



NATIONAL COUNCIL OF  
TEACHERS OF MATHEMATICS

PREMIER MATH EDUCATION EVENTS

# 2015 NCTM REGIONAL CONFERENCE & EXPOSITION

Atlantic City • October 21–23

# Program Book

See valuable  
**COUPONS**  
beginning on  
page 93

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#NCTMregionals

1 mile  $\approx$  0.86898 nautical miles



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## 2015 NCTM REGIONAL CONFERENCE & EXPOSITION

Atlantic City • October 21–23

### HOST

Association of Mathematics Teachers of New Jersey (AMTNJ)

### MEETING FACILITY

All Regional Conference presentations will be held at the Atlantic City Convention Center. See pages 76-79 for floor plans.

### REGISTRATION

|           |           |   |           |
|-----------|-----------|---|-----------|
| Wednesday | 5:00 p.m. | – | 7:30 p.m. |
| Thursday  | 7:00 a.m. | – | 3:00 p.m. |
| Friday    | 7:00 a.m. | – | 3:00 p.m. |

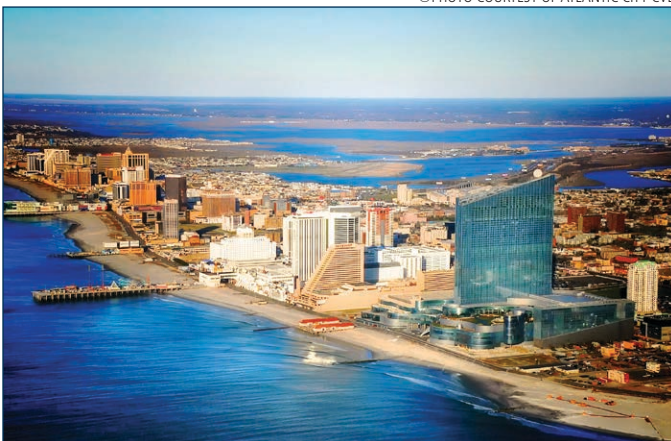
### EXHIBITS

|          |           |   |           |
|----------|-----------|---|-----------|
| Thursday | 8:00 a.m. | – | 5:00 p.m. |
| Friday   | 8:00 a.m. | – | 4:00 p.m. |

### NCTM CENTRAL

|           |           |   |           |
|-----------|-----------|---|-----------|
| Wednesday | 5:00 p.m. | – | 7:30 p.m. |
| Thursday  | 7:00 a.m. | – | 5:00 p.m. |
| Friday    | 8:00 a.m. | – | 4:00 p.m. |

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National Council of Teachers of Mathematics, 1906 Association Drive, Reston, VA 20191-1502; Telephone (703) 620-9840; Fax (703) 476-2970; E-mail [nctm@nctm.org](mailto:nctm@nctm.org); Web [www.nctm.org](http://www.nctm.org)

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# Welcome to Atlantic City!



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Welcome to the NCTM 2015 Atlantic City Regional Conference & Exposition! Born and raised in this region, I can confidently promise you there is plenty to see and do while visiting here. As you might spy on a car passing by, make sure you make time to DO AC! With a short jitney ride or stroll, you can go shopping at The Walk, visit the historic Gardner's Basin, hit the beach, dine at a top-rated restaurant, and enjoy the sounds and sparkle of the casinos at night. Knowing how we all appreciate and enjoy the world of mathematics, I thought I would also share a few fun mathematical tidbits about the region. Did you know—

- The well-known Fralinger's Taffy Company produces 11,000 pounds of taffy a day?
- Lucy the Elephant, a famous landmark in nearby Margate, is 6 feet high, offers a 360-degree view of the area, and is eight years older than the Eiffel Tower that was built in 1889?
- The Steel Pier along the boardwalk once featured a diving horse that would plunge 40 feet into a pool 12 feet deep?
- The third tallest lighthouse in the U.S., Absecon Lighthouse, can be found in the city, standing an impressive 171 feet tall with 228 steps to climb?
- You can see sea life native to the waters off of New Jersey in Atlantic City Aquarium's 25,000 gallon tank? (Say "hi" to Groman the sea turtle for me if you go!)

Along with a great city, you will have plenty to do at the conference itself. There are six focus areas we call "strands" to hit the must-know topics for today's mathematics classroom. We have also planned a series of highlighted speakers for our Ignite-style kickoff on Wednesday night and during conference days! Every hour we will feature well-known speakers across grade levels and topic areas. **Our jobs as educators can be tough some days, so our goal for the program is to help you reflect, rejuvenate, and nurture your love of learning and teaching mathematics.**

Behind every successful conference is a strong support system, and I offer my sincerest thanks to the many people who helped to make this year's regional happen. This begins with an outstanding NCTM staff, which has helped me and my program committee in every step from planning to monitoring the event. Many volunteers have donated their time to create and design your experience, from my amazing Program Committee and motivating NCTM mentor Cindy Bryant to my right-hand man and Volunteer Committee Chair, Neil Cooperman. In my own work on this conference, I have had the full support of Eric Milou, a longtime mentor, and of my university, Stockton University, including President Harvey Kesselman and Dean of Education Claudine Keenan. To the many others I called upon for help, advice, and support, please know I am deeply thankful.

I hope each and every one of you has an outstanding experience here in A.C.! Your contributions in mathematics education are absolutely essential to the success of today's youth. Thank you for taking part in the NCTM 2015 Atlantic City Regional Conference & Exposition.

Sincerely,  
Norma



**Norma Boakes**  
Program Committee Chair  
Stockton University  
Galloway, New Jersey



**Neil D. Cooperman**  
Volunteer Committee Chair  
Millburn High School  
Millburn, New Jersey

The NCTM 2015 Regional Conference & Exposition officially begins with the Opening Session, starting at 5:30 p.m. on Wednesday. Presentations on Thursday and Friday begin at 8:00 a.m. each day and are scheduled concurrently throughout the day.

We have made every attempt to provide adequate seating for participants at the Regional Conference & Exposition. The room capacity for each presentation is listed on all meeting room signs. For your safety and due to fire regulations, only those with seats will be allowed to stay in meeting rooms.

Please remember:

- All meeting rooms will be cleared between presentations.
- All seats are available on a first-come, first-served basis.
- Reserving spaces in line or saving seats is not permitted.
- In compliance with fire codes, sitting on the floor or standing is not permitted.
- As a courtesy to the speakers and your colleagues, please silence your cell phone during all presentations.

## New and Preservice Teachers Workshop

Wondering how to manage your classroom, work with parents, find engaging lessons, and handle homework—all while keeping your sanity? You're not alone! A must for every new teacher, this interactive workshop is your chance to ask questions on topics of your choice. Plus, you will connect with other new and early-career teachers. If you are in the first five years of teaching or are seeking certification, come get resources, materials, and fun prizes to encourage you and give you insight along your journey.

**Thursday and Friday**  
9:45 a.m.–11:00 a.m.  
414 (Atlantic City Convention Center)

## Regional Conference Overview & Orientation

Whether you are new to NCTM or a seasoned veteran, there is something new for everyone! Hosted by members of the Board of Directors, this session will show you how to maximize your overall conference experience. Learn what's new or discover something you've missed in the past, find out how to navigate presentations and use the conference app, and network with other attendees. Meet other first-time attendees and join up with conference mentors who share your particular interests!

**Thursday and Friday**  
7:15 a.m.–7:45 a.m.  
411 (Atlantic City Convention Center)

## Association of Mathematics Teachers of New Jersey (AMTNJ) Reception

This reception is sponsored by McGraw-Hill and is open to all NCTM attendees. It will be held in the First Floor Atrium of the Convention Center Hall from 4:30 to 5:30 PM. Refreshments will be served.

**Thursday**  
4:30 p.m.–5:30 p.m.  
1st Floor Atrium (Atlantic City Convention Center)


## Types of Presentations

All presentations are open to all conference participants. Admission is on a first-come, first-served basis. Reserving spaces in line or saving seats is not permitted.

**Sessions** (60 minutes) are set theater style and represent a common format where the speaker relates his or her ideas to an audience.

**Workshops** (75 minutes) are set with round tables for hands-on work and activities using manipulatives.

**Bursts** (30 minutes) are set with round tables and have additional gallery seating around the perimeter of the room. These concise presentations focus on a specific topic or idea. The goal is information sharing, conveyed quickly and succinctly.

**Exhibitor Workshops** (60 minutes) are set theater style for at least 100 people. Exhibitors showcase their products and services away from the Exhibit Hall. Look for the symbol  indicating exhibitor workshops in the program book.

## Grade Bands

To assist attendees in finding appropriate presentations to attend, each presentation lists the presentation's target grade-band audience. The grade bands are:

- **Pre-K–2**
- **Grades 3–5**
- **Grades 6–8**
- **Grades 9–12**
- **Higher Education**—university- and college-level issues including both two-year and four-year institutions
- **Preservice and In-Service**—content and techniques for providers of preservice teacher education and professional development for practicing teachers, supervisors, specialists, coaches, and mathematics educators
- **General Interest**—issues of interest to multiple grades and audiences
- **Research**

# Program Information

## Focus Strands

### COMMON CORE/COLLEGE CAREER READINESS **CORE**

The Common Core State Standards for Mathematics (CCSSM) include the standards for content at each grade level and for mathematical practices. The Standards for Mathematical Practice guide and support the students' interaction with the content to ensure students learn the essential skills and underlying concepts needed to be successful at each grade level. Teachers need to integrate these two corresponding and connected sets of standards in their classrooms. This strand will focus on sessions that will guide educators in integrating these standards to build powerful mathematical thinkers.

#### Strand Sessions

| Session # | Session title   |
|-----------|---|
| 31        | Preparing High School Geometry Teachers to Teach the Common Core            |
| 36        | The Simpsons and Their Mathematical Secrets                                 |
| 42        | EXPLORE the CORE with Math on the Floor!                                    |
| 93        | Lively Ways to Implement Common Core Mathematical Practices and Content!    |
| 95        | The Procedural Fluency and Conceptual Understanding Connection              |
| 114       | Hollywood Math and Science  |
| 117       | Mastering CCSSM: Supporting Students through Math Work Stations             |
| 147       | Learn about the Standards for Mathematical Practice Using Student Dialogues |
| 154       | College and Career Readiness through Quality Tasks and Teaching             |
| 168       | Problem Strings: A Lesson Format for All Students                           |
| 246       | Magnifying Problem Solving in Early Learning Environments                   |
| 267       | Rich Tasks That Promote the Standards for Mathematical Practice             |
| 268       | The Role and Importance of the Standards for Mathematical Practice          |

### PRINCIPLES TO ACTIONS— EFFECTIVE TEACHING OF MATHEMATICS **PtA**

Everyday teachers make important instructional decisions. These decisions influence content, depth of student engagement, and student understanding. This strand features sessions that unpack one or more of the effective teaching and learning strategies featured in NCTM's Principles to Actions publication. These "actions" are research-informed and drawn from decades of work about excellent mathematics programs.

#### Strand Sessions

| Session # | Session title   |
|-----------|---|
| 17        | Build Understanding with Geofix Pieces and Engaging Tasks           |
| 24        | Raise the Bar: Deep Mathematical Thinking Is the Higher Goal        |
| 26        | Use Problem Solving to Understand Ratios and Proportional Reasoning |

- 30 Nurturing Computational Fluency and Mathematical Thinking
- 53 Deeper Understanding for Students = Mathematics Teaching Practices in Action!
- 59 Strategies and Tasks to Build Procedural Fluency from Conceptual Understanding
- 108 "Rich Tasks That Provide Active Engagement, Deep Understanding, and Integrated Technology"
- 110 The Power of Math Routines
- 112 "Classic Problems: Use Them to Teach Reasoning, Problem Solving, and Mathematics"
- 117 Mastering CCSSM: Supporting Students through Math Work Stations
- 126 15 Minutes a Day That Changed Everything
- 144 A Task is a Task—Or Is It?
- 182 Strategies Used to Promote Discourse in Math Classrooms
- 191 Incredible Math Tasks! Supporting Productive Struggle in Learning Mathematics
- 199 21st-Century Skills in the Mathematics Classroom
- 212 Technology Tools to Enhance Instruction of the CCSS
- 225 Something to Talk About: Productive Talk in the Mathematics Classroom
- 229 Implementing Rigor for Effective Teaching of Mathematics

### FORMATIVE ASSESSMENT **FORM**

Assessment has long been recognized as an integral part of the teaching and learning of mathematics (NCTM 1995). However, assessment has seen a resurgence of importance with the implementation of CCSSM. Formative assessment, in particular, is emphasized as a way to collect evidence of student learning that can be used to inform and adapt instruction. This strand will explore the multiple uses of formative assessment that support teachers and students in their mutual goal of achieving the intended instructional targets.

#### Strand Sessions

| Session # | Session title  |
|-----------|--|
| 41        | Classroom-Based Formative Assessment Techniques to Guide Teaching and Learning     |
| 43        | Feedback as Assessment: What Works?  |
| 55        | Improving Teaching and Learning through Effective Formative Assessment             |
| 60        | Tips for Managing Feedback   |
| 90        | Embedding Assessment into Instruction: Advancing Mathematics Learning and Teaching |
| 96        | Tools for Supporting Classroom-Based Formative Assessment Techniques               |
| 139       | The Future of the Smarter Balanced Assessment Consortium                           |
| 151       | Ready Set Action: Formative Assessment at Work!!                                   |
| 216       | Using Comics for Assessment  |
| 230       | Classroom Challenge: Formative Assessment Done Right!                              |
| 250       | Using Formative Assessment to Develop Student Understanding                        |
| 264       | Formative Assessment Models to Inform Instruction and Improve Student Achievement  |

## ENSURING MATHEMATICAL SUCCESS FOR ALL **MATH**

The sessions in this strand focus on both teaching practices and institutional practices that set high mathematics learning expectations for all students and assist all students in reaching those expectations by providing access to a robust set of supports and resources while minimizing intended and unintended impediments to success in mathematics. The goal of this strand is to arm teachers and leaders with the knowledge and techniques necessary for setting unwavering expectations and then developing fail-safe systems aimed at supporting students toward success, thus raising the achievement of all students while narrowing any existing achievement gaps among student groups. Presentations will extend to methods for meeting the needs of a wide range of specialized student populations

### Strand Sessions

| Session # | Session title   |
|-----------|---|
| 25        | Teaching the Distributive Property to Struggling Learners Using iPad Apps                 |
| 29        | Facilitating Access and Equity for English Language Learners in Mathematics Classrooms    |
| 35        | Twice-Exceptional Mathematics Students: Identifying Them and Meeting Their Needs          |
| 61        | “Engaging the Struggling Learner through Discourse, Equity, and Multiple Representations” |
| 120       | Number and Operations Success for All through Tier 1 Instruction                          |
| 131       | Strategies to Implement Mathematical Practices for ELLs and Struggling Students           |
| 140       | Using the Context of Social Justice to Teach Elementary Mathematics                       |
| 141       | What Do Students Say about Equity in Math Education?                                      |
| 143       | 4 Essential Elements of RTI for Mastery of Rational Numbers                               |
| 145       | Diagnostic Interviews: An Assessment for Targeting Interventions for Struggling Students. |
| 164       | From Margins to Center: Advancing the Mathematics Education of ELLs                       |
| 192       | Intervention and Assessment Strategies for Grades 2–5 Students Who Struggle               |
| 220       | Universal Design for Education in Mathematics   |
| 231       | $2(4^2 + 1) - 9$ Math Intervention Strategies   |
| 248       | RtI in Mathematics: What Really Is Effective?   |
| 262       | 7 Strategies for Supporting Algebraic Thinking with English Language Learners             |

## MAKING USE OF TECHNOLOGIES TO ENHANCE LEARNING **TECH**

This strand focuses on instructional technology as a tool to engage students actively in content acquisition through high-quality teaching strategies in the mathematics classroom. Technology comes in many forms, including computers and computer applications, handheld devices, Internet-based resources, and calculators. Workshops within this strand

seek to demonstrate integration of technology that provides context to mathematics, encourages higher-order thinking, develops independent practices, and strengthens self-reflection.

