

Grades 3 – 5

Room 401

Rounding is rooted in understanding our base-10 number system, and is an important skill when checking reasonableness in multi-digit operations as well as in real life. In this session we do exactly that - looking at foundations of conceptual place value that draw attention to patterns in Base-10 to support students while learning to round.

Naomi Dupre-Edelman, Mount Holyoke College

28

Using Literature for making Math Alive!

Grades 3 – 5

Room 402/403

Books are great source for making math alive. We will look at several books and find ways to use the content to explore different math topic such as discrete math, computational ideas, and lots more. Bring a book that you love and we will explore together.

[Session Slides](#)

Susan Weiss, Schechter Boston

29 Counting Collections in Your PreK-2 Classroom

Grades PK – 2

Room 406/407

Our students need to count every single day, but finding the time to make that happen in the busyness of a primary classroom can be a challenge. Counting Collections is an engaging routine to get every student counting daily! This session, geared for Grades PreK-2, will explore the what, why, and how of Counting Collections. Whether you have been using Counting Collections for years or are brand new to it, you will leave with new thinking and ideas.

[Session Slides](#)

Samantha Sklar, Lesley University

30 Exploring Enchanting Mathematics through Rich Tasks

Grades 6-8

Room 408/409

Mathematics is full of beauty and inspires the mind and imagination. As teachers, we must kindle this sense of wonder and excitement in our students. Participants will experience a rich task aimed at engaging us as adult learners. We will examine what a "rich task" is and isn't and discuss the pedagogy behind using rich tasks. We will share several resources for teachers of all levels to access rich tasks for use in their classrooms.

[Session Slides](#)

Kit Golan, Lesley University's Center for Mathematics Achievement

31 Thinking Radically: Developing Mathematical Thinkers**Grades 9 - 12****Room 410**

Experience a lesson adapted from a Texas Instruments activity, that engages ALL students in discussing, writing, persevering, and thinking individually and collaboratively. A packet of materials that provide exciting and engaging opportunities for your students will be shared. The TI-84 Plus CE graphing calculator will be used as a tool for exploration but this can easily be adapted for any graphing technology.

[Session Slides](#)**Nancy Johnson**, Mathematics Learning Center**Jennifer Stevens**, Nauset Public Schools**32 Demystifying Elementary Math for Secondary Teachers****Grades 6 - 12****Room 519**

Baffled by changes that have taken place in elementary school math? We'll discuss some common misconceptions that persist, and how you can draw on methods and strategies from elementary math to help activate prior knowledge in students.

[Session Slides](#)**Shelby Strong**, Lesley University**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.