### Strand Sessions

| Session # | Session title   |
|-----------|---|
| 3         | 5 BIG Ideas That Will Transform Your Teaching and Thinking!             |
| 9         | Using iPhones and iPads to Build Fluency!                               |
| 18        | Engaging the Math Student through 21st-Century Skills                   |
| 66        | Computer Algebra Systems in Calculus: TI-Nspire CAS vs TI-89            |
| 67        | Effects of Flipped Classroom Model on Students’ Attitude in Mathematics |
| 73        | Personalized Professional Development through Social Media              |
| 77        | App-Smashing Addition: Encouraging Math Talk with iPad Apps             |
| 146       | Keeping It Real: Authentic Real-World Math Lessons                      |
| 188       | Cassady’s Problem: Fostering Mathematical Creativity with Technology    |
| 239       | Using Technology to Make Student Thinking Central                       |
| 251       | Teaching Number Sense to the iGeneration                                |

## DEVELOPING EDUCATIONAL ENVIRONMENTS THAT BUILD PRODUCTIVE STRUGGLE **EDU**

Even with the best lesson ideas, tasks, manipulatives, and tools, many students still struggle to make sense and persevere in their learning of mathematics. This strand tackles how educators can build social, emotional, and mathematical environments that support and build positive student self-beliefs and perseverance for mathematics learning. These sessions will offer classroom teachers and mathematics leaders a variety of strategies to promote student self-regulation, motivation, and positive mathematics self-beliefs for developing a mathematical growth mindset.

### Strand Sessions

| Session # | Session title  |
|-----------|--|
| 4         | Addressing Disposition and Intrinsic Motivation through Productive Struggle      |
| 7         | Peg + CAT: Mathematics for Early Learners—Problem Solved!                        |
| 47        | Please Challenge Me! Developing Rich Tasks to Support Productive Struggle        |
| 68        | Growth Mindset: Enhancing Mathematical Learning                                  |
| 94        | Mind over Mathematics: Conveying and Cultivating a Growth Mindset                |
| 167       | Neuroeducation Research and Strategies: Structuring Positive Emotional Climates  |
| 191       | Incredible Math Tasks! Supporting Productive Struggle in Learning Mathematics    |
| 221       | Fostering Growth Mindset through Productive Struggle in Conceptual Understanding |
| 225       | Something to Talk About: Productive Talk in the Mathematics Classroom            |
| 244       | Developing Mathematical Minds and Hearts   |

# General Information

## Tips for a Rewarding Regional Conference & Exposition

- Access the Conference App for conference alerts and up-to-the-minute information. Visit [www.nctm.org/confapp](http://www.nctm.org/confapp).
- Access available speaker handouts at [www.nctm.org/planAC](http://www.nctm.org/planAC).
- Become familiar with the layout of the Atlantic City Convention Center by reviewing the floor plans on pages 76–79.
- Visit NCTM Central: Stop by the **NCTM Bookstore** for the latest NCTM educational resources and **Member Services** to learn more about how NCTM can help you professionally and to pick up free resources.
- Stop by the Information Booth for information on the local area.
- If attending the conference with colleagues, attend different presentations and share your learned knowledge after the conference.
- Silence cell phones during presentations.
- Be safe! Remove your name badge when you leave the conference facilities at the end of the day.

## Registration and Access to Presentations

You must wear your badge to enter all presentations and the NCTM Exhibit Hall. Please be aware that the fee for a replacement badge is **\$10**.

*By registering and attending an NCTM conference, meeting, or other activity, participants grant NCTM the right to use their likeness or voice as recorded on, or transferred to, video, photographs, websites, electronic reproductions, audio files, and/or other media of such events and activities.*

## For Your Child's Safety

Due to the size and nature of the NCTM 2015 Regional Conference & Exposition, this event is not an appropriate setting for children under 16 years of age. Children under age 16 will not be permitted in the Exhibit Hall. We appreciate your understanding and cooperation.

## Information Booth

The NCTM Information Booth will be located in the Atlantic City Convention Center. Staff can answer your questions about the city, assist you with directions and transit, and provide information on historical sites, shopping, and entertainment.

## Lost and Found

You may retrieve or turn in lost-and-found items at the NCTM Information Booth. Unclaimed items will be turned over to the Atlantic City Convention Center Security.

## Presentation Handouts

Attendees can access available electronic presentation handouts through the conference app and online planner. Handouts will be available until **January 2016**.

## First-Aid Station

There will be a first-aid station at the Atlantic City Convention Center during the NCTM conference. If you need medical services while in Atlantic City, please check with the hotel concierge for the closest medical facilities. For any medical emergency, call 911 without hesitation.


## Your Opinion Counts

Thank you for attending the NCTM 2015 Regional Conference & Exposition in Atlantic City. In the days following the Regional Conference, you will receive an e-mail asking for an evaluation of your meeting experience. Please take a moment to complete the survey. Use the conference app to rate specific presentations you attend. Your feedback is important to us and will be instrumental in planning future meetings.

## Exhibits

Make time to visit the NCTM Exhibit Hall. The hours allow ample opportunity to explore, try out, and purchase products and services for your classroom or to help you meet your career goals. You'll also be able to meet the people who produce these products, get fresh ideas, and see demonstrations of how products work. To give you dedicated time to visit the exhibits, no presentations will take place from 4:00 p.m. to 5:00 p.m. on Thursday. Check out the list of exhibits and a map of the Exhibit Hall on pages 80–86.

## Exhibitor Workshops

Do you want more in-depth, personal interaction with exhibitors? If so, plan to attend the Exhibitor Workshops. These workshops are held on Thursday and Friday and offer a wide variety of topics. For exhibitor workshop offerings, look for presentations in this program book marked with the symbol  or see the Program Updates.

## Conference App

The NCTM conference app keeps you connected with every aspect of the Regional Conference. The free app allows you to search sessions, speakers, and exhibits; view the Exhibit Hall floor plan; highlight your favorite presentations; rate presentations; and interact with your colleagues. Visit [www.nctm.org/confapp](http://www.nctm.org/confapp) for more information.

## Online Conference Planner

The online conference planner is a great way for you to search the conference program book, set up your personal schedule, and download available presentation handouts. The Online Conference Planner is continually updated with the latest presentation changes and information. Visit [www.nctm.org/planAC](http://www.nctm.org/planAC) to check it out.

## Program Updates

Check online for a digital copy of the program updates including all of the latest changes, cancellations, and additions!



## NCTM Central

NCTM Central has everything “NCTM” all in one convenient location, right at the entrance of the Exhibit Hall.

Wednesday 5:00 p.m.–7:30 p.m.  
Thursday 7:00 a.m.–5:00 p.m.  
Friday 8:00 a.m.–4:00 p.m.

- Whether you are a new or seasoned NCTM member, you can learn more about what your membership can do for you at **Member Services**. We can walk you through your benefits, including your online access to lessons, classroom-ready activities, online journal articles, and more. Make sure to stop by and pick up sample journals and other materials. Not a member or wish to renew your membership? Make sure to sign up onsite and receive a free San Francisco Annual Meeting T-shirt (while supplies last).
- The **Networking Lounge** is a prime location to meet up with colleagues between presentations. Whether you want to make connections with fellow conference goers, exchange teaching tips, or catch up with friends, you’ll find a comfortable spot in the Networking Lounge to do so. Download the conference app to receive alerts for scheduled networking meet-ups and check out the program updates for more information!

- **Mathematics Education Trust (MET)** Learn about grants, scholarships and awards for mathematics teachers, educators and prospective teachers.
- Browse the **NCTM Bookstore** and **save 25% off the list price** on all purchases! View firsthand all the publications that NCTM has to offer. You will also find a variety of specialty products that you can use as gifts, prizes, and incentives to spread the word about the importance of mathematics. Start your wish list today by previewing NCTM’s wealth of resources at [www.nctm.org/catalog](http://www.nctm.org/catalog). The NCTM Bookstore is not equipped to handle shipping; the convention center business center can assist you with your shipping needs.

***Note on Sales Tax Exemptions:** To be considered exempt from sales tax in the NCTM Bookstore, you must provide a copy of a New Jersey tax exemption certificate at the time of purchase. NCTM is required by law to keep a copy of the certificate, so we cannot return it to you. To qualify, you must make payment with a purchase order, check, or credit card from the school to which the New Jersey exemption certificate is issued. NCTM cannot accept personal checks, personal credit cards, or cash in conjunction with tax exemption certificates. Tax exemption certificates for states other than New Jersey are not valid for this Regional Conference.*

## Stop by NCTM Member Services!

INSPIRING TEACHERS. ENGAGING STUDENTS. BUILDING THE FUTURE.

### Learn more about...

- **Mathematics tools and resources** to help make your job easier
- **Activities and lessons...** we’ll show you how to gain access to 1,000s
- **Getting the most out of your NCTM membership...** not a member, learn how to become one
- **Receiving a free San Francisco T-shirt if you join or renew** your membership on site.

Located in NCTM Central in the exhibit hall.



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TEACHERS OF MATHEMATICS  
(800) 235-7566 | [WWW.NCTM.ORG](http://WWW.NCTM.ORG)



# Get Them Here First: New Books Just Released

**SAVE 25%!** Conference attendees receive a **25% discount** off the NCTM list price on all purchases made in the Bookstore, including special Products!\*

MATH IS ALL AROUND US

MATH IS ALL AROUND US

MATH IS ALL AROUND US

MATH IS ALL AROUND US

MATH IS ALL AROUND US

## It's Elementary: A Parent's Guide to K-5 Mathematics

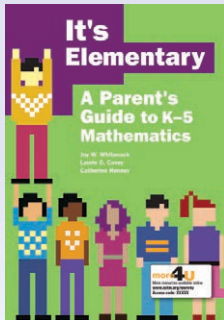
BY JOY W. WHITENACK, LAURIE O. CAVEY, AND CATHERINE HENNEY

A VITAL NEW RESOURCE:

*Help Parents Effectively Participate in Their Children's Math Education*

Parents are sometimes baffled by the way elementary mathematics is taught in today's classrooms. This book reintroduces them to the subject, discussing not only the *how* of today's teaching methods but also the *why*. It provides insights into children's mathematical thinking and its development through the early grades, as well as information on helping with homework, engaging children in math at home, and participating in children's math education.

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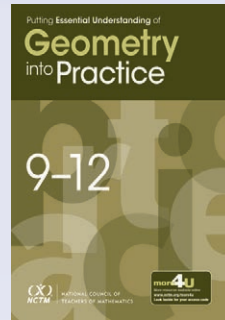


## Putting Essential Understanding of Geometry into Practice in Grades 9-12

TERRY CRITES, VOLUME EDITOR  
BY ROBERT N. RONAU, DAN MEYER, AND TERRY CRITES

Do your students think that shapes can be translated only horizontally or vertically? Do they suppose that a triangle can be constructed from any three line segments of given length? What tasks can you offer—what questions can you ask—to determine what your students know or don't know—and move them forward in their thinking? This book focuses on misconceptions that students often bring to the exploration of diagrams and definitions, transformations, and proof in the high school geometry classroom. A variety of tasks and strategies guide teachers in addressing and dispelling common misunderstandings while developing robust understanding of the central ideas of geometry.

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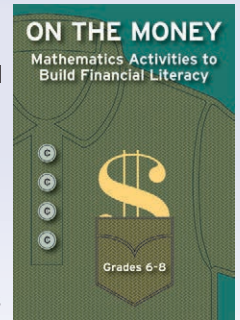


## On the Money: Math Activities to Build Financial Literacy, Grades 6-8

BY JENNIFER M. BAY-WILLIAMS, SARAH B. BUSH, SUSAN A. PETERS, AND MAGGIE B. MCGATHA

More than half of today's teens wish they knew more about how to manage their money. Students who develop financial literacy are equipped to make better financial decisions—about budgeting, saving, buying on credit, investing, and a host of other topics. Math is essential to money management and sound financial decision making, and activities in this book draw on and extend core concepts related to ratios and proportions, expressions and equations, functions, and statistics, while reinforcing critical mathematical practices and habits of mind. The authors show how the activities align with the Common Core State Standards and the Jump\$tart Financial Literacy Standards.

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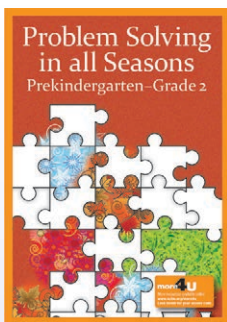


## Problem Solving in All Seasons, Pre-K-Grade 2

BY KIM MARKWORTH, JENNI MCCOOL, AND JENNIFER KOSIAK

This book delivers thirty-two appealing, real-world mathematical tasks, arranged in grade-level order, to engage young learners in problems tied to the Common Core and designed to allow children to participate in the Common Core Standards for Mathematical Practice. Each task includes a complete implementation guide, and handouts and ancillary materials can be accessed online. This is your all-in-one practical handbook for problem solving in the primary years.

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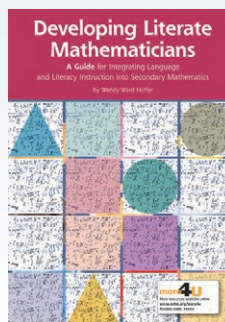


## Developing Literate Mathematicians: A Guide for Integrating Language and Literacy Instruction into Secondary Mathematics

BY WENDY WARD HOFFER

How can we integrate literacy instruction authentically into mathematics content to support mathematical understanding? Busy secondary mathematics teachers who seek to respond to the needs of their students and the demands of the Common Core State Standards will welcome this book, which offers lively classroom examples, usable research, and specific ideas and resources. Enrich your students' understanding of mathematics by attending to reading, vocabulary, discourse, and writing through a workshop model.

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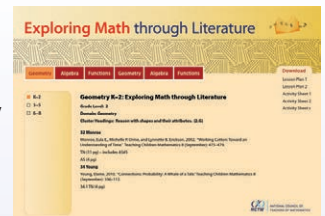


## Exploring Math Through Literature, Pre-K-8 (online product)

EDITED BY DIANE THIESSEN

Draw on the appeal of literature to bring mathematics to life in your classroom. This online resource offers teachers of K-8 students an array of lesson plans and activity sheets that relate mathematical concepts to literature highlighted in articles from NCTM's award-winning journals *Teaching Children Mathematics* and *Mathematics Teaching in the Middle School*.

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Friday 8:00 a.m. – 4:00 p.m.



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WEDNESDAY

## HIGHLIGHTS

Opening Session: Inspire, Innovate, Ignite, 1



### Conference App

Network onsite with attendees!  
[www.nctm.org/confapp](http://www.nctm.org/confapp)



### Facebook

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### Instagram

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### Registration Hours

5:00 p.m.–7:30 p.m.

### NCTM Central Hours

5:00 p.m.–7:30 p.m.

### Fire Codes

We have made every attempt to provide adequate seating for participants at the conference, but for your safety and because of fire regulations, only those with seats will be allowed in meeting rooms. To comply with fire codes, we will have to ask persons sitting on the floor or standing to leave the room.

## 1

**Inspire, Innovate, Ignite**

## General Interest Session

Be inspired by leading minds of mathematics education in eight minutes or less! We use an Ignite-style approach where each speaker has a pretimed, planned presentation of exactly eight minutes. This fun and fast-paced event offers a sneak peek into all the great sessions the conference includes. Each speaker was selected for their expertise and is guaranteed to offer you inspiration and innovation in their eight-minute feature presentations.

402/403 (ATLANTIC CITY CONVENTION CENTER)

**Jennifer M. Bay-Williams**

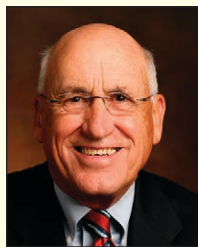
Board of Directors, National Council of Teachers of Mathematics; University of Louisville, Kentucky

**Jennifer Bay-Williams** is co-author of numerous books about effective mathematics teaching and learning, including *Elementary and Middle School Mathematics: Teaching Developmentally*, *Teaching Student Centered Mathematics (K-2, 3-5, 6-8)*, *Essential Understandings of Addition and Subtraction (K-2)*, *Mathematics Coaching: Resources and Tools for Coaches and Other Leaders*. She has authored many articles in *Teaching Children Mathematics* and *Mathematics Teaching in the Middle School*. Dr. Bay-Williams is a professor at the University of Louisville, and works in Kentucky and many other places with practicing and preservice teachers to implement effective mathematics teaching practices.

**Diane J. Briars**

President, National Council of Teachers of Mathematics, Reston, Virginia

**Diane J. Briars** is president of the National Council of Teachers of Mathematics (NCTM), a 70,000-member international mathematics education organization. Previously, Briars was a mathematics education consultant; a senior developer/research associate on the NSF-funded Intensified Algebra Project; and Mathematics Director for Pittsburgh Public Schools. She is a past president of the National Council of Supervisors of Mathematics (NCSM) and has served in leadership roles in various other national organizations. Briars holds a Ph.D. in Mathematics Education, M.S. and B.S. in Mathematics from Northwestern University and did post-doctoral study in the Psychology Department of Carnegie-Mellon University. She began her career as a secondary mathematics teacher.

**Francis (Skip) Fennell**

Past President, National Council of Teachers of Mathematics; McDaniel College, Westminster, Maryland

**Francis “Skip” Fennell, PhD**, is now emeritus as the L. Stanley Bowsbey professor of education and Graduate and Professional Studies at McDaniel College in Maryland, where he continues to direct the Brookhill Institute of Mathematics supported Elementary Mathematics Specialists and Teacher Leaders Project (<http://www.mathspecialists.org>). A mathematics educator who has experience as a classroom teacher, principal, and supervisor of instruction, he is a past president of the Association of Mathematics Teacher Educators (AMTE), the Research Council for Mathematics Learning (RCML), and the National Council of Teachers of Mathematics (NCTM). Skip served as a writer for the Principles and Standards for School Mathematics (NCTM, 2000), the Curriculum Focal Points (NCTM, 2006) and for the Common Core State Standards for Mathematics (CCSSO, 2010). He also served on the National Mathematics Advisory Panel (2006-2008). He currently serves as a member of the Board of Directors for Council for the Accreditation of Educator Preparation (CAEP) and serves as the mathematics advisor for the Emmy award winning PBS television shows *Peg + CAT* and *Odd Squad*. Included among honors and awards he has received are: the Glenn Gilbert National Leadership Award from the National Council of Supervisors of Mathematics (NCSM), the Association of Mathematics Teacher Educators’ (AMTE) Distinguished Outstanding Teacher Educator, and, the 2012 Lifetime Achievement Award from the National Council of Teachers of Mathematics (NCTM). He is the father of three and grandfather of nine. While horrifyingly slow (he used to be fast) he still enjoys running!

**David Ginsburg**

Ginsburg Educational Consulting and Coaching, Philadelphia, Pennsylvania

**David Ginsburg** leads a Philadelphia-based team of accomplished educators that helps improve school culture and student outcomes. He specializes in instructional coaching, leadership coaching, Common Core implementation, and new teacher training. He is a former business executive who has served over 20 years in K-12 urban schools as a math teacher, instructional coach, school leader, and consultant. He has taught education courses, and has presented nationally on a variety of topics related to academics and school culture. David holds M.B.A. and M.Ed. degrees, and is the author of the popular Education Week blog, *Coach G’s Teaching Tips*.



**Donna S. Leak**

Community Consolidated Schools District 168, Sauk Village, Illinois

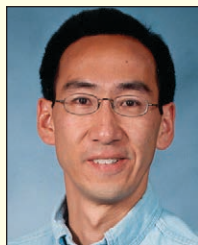
**Donna Simpson Leak** is the Superintendent of Community Consolidated Schools District 168 in Sauk Village, IL. Previously, she served as the Superintendent of Rich Township High School District 227, in Matteson, IL. Dr. Leak began her career as a Sixth Grade Math Teacher and went on to teach High School Mathematics, serve as Department Chair, International Math Consultant, Associate Principal, and Assistant Superintendent before becoming Superintendent. Dr. Leak worked with the Department of Defense and American Community Schools in Western Europe, Asia, and South America. She has provided professional learning for thousands of teachers not only abroad, but in large domestic areas such as New York, Detroit, Los Angeles, Atlanta, and Memphis. She has spoken at more than 200 conferences world wide and represented the United States at the International Congress on Math Education in Seville, Spain. She has served as a Board Member of the National Council of Supervisors of Mathematics for 11 years in a variety of roles. In addition, she has been an active member of the National Council of Teachers of Mathematics for over 25 years, including serving on the National Program Committee for the Annual Conference in Anaheim.



**Max Ray-Riek**

The Math Forum, National Council of Teachers of Mathematics, Reston, Virginia

**Max Ray-Riek** is a Professional Collaboration Facilitator at the Math Forum, and the author of the book *Powerful Problem Solving*. The Math Forum (<http://mathforum.org>) is a leading online resource for improving math learning, teaching, and communication, with a focus on problem solving and mathematical practices. Max is a former secondary mathematics teacher who has presented at regional and national conferences on fostering problem solving and communication and valuing student thinking, including presenting an Ignite talk proving that “ $2 > 4$ ”: <http://www.youtube.com/watch?v=daCtIac24yU>. At the Math Forum, his responsibilities include running the Trig/Calc Problem of the Week, reading all of the student submissions for the Pre-Algebra and Algebra Problems of the Week, running the Online Mentoring Program that trains pre-service teachers to be “math pen-pals” for elementary and middle-school students, teaching online professional development courses, and coaching teachers in an area high school.



**Greg Tang**

GregTangMath.com, Belmont, Massachusetts

**Greg Tang** is the *NY Times* best-selling author of a series of math picture books from Scholastic that includes *The Grapes of Math*. He is the inventor of the popular math app Kakooma® and creator of GregTangMath.com. Greg is a frequent speaker at math, reading and technology conferences and since 2001 has done more than 2,200 workshops and school visits, teaching more than 300,000 children and adults. Greg earned B.A. and M.A. degrees in Economics from Harvard and an M.A. degree in Math Education from New York University.



**Jon Wray**

Howard County Public Schools, Ellicott City, Maryland

**Jon Wray** is a Mathematics Instructional Facilitator for the Howard County Public School System and recently served a three-year term as member of the National Council of Teachers of Mathematics (NCTM) Board of Directors. Jon is the president of the Association of Maryland Mathematics Teacher Educators and a past president of the Maryland Council of Teachers of Mathematics. He serves as the manager of the Elementary Mathematics Specialists & Teacher Leaders Project. Wray is a co-author of several books and articles related to mathematics leadership, teaching and learning, and the use of formative assessment techniques. Most recently, he and colleagues, Skip Fennell and Beth Kobett, co-authored a chapter in NCTM’s *2015 Annual Perspectives on Mathematics Education* titled, “Classroom-Based Formative Assessments: Guiding Teaching and Learning.” Jon’s interests include instructional leadership, teacher collaboration, professional learning focused on effective and engaging teaching and learning strategies, strategic uses of technology, and issues related to access and equity in mathematics education.

# FORMAL STUDY PROVES CURRICULUM EFFECTIVENESS

BOOTH #318



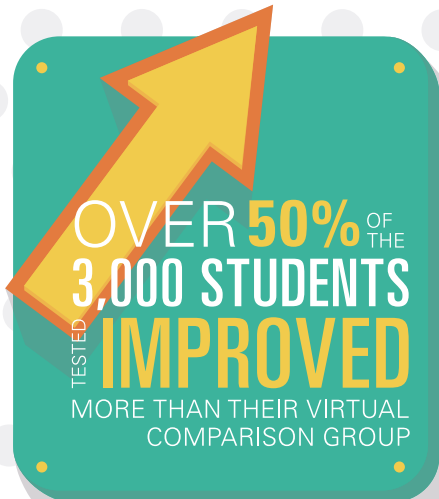
JOHNS HOPKINS UNIVERSITY

published the results of a research study analyzing the effectiveness of *ORIGO Stepping Stones*, a K–5 mathematics curriculum, at Worthington City School District in Worthington, Ohio. The findings reveal demonstrated gains from students using *Stepping Stones* over the comparison group.

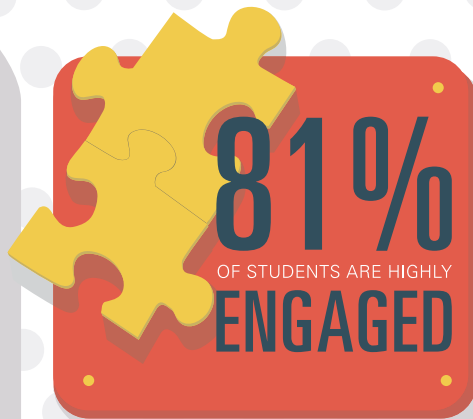
*"We are seeing noticeable gains in achievement with Stepping Stones. Students and teachers are responding positively to the new program and that is reflected in the results of this study."*

*-Gina Piero, instructional coach at Worthington School District*

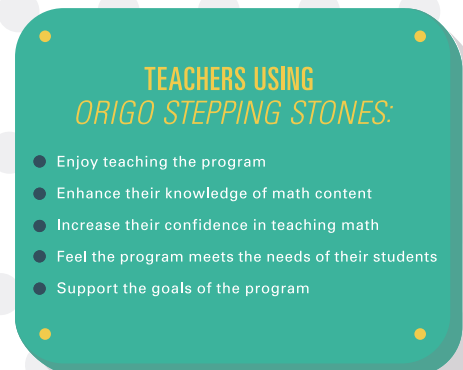
*Stepping Stones* helps students gain a deeper understanding of mathematics. By adopting a conceptual approach the authors teach students how to think critically.



OVER 50% OF THE  
TESTED 3,000 STUDENTS  
IMPROVED  
MORE THAN THEIR VIRTUAL  
COMPARISON GROUP

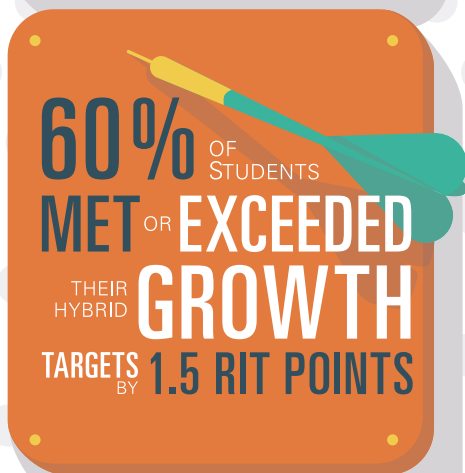


81%  
OF STUDENTS ARE HIGHLY  
ENGAGED

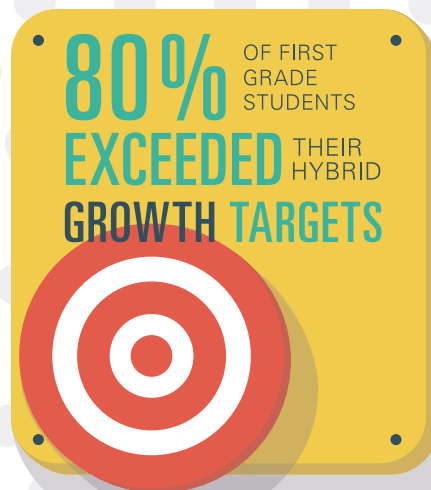


TEACHERS USING  
*ORIGO STEPPING STONES*:

- Enjoy teaching the program
- Enhance their knowledge of math content
- Increase their confidence in teaching math
- Feel the program meets the needs of their students
- Support the goals of the program



60% OF STUDENTS  
MET OR EXCEEDED  
THEIR HYBRID  
TARGETS BY 1.5 RIT POINTS



80% OF FIRST  
GRADE STUDENTS  
EXCEEDED THEIR  
HYBRID  
GROWTH TARGETS



Read the full reports at:  
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## ANNOUNCING...

ORIGO's new grant program offering \$100,000 to schools in need. Stop by booth #318 to pick up an application today.

To learn more about the grant program visit:

[http://bit.ly/ORIGO\\_Grant](http://bit.ly/ORIGO_Grant)



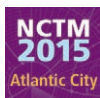
ORIGO  
EDUCATION

## HIGHLIGHTS

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| <b>EDU</b>  | Developing Educational Environments to Build Productive Struggle | 4, 7, 47, 68, 94   |
| <b>EW</b>   | Exhibitor Workshop   | 13, 14, 15, 37, 38, 39, 40, 62, 63, 64, 65, 98, 99, 100, 122, 123, 123.1 |
| <b>FORM</b> | Formative Assessment   | 41, 43, 55, 60, 90, 96, 139  |
| <b>MATH</b> | Ensuring Mathematical Success for All                            | 25, 29, 35, 61, 120, 131, 140, 141                                       |
| <b>PtA</b>  | Principles to Actions – Effective Teaching of Mathematics        | 17, 24, 26, 30, 53, 59, 108, 110, 112, 117, 126                          |
| <b>TECH</b> | Making use of Technologies to Enhance Learning                   | 3, 9, 18, 66, 67, 73, 77, 80, 81, 86, 89, 92, 121                        |

THURSDAY



### Conference App

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### Registration Hours

7:00 a.m.–3:00 p.m.

### Exhibit Hours

8:00 a.m.–5:00 p.m.

### NCTM Central Hours

8:00 a.m.–5:00 p.m.

### Fire Codes

We have made every attempt to provide adequate seating for participants at the conference, but for your safety and because of fire regulations, only those with seats will be allowed in meeting rooms. To comply with fire codes, we will have to ask persons sitting on the floor or standing to leave the room.

7:15 A.M.–7:45 A.M.

## 2 Regional Conference Overview & Orientation

General Interest Session

Hosted by members of the Board of Directors, this session will show you how to maximize your overall conference experience. Learn what's new or discover something you've missed in the past, how to navigate presentations, use the Conference App, and network with other attendees.

**Cathy Martin**

Board of Directors, National Council of Teachers of Mathematics; Denver Public Schools, Colorado

411 (ATLANTIC CITY CONVENTION CENTER)

8:00 A.M.–9:00 A.M.

## 3 **TECH** 5 BIG Ideas That Will Transform Your Teaching and Thinking!

General Interest Session

Join *Grapes of Math* author and Kakooma inventor Greg Tang as he explores and explains five key progressions—from visual to visualizing, partials to place value, whole numbers to fractions, understanding to fluency, and arithmetic to algebra. These ideas have the power to completely transform your classroom. Math—and you—will never be the same!

**Greg Tang**

GregTangMath.com, Cambridge, Massachusetts

402 (ATLANTIC CITY CONVENTION CENTER)

## 4 **EDU** Addressing Disposition and Intrinsic Motivation through Productive Struggle

6–8 Session

In this session we explore using activities that engage students in productive struggle to assess disposition and motivation as students construct “new” knowledge by encouraging transfer of related knowledge to new situations.

**William R. Speer**

University of Nevada, Las Vegas

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## 5 Differentiation Techniques for Solving One- and Two-Step Word Problems

Pre-K–2 Session

Learn how to introduce addition and subtraction word problems by using Nearpod, graphic organizers, and desktop screen recordings. The Nearpod website enables teachers to present information and create interactive activities for instant student feedback with Internet-accessible devices, and it supports the development of technology skills for PARCC.

**John Hammett**

Saint Peter's University, Jersey City, New Jersey

**Kristin Bertolero**

Union City Board of Education/Touro College, Graduate School of Education, Union City/New York, New York

405/406 (ATLANTIC CITY CONVENTION CENTER)

## 6 Insights from the MAA National Study of College Calculus

9–12 Session

This is a summary of recently published findings of calculus 1: student background and preparation, experience in college calculus, and success rates. It explains how this experience differs from that encountered in high school calculus and why so many mathematically successful high school students encounter difficulties when they enter college.

**David Bressoud**

Macalester College, Saint Paul, Minnesota

**Chris Rasmussen**

San Diego State University, San Diego, California

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Hear what's new from Exhibitors—attend an **Exhibitor Workshop**. Look for the **ew** symbol throughout the program book.



**7** **EDU****Peg + CAT: Mathematics for Early Learners—Problem Solved!**

Pre-K–2 Session

Peg + Cat is an Emmy-awarded math show for young learners, but it's much more! Know about it? Come find out—hear the story, sing the songs, play the games. Talk to the show's creators and others who make the show, its web site, games, and app a major hit with teachers, parents, and children! And be prepared for an Odd Squad opportunity!

**David Lowenstein**

PBS, Arlington, Virginia

**Jennifer Rodriguez**

PBS, Arlington, Virginia

**Francis (Skip) Fennell**Past President, National Council of Teachers of Mathematics;  
McDaniel College, Westminster, Maryland

403 (ATLANTIC CITY CONVENTION CENTER)

**8****Raising Mathematics Performance Levels of Underachieving Incoming College Freshman**

Higher Education Session

Many freshman are admitted to college performing below required levels in mathematics. They require remediation to allow them entrance into college courses. Through the effective use of CCSS and the integration of technology and best practices, gains have been achieved in raising performance. This session will address necessary qualities for success.

**Joan J. Vas**

Kean University, Union, New Jersey

**Mary J. Mitchell**

Kean University, Union, New Jersey

314 (ATLANTIC CITY CONVENTION CENTER)

**9** **TECH****Using iPhones and iPads to Build Fluency!**

3–5 Session

Students love technology! We need to find a way to tap into that interest. This presentation will guide you through the ways that you can use iPads to build your students' mathematical abilities. The session provides motivating strategies that you can use as part of effective mathematics instruction.

**Jessica A. Talada**

Elmira City School District/Elmira College, New York

303 (ATLANTIC CITY CONVENTION CENTER)

**10****Reasoning about Fractions: Using Number Lines to Understand Fraction Comparison**

3–5 Session

Participants will explore the big ideas of fraction comparison and quantitative reasoning as well as related CCSS recommendations and students' common misconceptions about these topics. Using the number line model and strategies to help build quantitative reasoning, this session will focus on helping students reason about and compare fractions.

**Nadine Bezuk**

San Diego State University, California

420 (ATLANTIC CITY CONVENTION CENTER)

**11****The "Core" of Fractions: Strategies to Build Fraction Number Sense**

3–5 Session

Students with a strong fraction number sense have the advantage when it comes to tackling higher level concepts including ratios and proportions. We will explore ways to build fraction number sense through lessons focused on strategies for equivalents, comparing, and ordering, all while meeting common core requirements.

**Kristin DeLorenzo**

Flemington Raritan School District, New Jersey

**Elizabeth D. Gardner**

Flemington Raritan School District, New Jersey

410 (ATLANTIC CITY CONVENTION CENTER)

8:00 A.M.—9:00 A.M.

12

## Algebra by Paper Folding

6–8 Session

In this presentation, participants will encounter active mathematical experiences through paper folding—building an understanding and appreciation for various mathematical concepts that are abstract for many students. The use of the paper activities may make the step to understanding various algebraic concepts more intuitive for students.

**Cynthia E. Taylor**

Millersville University of Pennsylvania

415 (ATLANTIC CITY CONVENTION CENTER)

13 **ew**

## Getting Started with TenMarks Math

General Interest Exhibitor Workshop

This session is an introduction to TenMarks Math and how to integrate the free version of the program into your classroom. In this session, attendees will get up close and personal with our content. You will learn about how TenMarks assignments can easily integrate with, complement, and enhance your existing instructional practices.

**TenMarks/Amazon**

TenMarks, an Amazon Company, Cambridge, Massachusetts

315 (ATLANTIC CITY CONVENTION CENTER)

14 **ew**

## The NEW Investigations 3 Is HERE for Grades K-5!

General Interest Exhibitor Workshop

Experience how the NEW Investigations 3 embeds the highly effective Mathematics Teaching Practices in every lesson to develop mathematical understanding in all students.

**Pearson**

Pearson, Boston, Massachusetts

318 (ATLANTIC CITY CONVENTION CENTER)

15 **ew**

## Unleash the Power of Game-Based Learning with Mangahigh

General Interest Exhibitor Workshop

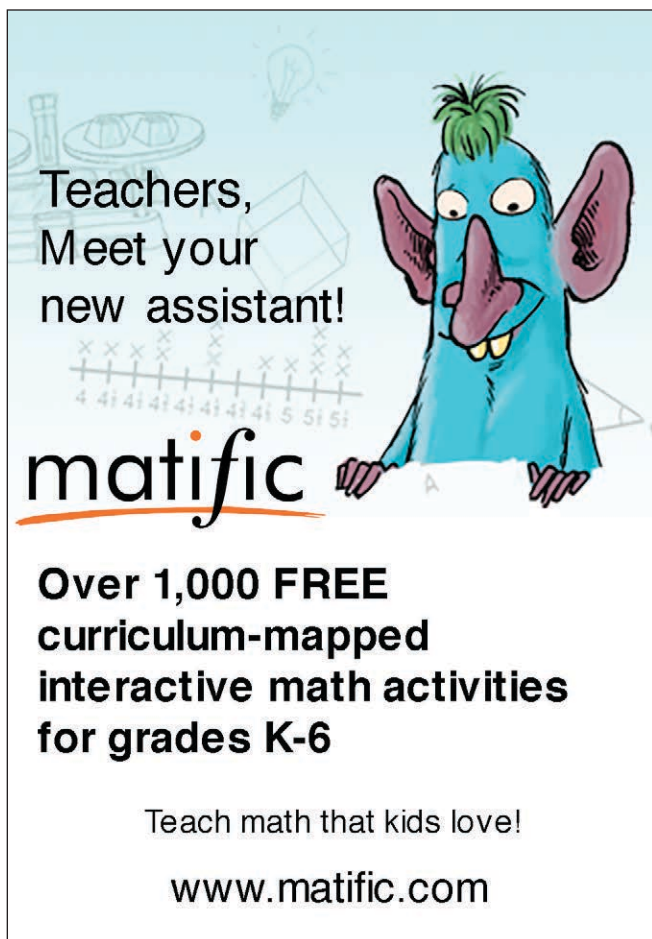
Discover how Mangahigh helps you build a true 21st-century classroom, with interactive games and clever adaptive quizzes aligned to curriculum for K–10. In this session, you'll learn ways to differentiate your instruction and create an environment where each student is motivated to work at the best of their ability.

**Mangahigh**

Mangahigh, London

305/306 (ATLANTIC CITY CONVENTION CENTER)

THURSDAY



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**16**

### **Engaging Children with Number Sense, Geometry, and Real-Life Problem Solving**

Pre-K–2 Workshop

The speaker will offer strategies, including the use of manipulatives, to develop number sense, geometry, and problem-solving skills. She will actively engage attendees with hands-on activities and real-life problems. She will model the use of effective mathematical discourse to develop concepts, critical thinking, and mathematics vocabulary. Handouts provided.

**Donna L. Knoell**

Educational Consultant, Shawnee Mission, Kansas

308/309 (ATLANTIC CITY CONVENTION CENTER)

**17**

**PtA**

### **Build Understanding with Geofix Pieces and Engaging Tasks**

6–8 Workshop

Geofix pieces are snap-together polygons that can be used to explore characteristics and properties of polygons and polyhedra. A collection of engaging tasks related to grades 6–10 geometry standards will be presented, focusing on angle measure, symmetry, similarity, transformations, surface area, and more.

**Laurie Boswell**

The Riverside School, Lyndonville, Vermont

411 (ATLANTIC CITY CONVENTION CENTER)

**18**

**TECH**

### **Engaging the Math Student through 21st-Century Skills**

6–8 Workshop

The session is an interactive presentation using 21st-century skills of communication, collaboration, critical thinking, and technology. High-yield engagement strategies can bring excitement to the math class. Participants will engage in mathematics through the use of QR codes, avatars, foldables, and interactive student response websites.

**Ernestine Saville-Brock**

Montgomery County Public Schools, Christiansburg, Virginia

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**19**

### **GAME ON! Captivating Games for the High School Math Class**

9–12 Workshop

Experience the power of games in the classroom. This workshop will take participants through several games that help students understand topics such as domain and range, slope, factoring quadratics, linear graphs and inequalities, and parabolic graphs. Participants will have the opportunity to play the games and discuss their use in their classrooms.

**Nora J. Oswald**

Jim Thorpe School District, Pennsylvania

414 (ATLANTIC CITY CONVENTION CENTER)

**20**

### **Geometry in a Box**

6–8 Workshop

Transform greeting cards into boxes while delivering a better understanding of the relationships among perimeter, area, and volume. Give your students a thorough understanding of geometry terms and the nuances of definitions involved with polygons, especially quadrilaterals. Ratio and proportion are discussed as they relate to sizing the boxes.

**Nicholas J. Restivo**

Retired, Mineola Union Free School District, New York

417 (ATLANTIC CITY CONVENTION CENTER)

**21**

### **Let's Explore the Number Core: Sequence Early Childhood Math Instruction**

Pre-K–2 Workshop

Learn how number instruction in the first years of school prepares students to be successful in the highest levels of math. Effectively sequencing how you teach numbers 1 to 10 and then 10 to 20 MATTERS! Find out how our youngest students count, interpret, and understand numbers using developmentally appropriate strategies and models.

**Kate Austin**

Curriculum Associate, Common Core, Inc.; Owner, Green Hat Education, Washington, District Of Columbia

419 (ATLANTIC CITY CONVENTION CENTER)

THURSDAY

Shop and save **25%**  
at the **NCTM Bookstore**  
in **NCTM Central!**

8:00 A.M.–9:15 A.M.

**22**

## Moving Forward with Metric! Measurement within the Common Core

3–5 Workshop

5K races, 2-liter soft drinks, milligrams of medicine. Metric is here! Learn methods to teach and “see” the metric system. Discover hands-on classroom activities aligned with Common Core standards, and have fun. Hand-outs and materials provided.

**Donna L Monck**

Rock Christian Academy, Easton, Pennsylvania

401 (ATLANTIC CITY CONVENTION CENTER)

**23**

## Promoting Deep Understanding: Problem-Based Learning and Technology

9–12 Workshop

Problem-based learning engages students with real-life problems that foster curiosity and initiate learning. Learn how to integrate TI-NSpire technology into a PBL lesson and enhance critical thinking and problem-solving skills. Problem-based algebra and geometry tasks will be explored.

**Nancy A. Johnson**

Hopedale Junior-Senior High School, Massachusetts

418 (ATLANTIC CITY CONVENTION CENTER)

**24**

**PtA**

## Raise the Bar: Deep Mathematical Thinking Is the Higher Goal

3–5 Workshop

Children today live in a world with technological tools that compute more quickly and efficiently than we can. This begs the question: “What is our purpose in teaching operations?” Algebraic thinking is the answer. But what does that look like in elementary classrooms? Through powerful explorations for pre-K–5 mathematics, you will soon know. Join us!

**Monica Neagoy**

Monica Neagoy Consulting Services, Arlington, Virginia

421 (ATLANTIC CITY CONVENTION CENTER)

**25**

**MATH**

## Teaching the Distributive Property to Struggling Learners Using iPad Apps

3–5 Workshop

The Common Core standards emphasize using the distributive property to teach multiplication, but this is tricky content for kids with special needs. See how grade 3–5 students with special needs use free iPad apps to demonstrate their understanding of multiplication properties. Learn to teach five different mini-lessons to help draw out students’ thinking. BYO iPad.

**Kara K. Carpenter**

Teachley, New York, New York

408/409 (ATLANTIC CITY CONVENTION CENTER)

**26**

**PtA**

## Use Problem Solving to Understand Ratios and Proportional Reasoning

6–8 Workshop

We want ALL students to develop mathematical proficiency in proportional reasoning. In order for this to occur, we as teachers need to address the language needs of students, particularly ELLs, and address our own understanding of proportional reasoning in order to design effective teaching practices. Be prepared to do some mathematics!

**Susie W. Hakansson**

TODOS: Mathematics for ALL, Venice, California

404 (ATLANTIC CITY CONVENTION CENTER)

9:30 A.M.–10:30 A.M.

**27**

## Building a Strong Math Foundation by Using Conceptual Teaching Strategies

Pre-K–2 Session

You will be introduced to several teaching strategies that use number frames and counting chips to give a conceptual understanding of fundamental concepts of mathematics. Do you know that a few conceptual strategies will eliminate over half the addition/subtraction facts students need to memorize? Attend and be amazed by these simple strategies.

**Joseph C. Mason**

Hagerstown Community College, Maryland

410 (ATLANTIC CITY CONVENTION CENTER)

**28**

**Connect the Dots (Data Points)**

6–8 Session

Make use of technology as an aid to making sense out of data. Topics include making graphs (dot plots, box plots, scatterplots) and making connections. A variety of examples will be presented, including functions modeling linear relationships interpreting rate of change and initial value in terms of the situation it models.

Linda Treilman mathtreils@verizon.net Mercer County Community College, West Windsor, New Jersey

402 (ATLANTIC CITY CONVENTION CENTER)

**29 MATH**

**Facilitating Access and Equity for English Language Learners in Mathematics Classrooms**

3–5 Session

Teachers play a critical role in setting high expectations and facilitating educational equity. This session will use videos of elementary math classrooms filmed by students wearing video cameras to illustrate strategies that help teachers establish equitable learning environments, enhance curriculum and instruction, and position ELLs for success.

Kathryn B. Chval  
University of Missouri, Columbia

412 (ATLANTIC CITY CONVENTION CENTER)

**30 PtA**

**Nurturing Computational Fluency and Mathematical Thinking**

Pre-K–2 Session

Explore the Common Core computational fluency standards with a variety of models and materials (frames, racks, arrays, and number lines). Nurture the mathematical practices and help your students develop efficient, accurate, and flexible thinking strategies that promote conceptual understanding and procedural fluency.

Beth Newman  
Math Learning Center, Salem, Oregon

303 (ATLANTIC CITY CONVENTION CENTER)

**31 CORE**

**Preparing High School Geometry Teachers to Teach the Common Core**

Preservice and In-Service Session

The Common Core State Standards for high school geometry include topics unfamiliar to many preservice and in-service teachers, including transformations as a basis for the study of congruence and similarity and the locus definition of the conic sections. We will discuss implications for teacher preparation programs and professional development.

Timothy V. Craine  
Central Connecticut State University, New Britain

Edward DePeau  
Central Connecticut State University, New Britain

Louise Gould  
Central Connecticut State University, New Britain

314 (ATLANTIC CITY CONVENTION CENTER)

**32**

**Sense Making? Aren't We Already Doing That In Literacy?**

3–5 Session

The very first Common Core mathematical practice, “Make sense of problems,” includes many ideas that have long been foci of literacy instruction. Yet when “math” starts, both teachers and students often leave those good habits behind. We’ll look at examples of this and explore how to translate literacy routines into good mathematical practices.

Annie Fetter  
The Math Forum, National Council of Teachers of Mathematics, Reston, Virginia

302 (ATLANTIC CITY CONVENTION CENTER)

**33**

**Students' Conversations about Mathematics in Urban Classrooms**

9–12 Session

Classroom discussions aid students in achieving conceptual understanding. We used the LiveScribe® Pen in an urban mathematics classroom to document students' conversations while solving problems in a small-group setting. We will share problems used to engage students in discussions about mathematics, and the associated student discussions.

Gorjana Popovic  
Illinois Institute of Technology, Chicago

Susie Morrissey  
Illinois Institute of Technology, Chicago

Lamont Holifield  
Urban Prep Charter Academy for Young Men, Chicago, Illinois

405/406 (ATLANTIC CITY CONVENTION CENTER)



**34****Take a Flip Trip!**

6–8 Session

Try out the Museum of Math's 2014 Rosenthal Prize winning lesson! We'll stand shoulder-to-shoulder, and let coin flips lead us forwards or backwards. What might happen? For certain, you'll learn about randomness, compound events, combinations, and data distributions. Join us on our trip! Greater sample size = a stunning display of probability!

**Ralph Pantozzi**

Kent Place School, Summit, New Jersey

420 (ATLANTIC CITY CONVENTION CENTER)

**35** **MATH****Twice-Exceptional Mathematics Students: Identifying Them and Meeting Their Needs**

9–12 Session

Mathematicians are seven times more likely to be on the autism spectrum. Many gifted students with high functioning autism (HFA) are unidentified. Teaching strategies can allow these gifted students to excel. The characteristics of these twice-exceptional students, how to identify them, and how to improve their success will be presented.

**Christine L. Hebert**

Old Dominion University, Norfolk, Virginia

415 (ATLANTIC CITY CONVENTION CENTER)

**36** **CORE****The Simpsons and Their Mathematical Secrets**

General Interest Session

Simon Singh, best-selling author of *Fermat's Enigma*, will discuss his latest book *The Simpsons and Their Mathematical Secrets*. He will explain how a team of mathematically gifted writers have covered everything from calculus to geometry, from pi to infinity in various episodes of *The Simpsons* (and *Futurama*).

**Simon L Singh**

Science Writer, Richmond, United Kingdom

403 (ATLANTIC CITY CONVENTION CENTER)

**37** **ew****10 Minutes of Code**

General Interest Exhibitor Workshop

Want to get your students interested in coding? This hands-on session will introduce you to the basics of coding on the TI-84™ Plus in just 10 minutes—no experience needed! Learn how coding in the math classroom can strengthen students' reasoning and problem-solving skills. Get free resources that you can start using in class right away.

**Texas Instruments**

Texas Instruments, Dallas, Texas

320 (ATLANTIC CITY CONVENTION CENTER)

**38** **ew****A Look at enVisionmath2.0—Now for K–8!**

General Interest Exhibitor Workshop

Pearson's rigorous new curriculum supports the habits of mathematical thinkers and learners through carefully differentiated instructional tools and personalized practice. Find out how optimal content organization, problem-based learning, visual learning, and smart assessments work together to support learning—and teaching.

**Pearson**

Pearson, Boston, Massachusetts

318 (ATLANTIC CITY CONVENTION CENTER)

**39** **ew****Crazy 8s: It's Not Your Ordinary Math Club!**

3–5 Exhibitor Workshop

Crazy 8s is a high-energy after-school club for kids in K–grade 5, with hands-on activities like Spy Training and Toilet Paper Olympics. Our free club kit includes full directions and most materials to run eight one-hour sessions. Join us to get hands-on experience with Crazy 8s activities. It's time to make math the cool thing to do after school!

**Bedtime Math Foundation**

Bedtime Math Foundation, Summit, New Jersey

315 (ATLANTIC CITY CONVENTION CENTER)

9:30 A.M.–10:30 A.M.

**40** **ew**

### **Developing Fractions Sense: The Power of Fraction Blocks**

3–5 Exhibitor Workshop

In this presentation, intended for teachers of grades 3–6, we will share how fraction blocks (pattern blocks) can enable you to demystify all the operations related to fractions by having your students model those operations concretely. Learn the visual meaning of a common denominator and a way to divide without inverting and multiplying!

**Borenson and Associates**

Borenson and Associates, Inc., Allentown, Pennsylvania

305/306 (ATLANTIC CITY CONVENTION CENTER)

9:45 A.M.–11:00 A.M.

**41** **FORM**

### **Classroom-Based Formative Assessment Techniques to Guide Teaching and Learning**

3–5 Workshop

Formative assessment should be an everyday occurrence and critical component of planning and instruction. This session will present classroom-based formative assessment (CBFA) techniques that teachers can use on a regular basis. They make sense and provide a pathway to more summative assessment challenges.

**Francis (Skip) Fennell**

Past President, National Council of Teachers of Mathematics; McDaniel College, Westminster, Maryland

**Beth Kobett**

Stevenson University, Baltimore, Maryland

**Jon Wray**

Howard County Public Schools, Ellicott City, Maryland

408/409 (ATLANTIC CITY CONVENTION CENTER)

**42** **CORE**

### **EXPLORE the CORE with Math on the Floor!**

Pre-K–2 Workshop

In this highly interactive session, teachers will see the value of kinaesthetically exploring math strands. Standards in the Common Core are physically demonstrated on a large 100-square floor grid. The emphasis of the workshop will be in developing a solid sense of number, with the remaining time given to geometry, and measurement concepts.

**Wendy E. Hill**

Retired Elementary Teacher, Mississauga, Canada

418 (ATLANTIC CITY CONVENTION CENTER)

**43** **FORM**

### **Feedback as Assessment: What Works?**

9–12 Workshop

While most people agree that formative assessment is instrumental to deeper learning, the debate happens when we discuss what that formative assessment should look like. Feedback is key. But, what does effective feedback look like? How does a teacher with 150+ students provide feedback to all? Participants will see possible solutions.

**Karen Wootton**

CPM Educational Program, Sacramento, California

401 (ATLANTIC CITY CONVENTION CENTER)

**44**

### **Fraction Frenzy: Making Sense of Fraction Computations**

3–5 Workshop

This session provides hands-on activities to help students make sense of fraction computations: adding, subtracting, multiplying, and dividing. Activities will connect computational procedures to conceptual understanding and applications. Particular emphasis will be placed on developing mathematical practices, especially reasoning and modeling.

**Janet H. Caldwell**

Rowan University, Glassboro, New Jersey

308/309 (ATLANTIC CITY CONVENTION CENTER)

Pick up your copy of the **Program Updates** for additional presentations, cancellations, and other important information.

**45****Knowing Children, Teaching Number**

Pre-K–2 Workshop

This gallery workshop centers around young children and how they build number sense and develop strategies for computational fluency. We begin by exploring ways to make sense of quantity, reflect on transitioning from concrete objects to abstract representations, and we conclude with investigating mental models and strategies for number and operations.

**Nancy Wong**

Growing Up Green Charter School, Long Island City, New York

**Kathryn A. Pabarue**

The School at Columbia University, New York, New York

**Jennifer M. Dare**

The School at Columbia University, New York, New York

417 (ATLANTIC CITY CONVENTION CENTER)

**46****New and Preservice Teachers Workshop**

Preservice and In-Service Workshop

Find answers to your questions on topics such as classroom management, parents, motivation, and keeping your sanity. Connect with other new teachers, learn from experienced professionals, and find resources to engage you and your students. You might even win a prize!

**David Barnes**

National Council of Teachers of Mathematics, Reston, Virginia

414 (ATLANTIC CITY CONVENTION CENTER)

**47****EDU****Please Challenge Me! Developing Rich Tasks to Support Productive Struggle**

6–8 Workshop

Learn how to develop rich tasks for your students to support student engagement and productive struggle while motivating them to problem solve, make conjectures, and develop conceptual understanding. We will share three strategies for task development in your classroom and explore techniques for implementation, monitoring, and assessment.

**Zac Stavish**

Howard County Public Schools, Ellicott City, Maryland

**Alexandra Weyforth**

Howard County Public Schools, Columbia, Maryland

313 (ATLANTIC CITY CONVENTION CENTER)

**48****Prius versus Corolla: Which Car Is the Better Value?**

6–8 Workshop

Given window stickers for each car, students (grades 7–11) generate math problems that they would like to solve based on the data. Eventually they ask “Which car is the better value considering cost and fuel efficiency?” Finance math, units conversion, and generating linear equations are some of the tools used in the solution to the student-generated questions.

**Tom Reardon**

Youngstown State University, Ohio

421 (ATLANTIC CITY CONVENTION CENTER)

**49****Shuffleboard, Race Cars, and Reaction Times: Find the Algebraic Connection**

9–12 Workshop

Participants will create a playing field and write the equation that represents the possible points scored in the game. They will conduct time trials, predict who would win if there was a car race, and have a race to see if the predicted winner wins. They will measure reaction time, calculate measures of central tendency, and create a histogram.

**Claudia D. Maness**

CORD Communications, Waco, Texas

419 (ATLANTIC CITY CONVENTION CENTER)

**50****Using Student Art to Explore Ratios, Probability, Slope, and More**

6–8 Workshop

Using pencils, straightedges, and graph paper, participants will create designs and patterns. These will help explore student-friendly ways to engage in and understand numeracy topics, such as ratios, fractional values, and percent. This art-based approach can be adapted to allow students to also explore slope and geometric topics.

**Frank J. Schorn**

New York City Department of Education, Brooklyn, New York,

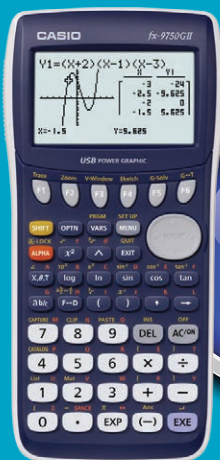
411 (ATLANTIC CITY CONVENTION CENTER)



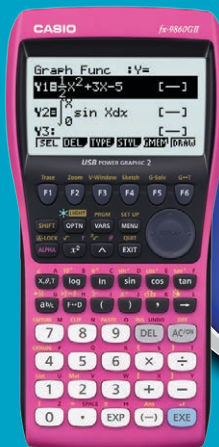
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**OR**

One (1) CASIO EcoLite XJ-V1 Projector



9:45 A.M.–11:00 A.M.

**51**

## What Is Number Sense and How Should We Teach It?

Pre-K–2 Workshop

Do you have students counting on their fingers to add? What those students lack is number sense. Number sense can't be taught, it has to be experienced. So, come experience activities involving a MathRack, number path, and subitizing that will help develop your students' number sense and their ability to add and subtract flexibly and fluently.

**Lynn Rule**

Math Consultant, Wheaton, Illinois

**Christina Tondevold**

Mathematically Minded, LLC, Orofino, Idaho

404 (ATLANTIC CITY CONVENTION CENTER)

11:00 A.M.–12:00 P.M.

**52**

## Change the Math Culture of Your School through Calculus Camp

9–12 Session

Learn what a Calculus Camp can do for your school. The speaker began one at his school and the calculus enrollment rose from under 20 students to more than 200. The culture of the school changed from students not wanting to take math as a senior to almost everyone wanting to take Calculus! What precipitated the change . . . Calculus Camp!

**Robert J. Vriesman**

Santa Clara High School, Oxnard, California

410 (ATLANTIC CITY CONVENTION CENTER)

**53** **PtA**

## Deeper Understanding for Students = Mathematics Teaching Practices in Action!

3–5 Session

Wonder how to really get your students talking about mathematics? This session will give practical activities connected to the Mathematics Teaching Practices in *Principles to Actions* designed to engage your students so that they take ownership of the discourse in your class. Problem solving, reasoning, representation, and questioning will be at the top of the list!

**Donna S. Leak**

Community Consolidated Schools District 168, Sauk Village, Illinois

303 (ATLANTIC CITY CONVENTION CENTER)

**54**

## Effects of Context on Student Strategies for Solving Proportion Problems

Research Session

This study looked at the strategies and success rates of students in grades 6–8 while solving proportion problems in different contexts.

**Jami Garner**

University of Tennessee, Knoxville

**JoAnn Cady**

University of Tennessee, Knoxville

**Keilah Kane**

University of Tennessee, Knoxville

314 (ATLANTIC CITY CONVENTION CENTER)

**55** **FORM**

## Improving Teaching and Learning through Effective Formative Assessment

General Interest Session

When implemented effectively, formative assessment practices can improve student learning and help students acquire important 21st-century skills. But what does effective formative assessment in the classroom entail? Find answers to this and illustrate how teachers and their students can engage in formative assessment day-by-day in the classroom.

**Margaret Heritage**

WestEd, San Francisco, California

302 (ATLANTIC CITY CONVENTION CENTER)

**56**

## Making Measurement Meaningful: Using Children's Literature and Classroom Investigations

Pre-K–2 Session

Research shows students are performing below proficiency on measurement concepts. By incorporating children's literature, utilizing manipulatives, and exploring classroom surroundings, engaging instruction can help students develop a deeper understanding of measurement. Join this interactive session to learn how to create measurement wizards!

**Kristin E. Harbour**

University of Louisville, Kentucky

402 (ATLANTIC CITY CONVENTION CENTER)

THURSDAY

**57****Not Your Grandma's Math Standards—the 8 SMPs**

6–8 Session

Participants will explore the eight Standards for Mathematical Practice (SMPs) of the Common Core State Standards. They will work with the SMPs to explore real-world problems and virtual manipulatives, and they will walk away with ideas and activities ready to be used upon return to the classroom.

**Terri A. Steigelman-Johnson**

McGraw-Hill Education, Columbus, Ohio

412 (ATLANTIC CITY CONVENTION CENTER)

**58****Power of Two: Improving Student Outcomes in Mathematics through Co-Teaching**

6–8 Session

Maximizing both teachers in co-taught mathematics classrooms yields higher student achievement. Teachers will dig deeper into how the co-teaching models can engage all students in math instruction. Instructional strategies on differentiating instruction, facilitating student discourse, and motivating struggling students will be shared.

**Savanna S. Flakes**

Alexandria City Public Schools, Virginia

415 (ATLANTIC CITY CONVENTION CENTER)

**59****PtA****President's Session: Strategies and Tasks to Build Procedural Fluency from Conceptual Understanding**

General Interest Session

Procedural fluency—skill in carrying out arithmetic and algebraic procedures flexibly, accurately, efficiently, and appropriately—is an important component of mathematical proficiency. Yet, many students fail to develop such fluency despite our best efforts. Connecting procedures to underlying concepts is essential for building fluency. This session answers the questions: “What tasks and strategies help students build fluency from conceptual understanding?” and “What common pitfalls should I avoid?”

**Diane J. Briars**

President, National Council of Teachers of Mathematics, Reston, Virginia

403 (ATLANTIC CITY CONVENTION CENTER)

**60** **FORM****Tips for Managing Feedback**

6–8 Session

You have successfully encouraged MP.3 (“Reason abstractly and quantitatively”) and your students are constructing viable arguments of their thinking. Now you are faced with providing feedback to help them reflect, revise, and improve. What are effective ways to manage this task? Suggestions will be offered and discussed. Samples of how to meet this feedback challenge will be provided.

**Suzanne Alejandre**

The Math Forum, National Council of Teachers of Mathematics, Reston, Virginia

**Erin Igo**

Colonial School District, New Castle, Delaware

**Lynn Palmer**

Montgomery County Public Schools, Rockville, Maryland

405/406 (ATLANTIC CITY CONVENTION CENTER)

**61** **MATH****Engaging the Struggling Learner through Discourse, Equity, and Multiple Representations**

3–5 Session

The very nature of academic conversation—structured discourse—keeps the students thinking and learning. Structured math discourse is a strategy for fair and equal access to learning for all types of learners. Talk moves, equity strategies, and monitoring tools are emphasized in this presentation.

**Candace E. Strickland**

Montgomery County Public Schools, Rockville, Maryland

420 (ATLANTIC CITY CONVENTION CENTER)

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exhibit info. Download it at  
**[www.nctm.org/confapp](http://www.nctm.org/confapp)**

11:00 A.M.–12:00 P.M.

**62** **ew**

### **BYOD: Mathspace—Why You'll Never Grade Math Assignments Again. Seriously.**

6–8 Exhibitor Workshop

Meet Mathspace. You've seen it all, right? Adaptive learning? Yep. Handwriting recognition? Hmm. Every math question graded line-by-line? Whoa, that's new! Students can finally show their work, and get feedback at every step: all auto-graded for you. Bye-bye, multiple choice! BYOD (Bring Your Own Device) to try the award-winning Mathspace live, and ask about a free trial!

**Mathspace**

Mathspace, New York, New York

320 (ATLANTIC CITY CONVENTION CENTER)

**63** **ew**

### **CCSS Math Practices? Trust CPM's 25 Years of Writing Experience**

6–8 Exhibitor Workshop

Experience the mathematical practices embedded in lessons that include problem-solving and discourse. The Core Connections series embeds the practices daily in a problem-based, student-centered CCSS-aligned curriculum for grades 6–Algebra 2 (option for high school Integrated I-III.) Receive free access to CPM's entire Core Connections series.

**CPM Educational Program**

CPM Educational Program, Elk Grove, California

305/306 (ATLANTIC CITY CONVENTION CENTER)

**64** **ew**

### **Instructional Excellence in Mathematics for Grades 3–8**

General Interest Exhibitor Workshop

The Standards for Mathematical Practice are the focus for this workshop from Triumph Learning. Performance tasks, math vocabulary activities, critical thinking through questioning, and interactive journaling will be presented. All examples are connected to excellence in math instruction. Handouts and sample books for each participant!

**Triumph Learning**

Triumph Learning, New York City, New York

315 (ATLANTIC CITY CONVENTION CENTER)

**65** **ew**

### **Integrating Daily Intervention into the Classroom**

General Interest Exhibitor Workshop

Get a hands-on look at HMH's K–12 Math with the Personal Math Trainer powered by Knewton; a homework, assessment, and intervention engine providing real-time data and individual study plans for all students. Participants will also see the HMH Player app designed for teachers and students to customize instruction and learning within the classroom.

**Houghton Mifflin Harcourt**

Houghton Mifflin Harcourt, Boston, Massachusetts

318 (ATLANTIC CITY CONVENTION CENTER)

11:30 A.M.–12:00 P.M.

**66** **TECH**

### **Computer Algebra Systems in Calculus: TI-Nspire CAS vs TI-89**

Research Burst

The presentation will focus on results of a research project comparing the use of the TI-Nspire CAS to the use of the TI-89 in sections of Calculus I and Advanced Calculus I. Research findings include statistical comparisons on mid-semester quizzes and a final exam, along with conjectures on reasons for differences between groups.

**Marlena F. Herman**

Rowan University, Glassboro, New Jersey

**Paul J. Laumakis**

Rowan University, Glassboro, New Jersey

418 (ATLANTIC CITY CONVENTION CENTER)

**67** **TECH**

### **Effects of Flipped Classroom Model on Students' Attitude in Mathematics**

Research Burst

This study determined the extent to which high school students' attitudes toward mathematics changed during the course of their mathematics class, when delivered via the flipped classroom model. It examined how the implementation of a flipped classroom affects the students' self-confidence, motivation, enjoyment, and the value of mathematics learned.

**Peter J. Esperanza**

Barstow Unified School District, California

421 (ATLANTIC CITY CONVENTION CENTER)

THURSDAY

68

EDU

## Growth Mindset: Enhancing Mathematical Learning

### General Interest Burst

Professional learning experiences for teachers were designed using multiple resources. The learning experiences consisted of professional readings, videos, activities with students, and collaboration and reflection of student activities. Qualitative data was collected to reflect on the mindset of our students towards mathematical learning.

**Mary Ann Jensen**

Upper Moreland High School, Willow Grove, Pennsylvania

**Dena Criss**

Upper Moreland Middle School, Willow Grove, Pennsylvania

408/409 (ATLANTIC CITY CONVENTION CENTER)

69

## It's Not a Rectangle, It's Too Skinny! Understanding Shape Characteristics

### Pre-K–2 Burst

How can we help young children identify characteristics of shape? Three undergraduate students had this same question during a math education course. Come find out how they investigated this problem in tandem with a local elementary school. We will share our research methods, classroom activities, and research findings.

**Joshua Brian Wynne**

University of Maine at Farmington

**Christopher Michael Roberts**

University of Maine at Farmington

**Tyler Thomas Belanger**

University of Maine at Farmington

401 (ATLANTIC CITY CONVENTION CENTER)

70

## Let's Round 'Em Up!

### 3–5 Burst

During this burst session, I will demonstrate a few mini-lessons you can use building on student's understanding of place value, to round a multidigit number up or down to any place. I will show you how to use the C-P-A approach (concrete-pictorial-abstract) to help children understand the concept of rounding numbers, versus memorizing a rule.

**Kally Bougadis**

New York City Department of Education, Little Neck, New York

411 (ATLANTIC CITY CONVENTION CENTER)

71

## Masters Program in STEM: Emphasis on Content and Field Placement

### Preservice and In-Service Burst

Directors of the Woodrow Wilson Teaching Fellowship program at the College of New Jersey (TCNJ) will discuss the revision of a masters program leading to certification in STEM areas. Teaching Fellows spend a year in the field learning to develop teaching skills while completing coursework and teach for three years in a high-needs district in New Jersey, with TCNJ providing mentoring.

**James Beyers**

The College of New Jersey, Ewing

**Cathy Liebars**

The College of New Jersey, Ewing

417 (ATLANTIC CITY CONVENTION CENTER)

72

## MET Grants and Scholarships: What They Are, How to Apply

### General Interest Burst

Don't miss out! The Mathematics Education Trust (MET) supports teachers with funds for materials, lesson development, conferences, courses, professional development and in-service, and action research. Learn what's available and how to apply. You'll also hear tips for choosing the most appropriate award for you and enhancing your chances to win it.

**Carol A. Edwards**

Member, MET Board of Trustees, Chandler, Arizona

313 (ATLANTIC CITY CONVENTION CENTER)

73

TECH

## Personalized Professional Development through Social Media

### 9–12 Burst

Changes in teacher-evaluation criteria reward teachers seeking professional development (PD) opportunities that improve classroom and professional practices. Learn how social media can be utilized to personalize PD and generate artifacts for portfolios that showcase best practices in and out of the classroom.

**John William Fontinell**

Baltimore County Public Schools, Maryland

419 (ATLANTIC CITY CONVENTION CENTER)



NATIONAL COUNCIL OF  
TEACHERS OF MATHEMATICS

PREMIER MATH EDUCATION EVENTS

# 2016 NCTM Regional Conferences & Expositions

Phoenix • October 26–28

Philadelphia • October 31–November 2

## Innovate. Collaborate. Learn.

NCTM Regional Conference & Expositions are an opportunity to share knowledge and learn with leaders in the field of mathematics education. Gain new strategies to unleash the mathematical mind of every student when you take advantage of superior mathematics resources right on your doorstep.

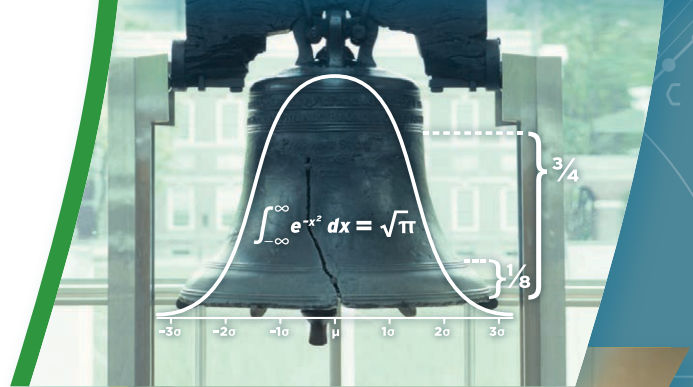
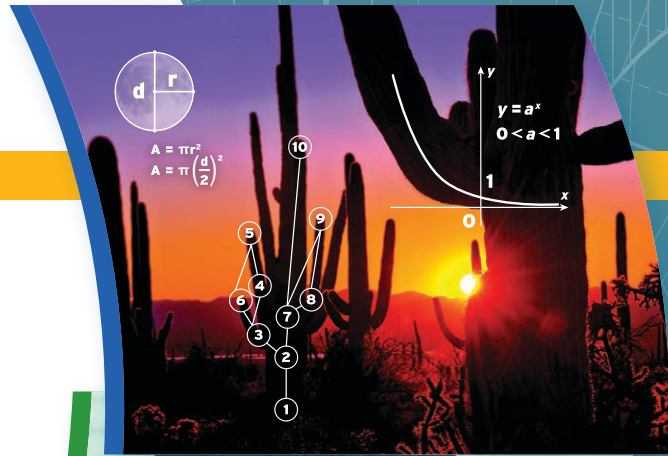
### What you'll get:

- Innovative ideas you can immediately put to use.
- Updates on classroom best practices from recognized innovators.
- In-depth discussion into the latest education resources.
- Knowledge-sharing with like-minded peers.
- Interaction with the latest tools and products in the robust exhibit hall.

### Who should attend?

- Pk–12 classroom teachers
- Math coaches
- Administrators
- Math teacher educator
- Preservice teachers
- Math specialists

Join NCTM in either Phoenix or Philadelphia and discover the tools that will help you promote the mathematical habits of mind that will lead your students to college and career success.



SAVE THE  
DATE

Learn more at [nctm.org/regionals](http://nctm.org/regionals) and follow us on



#NCTMregionals

11:30 A.M.–12:00 P.M.

**74**

## Putting the Pieces Together: Analyzing Key Features of Piecewise Functions

9–12 Burst

Do your students fall to pieces at the thought of piecewise-defined functions? Come and explore activities developed to lead students to a deeper understanding of domain, range, and other key features of functions.

**Lorie C. McFee**

North Buncombe High School, Weaverville, North Carolina

414 (ATLANTIC CITY CONVENTION CENTER)

**75**

## Math Chat

3–5 Burst

Are you looking for a creative way to get your students talking in math? Do you want to incorporate vocabulary into your everyday math conversations? Math Chat is a vocabulary-building presentation where students discuss a vocabulary word with the class. They define the word, explain when we use it in math, and give a real-world example of the word.

**Amy Besterman**

Avonworth School District, Pittsburgh, Pennsylvania

308/309 (ATLANTIC CITY CONVENTION CENTER)

**76**

## I Love Math Day

6–8 Burst

How can we build persistent and creative mathematics community? Every year since 2006, one middle school in New Jersey has been celebrating “I Love Math Day” on February 14. In this session, you will learn what you need to start building positive math community and how you can prepare activities to do so.

**Hoyun Cho**

Capital University, Columbus, Ohio

**Gary Lawrence**

Mustard Seed School, Hoboken, New Jersey

404 (ATLANTIC CITY CONVENTION CENTER)

12:30 P.M.–1:00 P.M.

**77**

**TECH**

## App-Smashing Addition: Encouraging Math Talk with iPad Apps

Pre-K–2 Burst

Learn how K–2 students “smash” together QR codes and the free iPad apps Teachley: Addimal Adventure and Educations in their study of addition strategies. See examples of students who use the iPad to find and watch mini-lessons, practice using addition strategies, take screenshots of their gameplay, and explain their math thinking via screencasts.

**Dana L. Pagar**

Teachley, New York, New York

**Ashley Rohan**

New York City Department of Education, New York

421 (ATLANTIC CITY CONVENTION CENTER)

**78**

## Good Mathematical Practices That Support PARCC Prep

6–8 Burst

In preparing our students for the PARCC assessment using Common Core content, it is important to see the connection with sound mathematical practices. This session will highlight the stylist approach to PARCC problems and will present strategies for student preparation based on classroom techniques that support a depth of learning.

**Chia-Lin Wu**

Richard Stockton College - NAMS, Galloway, New Jersey

**Judith A. Vogel**

Richard Stockton College – NAMS, Galloway, New Jersey

313 (ATLANTIC CITY CONVENTION CENTER)

THURSDAY

Want a **Free T-shirt?**  
Stop by **Member Services**  
in **NCTM Central**  
to learn how to get one!

**79****IEP Partnerships with Math Educators: Mutual Translations**

Preservice and In-Service Burst

Overview of pilot study and future research plans leading to information dissemination and resources regarding identifying what general educators want to know about the Individual Education Program's purpose and content in the math content area. Strategies for sharing and translating insider information from special educators to math educators and reciprocation in turn.

**Beverley Cush Evans**

Lesley University, Cambridge, Massachusetts

**Gail Cahill**

Lesley University, Cambridge, Massachusetts

**Linda Lengyel**

Lesley University, Cambridge, Massachusetts

419 (ATLANTIC CITY CONVENTION CENTER)

**80****TECH****iFlipped My Urban Math Classroom: Tech Tips for Paperless Classrooms**

9–12 Burst

Tired of notebook paper littering your desk waiting to be graded? Do you want to convert your traditional math class to a paperless student-led class setting? Participants will receive innovative technology tools, tips, and tricks in line with the Common Core standards and the Standards for Mathematical Practice that will help flip their math class.

**Katrina E. Stanfield**

Atlanta Public School, Georgia

**Nikkita Warfield**

Newton County School System, Covington, Georgia

411 (ATLANTIC CITY CONVENTION CENTER)

**81****TECH****I'm Blogging with the Man in the Mirror**

General Interest Burst

If you want to make the world a better place, you'd better look at yourself and then write a blog! "But, Justin," you say! "What would I write about? Why would anyone read it?" Come join us as we discuss why and how spreading your brain jelly onto Internet toast can help you become the best teacher ever!

**Justin M. Aion**

Woodland Hills Junior High School, Pittsburgh, Pennsylvania

308/309 (ATLANTIC CITY CONVENTION CENTER)

**82****Incorporating Writing in College Math Classes**

Higher Education Burst

This presentation will demonstrate various methods of using writing in undergraduate mathematics classes to help dispel "word problem" anxiety and to enhance mathematical understanding.

**Tonya S. Adkins**

Johnson &amp; Wales University, Charlotte, North Carolina

**Heather L. Lucas**

Sedgefield Elementary, Charlotte-Mecklenburg Schools, Charlotte, North Carolina

401 (ATLANTIC CITY CONVENTION CENTER)

**83****Merging the Worlds of Mathematics Teacher Education and Undergraduate Research**

Research Burst

The presentation explores a model for undergraduate research for prospective teachers funded by the National Science Foundation (NSF). The components of the model will be described. Examples will be given of how it has helped mathematics teacher candidates approach instruction with a researcher's mindset and make decisions based on empirical data.

**Randall E. Groth**

Salisbury University, Maryland

414 (ATLANTIC CITY CONVENTION CENTER)

**84****Reaching beyond the Classroom to Promote Mathematics Understanding**

3–5 Burst

The primary focus of the presentation will be on how to organize, plan, and implement an after-school Math Club for elementary students. Math Club involves hands-on learning with the integration of children's literature. Detailed information, materials, and data will be shared with attendees.

**Beth A. Moore**

Franklin College, Indiana

418 (ATLANTIC CITY CONVENTION CENTER)



12:30 P.M.–1:00 P.M.

**85**

## Keep Calm and Carry On!

General Interest Burst

This session will teach a simple, practical approach to classroom management. Teachers will be taught strategies to maintain self-control and encourage self control in students. This simple program can increase instructional time by five to nine hours each week by effectively dealing with disruptive behaviors.

**Karen Savarese**

Consultant, Trumbull, Connecticut

417 (ATLANTIC CITY CONVENTION CENTER)

**86**

**TECH**

## Interactive Notebooks: Marrying the Digital and Physical

6–8 Burst

Note taking can be a blessing and a burden for our students. Helping them to create notebooks that can be used as reference manuals supports learning, reflection, and retention. The interactive notebooks shared in this burst session will show how to combine the traditional notebook with digital tools to make a notebook for the 21st century.

**Jennifer R. Larson**

Far Hills Country Day School, New Jersey

408/409 (ATLANTIC CITY CONVENTION CENTER)

**87**

## Writing Shows Math's True Colors

6–8 Burst

When students write short responses to show their reasoning, much more can be seen about their learning than from showing work alone. Get quick tips for making this easy and effective in your classroom.

**Jeannette Johnson**

Georgetown County School District, South Carolina

404 (ATLANTIC CITY CONVENTION CENTER)

**88**

## 5-Group Formations: A Key Model for Visualizing Mathematical Relationships

Pre-K–2 Session

If you thought ten-frames were amazing, come learn about five-group formations! Find out how a small adjustment can help primary learners better use and internalize the relationships among numbers. We will look at how the formation can be used concretely and pictorially, as well as connect the formation with other well-known manipulatives.

**Hae Jung Yang**

Great Minds, Brooklyn, New York

**Marianne V. Strayton**

Great Minds; Teacher, Clarkstown Central School District, New City, New York

415 (ATLANTIC CITY CONVENTION CENTER)

**89**

**TECH**

## Desmos and Modeling: A Mathematical Match Made in Heaven

9–12 Session

Join us for a hands-on exploration of how to use Desmos—the free online graphing calculator with power and beauty to spare—to model and solve engaging problems arising in mathematics and the world around us. We'll discuss modeling best practices and tackle rich tasks in multiple domains. (Bring a laptop or tablet for maximum graphing joy.)

**Michael J. Fenton**

Fresno Christian Schools, California

402 (ATLANTIC CITY CONVENTION CENTER)

**90**

**FORM**

## Embedding Assessment into Instruction: Advancing Mathematics Learning and Teaching

9–12 Session

This presentation advances NCTM's theme of assessment as an open and coherent process as well as a means of enhancing mathematics learning, promoting equity, and providing valid inferences about mathematics learning and teaching. A problem-solving educational orientation is introduced to build assessment into instruction.

**Joseph W. Spadano**

Rivier University, Nashua, New Hampshire

420 (ATLANTIC CITY CONVENTION CENTER)

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**2016 NCTM Annual  
Meeting & Exposition** in  
San Francisco, CA • April 13–16

**91****Solving Ratio and Proportional Problems on the Cartesian Coordinate Plane**

6–8 Session

Modeling ratio, rate, and proportion using multiple representations is the focus. Double number lines, tape diagrams, and the Cartesian coordinate plane are models for proportional reasoning. Computation with fractions will also be modeled on the Cartesian coordinate plane, as it is an effective representation for visual learners or for remediation.

**Anne M. Collins**

Lesley University, Cambridge, Massachusetts

410 (ATLANTIC CITY CONVENTION CENTER)

**92** **TECH****iPad Games Are Fun, but Can They Help Teachers Differentiate?**

Pre-K–2 Session

Students play math games on their iPad, but then what? How do teachers keep track of what they've learned? Find out how one school uses cognitive research-based iPad games to teach CCSSM strategies. Learn how game-based learning analytics help teachers track their students' understanding, target intervention, and differentiate instruction.

**Rachael Labrecque**

Teachley, New York, New York

**Tim Lampson**

New York City Department of Education, New York, New York

405/406 (ATLANTIC CITY CONVENTION CENTER)

**93** **CORE****Lively Ways to Implement Common Core Mathematical Practices and Content!**

Preservice and In-Service Session

Engage in experiential learning as you untangle a human knot, become a mind reader, and solve puzzles that exemplify the Common Core mathematical practices. Identify and examine the Common Core algebra, geometry, and function concepts embedded in these activities as you join in discussions on classroom implementation.

**Gail Kaplan**

Towson University, Maryland

**R. Michael Krach**

Towson University, Maryland

314 (ATLANTIC CITY CONVENTION CENTER)

**94** **EDU****Mind over Mathematics: Conveying and Cultivating a Growth Mindset**

General Interest Session

Both students and teachers often have a fixed mindset about mathematics and learning mathematics. This session will address the importance and impact of mindset on learning mathematics and explore some simple ways to foster student motivation, productivity, and BOOST brain power.

**Cynthia (Cindy) G. Bryant**

LearnBop, New York, NY,

302 (ATLANTIC CITY CONVENTION CENTER)

**95** **CORE****The Procedural Fluency and Conceptual Understanding Connection**

6–8 Session

Participants at this session will work through problems that illustrate how teachers can help students develop procedural fluency through conceptual understanding, problem solving, and reasoning rather than through memorizing math facts or applying algorithms.

**David Ginsburg**

Ginsburg Educational Consulting and Coaching, Philadelphia, Pennsylvania

303 (ATLANTIC CITY CONVENTION CENTER)

**96** **FORM****Tools for Supporting Classroom-Based Formative Assessment Techniques**

General Interest Session

Classroom-based formative assessment (CBFA) implemented effectively can be a powerful way to improve teaching and learning. The strategic use of innovative tools can sharpen these formative assessment techniques. Come learn more tools, try them out, and leave with ideas and tools to enhance your use of CBFAs.

**Jon Wray**

Howard County Public Schools, Ellicott City, Maryland

403 (ATLANTIC CITY CONVENTION CENTER)

12:30 P.M.–1:30 P.M.

97

## Moving from Concrete to Pictorial to Abstract in Upper Elementary Math

3–5 Session

Explore the importance of transitioning from concrete to pictorial to abstract learning, to help with conceptual understanding, vital for success with Common Core Math. Examples will focus on multiplication and division of whole numbers and fractions.

**Shelley Rosen**

Self Employed—Math Consultant, Langhorne, Pennsylvania

412 (ATLANTIC CITY CONVENTION CENTER)

98 **ew**

## Amazing Math Games for Fact Fluency: Grades K–5

Pre-K–2 Exhibitor Workshop

Come and experience the highly motivating and fun games for math fact fluency in grades K–5 from Kim Sutton of Creative Mathematics. You will experience simple tools that are ready to use for practicing computational strategies every day of the school year. You will leave with a tool kit and handout that will inspire all students to become fluent with basic facts!

**Creative Mathematics**

Arcata, California

315 (ATLANTIC CITY CONVENTION CENTER)

99 **ew**

## Individualized Learning through ALEKS

General Interest Exhibitor Workshop

Participants will learn how to provide individualized instruction through the ALEKS online adaptive learning platform.

**McGraw-Hill Education**

McGraw-Hill Education, Columbus, Ohio

305/306 (ATLANTIC CITY CONVENTION CENTER)

100 **ew**

## Math That Makes Cents

General Interest Exhibitor Workshop

This workshop introduces new, free lessons for math teachers in grades 3–8. These lessons are aligned to the Common Core math standards and are in a financial literacy context. You can teach the math your students need to know *and* introduce some real-world financial education too. Quick, in-and-out lessons are compatible with a variety of delivery systems.

**Economics Center, University of Cincinnati**

Economics Center, University of Cincinnati, Ohio

318 (ATLANTIC CITY CONVENTION CENTER)

1:30 P.M.–2:45 P.M.

101

## Common Core–Based Investigations in Geometry

6–8 Workshop

Participants will explore hands-on activities designed to investigate CCSSM and the mathematical practices related to geometry. See how these explorations and the use of handheld technology make the mathematical practices come alive in the classroom and engage your students in tasks rich in problem solving.

**Fred Decovsky**

Teachers Teaching with Technology, Millburn, New Jersey

411 (ATLANTIC CITY CONVENTION CENTER)

THURSDAY

Looking for lessons, activities,  
and teacher resources?  
Check out [www.nctm.org](http://www.nctm.org)

**102****Employing Effective Questioning Strategies and Mathematical Discourse to Increase Achievement**

3–5 Workshop

The speaker will engage attendees using effective questioning strategies applied to complex, real-world problems. She will model how to design instruction where every child's instructional needs are addressed, thinking is visible, student feedback informs instruction, and standards-based learning results from thinking—not memorization. Handouts provided.

**Donna L. Knoell**

Educational Consultant, Shawnee Mission, Kansas

414 (ATLANTIC CITY CONVENTION CENTER)

**103****Guided Math Small-Group Lessons for Targeted Instruction**

3–5 Session

Target specific instructional needs of students with Guided Math small-group lessons. Learn how to plan lessons that not only differentiate based on previously identified needs, but also make spontaneous differentiation possible when needed to fill unidentified gaps in background knowledge and skills or to provide an additional challenge.

**Laney A. Sammons**

Independent Mathematics Consultant, Tunbridge, Vermont

313 (ATLANTIC CITY CONVENTION CENTER)

**104****It's Just the Facts! Attaining and Maintaining Fluency**

3–5 Workshop

Elementary children spend a large part of their math time working on fact fluency. This workshop will include hints and strategies along with activities provided to help children master their multiplication and division facts—and then to keep remembering them! Children's literature will also be included.

**Donna J. Long**

Houghton Mifflin Harcourt, Indianapolis, Indiana

408/409 (ATLANTIC CITY CONVENTION CENTER)

**105****Make It Relevant, Make It Fun, Make It Count**

6–8 Workshop

This gallery workshop will present hands-on activities and projects that inspire the challenged learner as well as challenging the inspired learner. Teachers can motivate their students with fun and relevant content that counts! Activities align with the Common Core and all 10 of the NCTM Principles and Standards for grades 6–8.

**Mary E. Runyon**

King Philip Middle School, Norfolk, Massachusetts

**Lynn A. Bois**

King Philip Middle School, Norfolk, Massachusetts

419 (ATLANTIC CITY CONVENTION CENTER)

**106****Making Sense of Statistics**

9–12 Workshop

Engaging students in analyzing data should develop understanding of core statistical concepts such as distribution, mean as “balance point,” and significant difference. Interactive dynamic technology and contexts such as animal speeds, soccer scores, and the number of pairs of shoes students own make these important statistical ideas concrete.

**Gail Burrill**

Past President, National Council of Teachers of Mathematics; Michigan State University, East Lansing

404 (ATLANTIC CITY CONVENTION CENTER)

**107****Performance Tasks for Developing School-Based Math Teams**

Preservice and In-Service Workshop

Make the most of grade-level and staff development meetings at your school with this set of performance tasks and accompanying support materials. Use interactive nonroutine visual problems to engage teachers and students in productive math discussions that help deepen conceptual understanding of key concepts.

**Erich Zeller**

MIND Research Institute, Irvine, California

417 (ATLANTIC CITY CONVENTION CENTER)

1:30 P.M.–2:45 P.M.

**108** **PtA**

### **Rich Tasks That Provide Active Engagement, Deep Understanding, and Integrated Technology**

9–12 Workshop

In this highly interactive session, discover how to increase student learning and encourage meaningful collaboration with two superb activities. Get answers to the question “How do we implement the CCSS and mathematical practices and still teach the ideas and make connections?” Incorporate the “5 Practices for Orchestrating Productive Mathematics Discussions.” Obtain all materials.

**Tom Reardon**

Youngstown State University, Ohio

308/309 (ATLANTIC CITY CONVENTION CENTER)

**109**

### **The Math Workshop Menu: A Model of Inquiry-Based Instruction**

Pre-K–2 Workshop

The Math Workshop is an inquiry-based model of differentiated instruction that fosters a deeper understanding of rigorous and rich mathematics that is attainable by all learners. The Math Workshop promotes a culture of engagement and individualization that gives mathematical access to all learners in the classroom community.

**Susan L. Austin**

Groton Public Schools, Connecticut

**Danielle Legnard**

Berry School, Bethel, Connecticut

401 (ATLANTIC CITY CONVENTION CENTER)

**110** **PtA**

### **The Power of Math Routines**

Pre-K–2 Workshop

According to NCTM’s *Principles to Actions*, “too much time is spent on learning procedures without connection to meaning, understanding, or applications.” In this workshop we will take on these concerns, experiencing classroom routines and Number Talks that develop mental math strategies, fluency and flexibility, and mathematical reasoning.

**Jan Parsons**

Delaware Math Coalition, Dover, Delaware

**Nancy L. Thornburg**

Cape Henlopen School District, Lewes, Delaware

418 (ATLANTIC CITY CONVENTION CENTER)

**111**

### **Thinking Like a Synthesizer: Applying Algebraic Transformations to Musical Melodies**

9–12 Workshop

Every song’s melody can be expressed as a series of integers, each of which represents the number of musical half steps above or below the first note in the song. Using various basic math and music technologies, we will create discrete graphs that we can transform horizontally and vertically—just like composers and synthesizers do!

**Mike J. Reiners**

Christ’s Household of Faith School, St. Paul, Minnesota

421 (ATLANTIC CITY CONVENTION CENTER)

2:00 P.M.–3:00 P.M.

**112** **PtA**

### **Classic Problems: Use Them to Teach Reasoning, Problem Solving, and Mathematics**

6–8 Session

As the reasoning, critical thinking, and problem-solving mode of teaching mathematics continues, teachers are expected to teach reasoning, problem solving, critical thinking *and*, at the same time, the mathematics of the curriculum. This session provides an examination of some classic problems that enable us to teach all these skills at the same time.

**Stephen Krulik**

Temple University, Philadelphia, Pennsylvania

412 (ATLANTIC CITY CONVENTION CENTER)

**113**

### **Demystifying Division: Whole Numbers and Fractions**

3–5 Session

Learn how to facilitate student reasoning about division by using a variety of contexts, manipulatives, and online visual models. Develop student understanding of partitive and quotative whole number division and extend that understanding to dividing with fractions. Student work, class experiences, and performance data will be shared.

**Lauri Susi**

Conceptua Math, Petaluma, California

420 (ATLANTIC CITY CONVENTION CENTER)

THURSDAY

**114** **CORE****Hollywood Math and Science**

## General Interest Session

We discuss our role in putting math on the big and small screen and in creating ancillary educational initiatives, with a focus on *Elementary* (starring Lucy Liu), *Medium*, *Numbers*, and *Flatland the Movie* (starring Kristen Bell, Martin Sheen, and Michael York).

**Jonathan David Farley**

Morgan State University, Baltimore, Maryland

**Tony Harkin**

Rochester Institute of Technology, New York

403 (ATLANTIC CITY CONVENTION CENTER)

**115****Jimmy Fallon, Raw Eggs, a Forgotten Random Variable, and More . . .**

## 9–12 Session

Jimmy Fallon’s “egg roulette” game is a fun example of the negative hypergeometric random variable. Through activities and simulations, participants will study variability and inference as they relate to this game. Media clips will also be used to motivate other topics in statistics including the dangers of confusing correlation with causation.

**James R. Bush**

Waynesburg University, Pennsylvania

405/406 (ATLANTIC CITY CONVENTION CENTER)

**116****Learn It 2day . . . Teach It 2morrow**

## Pre-K–2 Session

What do a hula hoop and a swim noodle have to do with math? What about Hershey Kisses and garage-sale stickers? See how these easy, hands-on, and inexpensive math projects—plus many more—will make your students ask for more math. Educators will learn how to integrate technology and receive practical and creative ways to reach their students.

**Kim D. Mueller**

Lumberton Township School District, New Jersey

**Lauren Shiffer**

Moorestown Upper Elementary School, New Jersey

410 (ATLANTIC CITY CONVENTION CENTER)

**117** **CORE** **PtA****Mastering CCSSM: Supporting Students through Math Work Stations**

## Pre-K–2 Session

How do I get my students to master all of the standards? In this workshop, participants will learn how to identify the learning needs of students through an examination of the levels of cognitive understanding of early math students. They will also learn how cognitive levels can be supported and stretched through easy-to-make math work stations.

**Denise M. Rawding**

Newark Public School, New Jersey

415 (ATLANTIC CITY CONVENTION CENTER)

**118****Mathematical Practice #4: You, Too, Can Model with Mathematics**

## General Interest Session

Extend your understanding of Mathematical Practice #4: “Model with mathematics.” In this session, we will explore criteria for modelling tasks and analyze sample tasks (K–12). Discussion will also focus on how to engage students in the modeling practice.

**Cathy Martin**

Board of Directors, National Council of Teachers of Mathematics; Denver Public Schools, Colorado

302 (ATLANTIC CITY CONVENTION CENTER)

**119****Matrices & Medical Imaging: What’s in Common**

## Higher Education Session

Explore how medical images are represented and stored as pixel values in matrices, an application dependent on matrix mathematics and technology. Matrices are necessary to handle large data sets. I will focus on cross-disciplinary critical-thinking methods and experiential learning opportunities for students.

**Susan G. Helser**

Mott Community College, Flint, Michigan

314 (ATLANTIC CITY CONVENTION CENTER)

# NCTM Proudly Presents

L AROUND US | MATH IS ALL AROUND US | MATH IS ALL AROUND US

## Principles to Actions: Ensuring Mathematical Success for All

**What it will take to turn the opportunity of the Common Core State Standards for Mathematics into reality in every classroom, school, and district.**

Continuing its tradition of mathematics education leadership, NCTM has undertaken a major initiative to define and describe the principles and actions, including specific teaching practices, that are essential for a high-quality mathematics education for all students.

This landmark new title offers guidance to teachers, mathematics coaches, administrators, parents, and policymakers:

- Provides a research-based description of eight essential Mathematics Teaching Practices
- Describes the conditions, structures, and policies that must support the Teaching Practices
- Builds on NCTM's *Principles and Standards for School Mathematics* and supports implementation of the Common Core State Standards for Mathematics to attain much higher levels of mathematics achievement for all students
- Identifies obstacles, unproductive and productive beliefs, and key actions that must be understood, acknowledged, and addressed by all stakeholders
- Encourages teachers of mathematics to engage students in mathematical thinking, reasoning, and sense making to significantly strengthen teaching and learning



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List Price: \$28.95 | **Member Price: \$23.16**

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### INSIDE

Progress and Challenge  
Effective Teaching and Learning  
Essential Elements  
Access and Equity  
Curriculum  
Tools and Technology  
Assessment  
Professionalism  
Taking Action  
References

**Go to link at left to access full Table of Contents, Preface, and an Excerpt.**

[www.nctm.org/PrinciplestoActions](http://www.nctm.org/PrinciplestoActions)



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please call **(800) 235-7566** or visit [www.nctm.org/catalog](http://www.nctm.org/catalog).

**120** **MATH****Number and Operations Success for All through Tier 1 Instruction**

3–5 Session

Looking for ways to provide access for all while maintaining a classroom community? Come learn classroom-researched strategies for using assessment, tiered problems, games and puzzles, menus, and the arts to engage all students at just the right level. See short video clips of teachers implementing these ideas in kindergarten–grade 5 classrooms.

**Linda Dacey**

Lesley University, Cambridge, Massachusetts

402 (ATLANTIC CITY CONVENTION CENTER)

**121** **TECH****Implementing and Using the TI-Nspire CX CAS for Beginners**

9–12 Session

Implement the newest handheld in your school and your classroom. New Nspire users will learn the basic functions of the CX CAS handheld. Participate in hands-on activities, while learning how to obtain the support from your administration, parents, and staff. Handouts will be provided.

**Lauren E. Carr**

Villa Joseph Marie High School, Holland, Pennsylvania

303 (ATLANTIC CITY CONVENTION CENTER)

**122** **ew****Building Concepts in Middle Grades**

6–8 Exhibitor Workshop

Are fractions and ratios the same? What is the role of a variable in an expression? In this session, we will look at new ways of using technology to help students visualize, think about, connect and discuss mathematics across grades 6 through 8.

**Texas Instruments**

Texas Instruments, Dallas, Texas

320 (ATLANTIC CITY CONVENTION CENTER)

**123** **ew****Moving Math Vocabulary to Excellence with Dinah Zike's Notebooking Central!**

General Interest Exhibitor Workshop

Learn how to make rich connections between math vocabulary, classroom and personal experiences, and math content. Get on the cutting edge of interactive notebooks with new, brain-friendly materials from Dinah Zike's Notebooking Central! Session includes research, examples, and exclusive templates to make math vocabulary interactive.

**Dinah-Might Adventures**

Dinah-Might Adventures, San Antonio, Texas

305/306 (ATLANTIC CITY CONVENTION CENTER)

**123.1** **ew****Using Cloud Based Technology to Engage Students & Increase Math Test Scores**

General Interest Exhibitor Workshop

With dedicated interfaces for K-6 and G7-12 students, Mathletics caters for the evolving learning styles and requirements of students as they grow older. Both contain all the activities, tutorials and support students need to exceed their curriculum goals.

**3P Learning Mathletics**

3P Learning Mathletics, New York, New York

315 (ATLANTIC CITY CONVENTION CENTER)

**Stay connected!**

Check us out on  
Twitter and Facebook.  
**#NCTMregionals**



**124**

**Creating and Implementing Differentiated Materials Is Easier Than You Think**

Preservice and In-Service Workshop

Investigate various forms of differentiation, discussing when, why, and how they can be used. Working from classroom scenarios, we'll create differentiated materials, such as tiered worksheets, differentiated questioning, and graduated-difficulty and individual path and paced problem sets. Daily assessment to organize student groups will be discussed.

**Allan E. Bellman**

University of Mississippi, Oxford

**Jessica Peralta**

Oxford High School, Mississippi

421 (ATLANTIC CITY CONVENTION CENTER)

**125**

**Creating a Playful Atmosphere by Utilizing the SMPs Effectively**

Pre-K–2 Workshop

A child's innate sense to learn is through the act of play. Why not use the Standards for Mathematical Practice to exploit, utilize, and facilitate intentional play through valuable mathematic instruction? In this workshop, you will learn developmentally appropriate ways to employ the SMPs, and how to ignite the passion for learning!

**Jessica L. Bobo**

ORIGO Education, St. Charles, Missouri

414 (ATLANTIC CITY CONVENTION CENTER)

**126**

**PtA**

**15 Minutes a Day That Changed Everything**

Pre-K–2 Workshop

Looking for ways to help students hold on to learning, or move from concrete strategies toward pictorial and abstract levels? In this session, the presenter will share how she used 15 minutes of fluency practice each day to impact student learning. Engage in teacher-led activities and partner work that keep students motivated and practicing!

**Marianne V. Strayton**

Grade Level Lead Curriculum Associate, Common Core, Inc.; Teacher, Clarkstown Central School District, New City, New York

313 (ATLANTIC CITY CONVENTION CENTER)

**127**

**Engaging Inequalities That Enhance the Mathematical Practices**

6–8 Workshop

Come participate in sample lessons and problems that use many activities and problems to work with inequalities. Teachers will receive ideas and materials that they can use in their own algebra classrooms. Concepts include: solving, graphing, and writing one- and two- variable inequalities, the meaning of inequalities, and systems of inequalities.

**Erica A. Warren**

Southern York County School District, Pennsylvania

308/309 (ATLANTIC CITY CONVENTION CENTER)

**128**

**Exploring Released AP Calculus Questions in Grades 6–12**

9–12 Workshop

We will explore two integral-based Free Response Questions (2000 AB Calc #2 and 2009 AB Calc #2) in ways that students from middle school through precalculus can correctly answer them. We will investigate a model rocket problem to explore differential calculus. Participants can generalize the ideas we discuss to explore many AP released problems.

**Terry Walsh**

Retired Teacher Administrator, Loveland, Colorado

419 (ATLANTIC CITY CONVENTION CENTER)

**129**

**Incorporating Math Modeling in the Classroom**

9–12 Workshop

Mathematical modeling is an innovative process to solve open-ended problems while reinforcing core concepts and computational skills. This session will prepare attendees to understand and teach the process of math modeling. Teachers will explore what mathematical modeling is, why it can be a powerful motivational tool, and how to actually do it.

**Kathleen Fowler**

Clarkson University, Potsdam, New York

**Benjamin J. Galluzzo**

Shippensburg University, Pennsylvania

**Karen Bliss**

Quinnipiac University, Hamden, Connecticut

408/409 (ATLANTIC CITY CONVENTION CENTER)

3:15 P.M.–4:30 P.M.

**130**

### Modeling with Geoboards

3–5 Workshop

Participants will use geoboards, protractors, and rulers to investigate area, perimeter, properties of triangles and quadrilaterals, and transformations. Patterns, problem-solving methods, and the Standards for Mathematical Practice will be addressed.

**Celine J. Przydzial**

Kutztown University, Pennsylvania

404 (ATLANTIC CITY CONVENTION CENTER)

**131**

**MATH**

### Strategies to Implement Mathematical Practices for ELLs and Struggling Students

6–8 Workshop

English language learners (ELLs) and struggling students face many challenges while learning the unique features of the language of mathematics and learning a new language, which is a demanding task. CCSSM's mathematical practices and well-designed instructional strategies promote academic achievement and school success for ELLs and all-learners.

**Lynn Columba**

Lehigh University, Bethlehem, Pennsylvania

**Janie Zimmer**

Research-Based Education, Reading, Pennsylvania

418 (ATLANTIC CITY CONVENTION CENTER)

**132**

### Domino Games: Connecting the Dots for Students

Pre-K–2 Workshop

Come prepared to play games that teach the following areas of CCSSM: number sense, patterning, place value, basic operations, and graphing. Games are easily differentiated to meet the needs of all students. Gameboards, student samples, and assessment ideas will be provided. Great for regular, RTI, and afterschool programs. All games will be tied to CCSSM for reference.

**Jane Felling**

Box Cars and One-Eyed Jacks, Edmonton, Canada

401 (ATLANTIC CITY CONVENTION CENTER)

**133**

### Effective Math Tasks: How to Select and Facilitate with Confidence

3–5 Workshop

Task-based lessons play a vital role in developing students' abilities to think like mathematicians. This session will focus on lessons learned from LearnZillion's Dream Team teachers about creating worthwhile math tasks, and on the steps all teachers can take to create a smooth journey to successful standards-based teaching.

**Eric Westendorf**

LearnZillion, Washington, DC

**Dianne Leoni**

Amsterdam Elementary School, Hillsborough, New Jersey

411 (ATLANTIC CITY CONVENTION CENTER)

3:30 P.M.–4:30 P.M.

**134**

### Assessing Conceptual Approaches of Rational Numbers

Research Session

This presentation demonstrates the conceptual approach to learn rational numbers. It includes how the study approach allows students to learn rational numbers conceptually. It also demonstrates quantitative results and students' feedback after learning fractions through a group discussion method.

**Jae Ki Lee**

Borough of Manhattan Community College, New York, New York

**Susan Licwinko**

Borough of Manhattan Community College, New York, New York

314 (ATLANTIC CITY CONVENTION CENTER)

**135**

### Institutional and Teaching Practices Message Beliefs about Confidence in Student Capabilities

9–12 Session

"Actions speak louder than words." Explore the idea that all-students can succeed in a rigorous math program leading to the demonstration of college and career readiness by the end of eleventh grade. The building of a high school multicourse program robust with the supports and high expectations necessary for inclusive student success will be examined.

**Renee Parsley**

Delaware Department of Education, Dover

402 (ATLANTIC CITY CONVENTION CENTER)

THURSDAY

**136**

### **Keeping It Real: Authentic Real-World Math Lessons for Middle School**

6–8 Session

How long does it take to burn off a Big Mac? Do taller Olympic sprinters have an unfair advantage? Is *Wheel of Fortune* rigged? In this presentation, we'll engage in real-world, authentic, and cognitively rigorous activities for your middle school math classroom, and we'll discuss how to use them to foster a culture of conversation and critical thinking.

**Karim K. Ani**

Mathalicious, Charlottesville, Virginia

303 (ATLANTIC CITY CONVENTION CENTER)

**137**

### **Learning the Language of Mathematics in the Early Years**

Pre-K–2 Session

Success with mathematics depends on language that builds pictures of concepts and hence understanding. Children are encouraged to use their own language and then new terms are introduced. This session will focus on the language for the addition and subtraction concepts. Practical classroom learning experiences will be shared.

**Rosemary R. Irons**

Early Childhood Mathematics Consultant, Brisbane, Australia

415 (ATLANTIC CITY CONVENTION CENTER)

**138**

### **Real Possibilities: The Versatility of the Number Line**

3–5 Session

We will examine how the number line can be used to help deepen students' understanding of whole numbers, fractions, and decimals. This highly versatile but often underused tool can be used to solve elapsed time problems, compare numbers, perform operations, and plot measurement data. It can even be rotated vertically, to round numbers.

**Saffron L. VanGalder**

Curriculum Associate, Common Core, Inc.; Spencer-Van Etten Elementary School, Washington, District Of Columbia

302 (ATLANTIC CITY CONVENTION CENTER)

**139** **FORM**

### **The Future of the Smarter Balanced Assessment Consortium**

General Interest Session

Over the course of five years, Smarter Balanced states collaborated to build a foundation for Common Core–aligned mathematics assessment. This presentation highlights the key milestones across the five years and describes how research and stakeholder input will guide the future work of the consortium.

**Judy Hickman**

Smarter Balanced Assessment Consortium, Los Angeles, California

403 (ATLANTIC CITY CONVENTION CENTER)

**140** **MATH**

### **Using the Context of Social Justice to Teach Elementary Mathematics**

General Interest Session

In the age of CCSSM, student growth objectives (SGOs), and extensive testing, two professors, along with preservice teachers, share strategies using social justice contexts such as racial profiling, poverty, and nutrition to teach math to elementary students, grades 2–8. Challenges from urban and suburban perspectives will be revealed through video, lesson plans, and discussion.

**James J. Clayton**

Saint Peter's University, Jersey City, New Jersey

**Joan Kwako**

University of Minnesota Duluth

412 (ATLANTIC CITY CONVENTION CENTER)

**141** **MATH**

### **What Do Students Say about Equity in Math Education?**

General Interest Session

In this session, participants will explore strategies for empowering student voice as a catalyst for continuous improvement for a school or district mathematics program. Participants will hear how students describe their experiences in and around the mathematics classroom and regarding issues of equity and cultural proficiency.

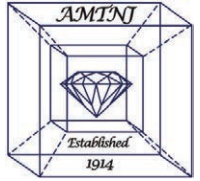
**Bill Barnes**

Howard County Public Schools, Ellicott City, Maryland

405/406 (ATLANTIC CITY CONVENTION CENTER)

# AMTNJ

The Association of Mathematics Teachers of New Jersey



Invites you to attend the following events that it is hosting at the NCTM Regional Conference. All events are cost free. All are welcome to attend. Reservations are required for several events due to limited seating capacity. Please visit our website, [www.amtnj.org](http://www.amtnj.org), for more information and to make reservations.

## Wednesday, October 21, 2015

**7:30 p.m. – 9:00 p.m. Math Trivia Night**

Sponsored by Pearson

Refreshments, light snacks and prizes

Sheraton Hotel - Tun Tavern

Reservations Required

**PEARSON**

Come hang out with some fun math teachers, enjoy some snacks and compete in math trivia with Emcee Dr. Eric Milou!



Eric Milou, Professor at Rowan University and author of the middle grades Mathematics program, "Digits".

## Thursday, October 22, 2015

**4:30 p.m. – 5:30 p.m. General Reception**

Sponsored by McGraw Hill

Refreshments provided

Convention Center - First Floor Atrium



**5:45 p.m. – 6:45 p.m. Annual Business Meeting**

AMTNJ Annual Business Meeting overview of recent activities and strategic planning for next year. Members and potential members welcome.

Sheraton Hotel - Crown Ballroom

**6:45 p.m. – 7:15 p.m. AMTNJ President's Reception**

Sponsored by McGraw Hill

Light snacks and refreshments served

Sheraton Hotel - Pre Function Area

Reservations Required



**7:15 p.m. Banquet**

Sponsored by Texas Instruments

Presentation by Tom Reardon, T<sup>3</sup> National Instructor

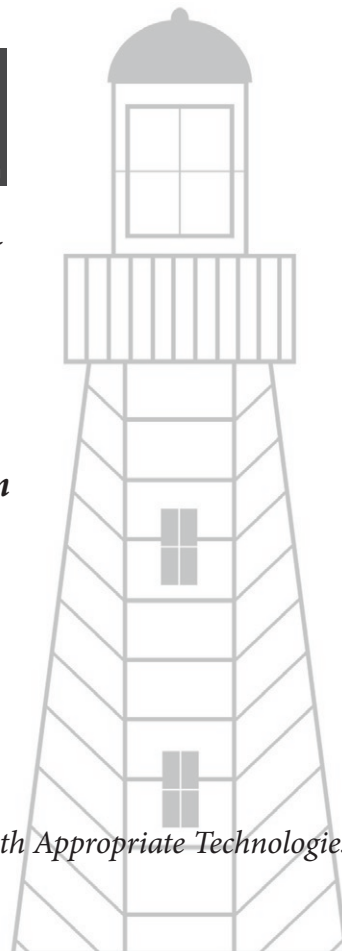
*"Creatively Integrating Problem Solving and Persevering with Appropriate Technologies"*

TI attendee gift and prizes

AMTNJ Awards Presentation

Sheraton Hotel - Pearl Ballroom

Reservations Required



For all reservations scan this QR or go to [amtnj.org](http://amtnj.org)



Tom Reardon, the guest speaker for our Annual Event, has extensive experience integrating TI technology appropriately and effectively in the mathematics teaching and learning processes at all grade levels.

Please stop by the AMTNJ booths (#433 and near registration in front hall) for more information about these events, for fun math activities, for opportunities to win prizes, and to learn more about our organization.

## HIGHLIGHTS

|  |
|--|
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| <b>CORE</b> | Common Core/College Career Readiness                             | 147, 154, 168, 189, 246, 267, 268                          |
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| <b>TECH</b> | Making use of Technologies to Enhance Learning                   | 146, 148, 149, 188, 200, 207, 209, 217, 239, 242, 251, 253 |



### Conference App

Network onsite with attendees!  
[www.nctm.org/confapp](http://www.nctm.org/confapp)



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[www.nctm.org/facebook](http://www.nctm.org/facebook)



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### Registration Hours

7:00 a.m.–3:00 p.m.

### Exhibit Hours

8:00 a.m.–4:00 p.m.

### NCTM Central Hours

8:00 a.m.–4:00 p.m.

### Fire Codes

We have made every attempt to provide adequate seating for participants at the conference, but for your safety and because of fire regulations, only those with seats will be allowed in meeting rooms. To comply with fire codes, we will have to ask persons sitting on the floor or standing to leave the room.



7:15 A.M.–7:45 A.M.

**142**

## Regional Conference Overview & Orientation

General Interest Session

Hosted by members of the NCTM Board of Directors, this session will show you how to maximize your overall conference experience. Learn what's new or discover something you've missed in the past, how to navigate presentations, use the Conference App, and network with other attendees.

**Cathy Martin**

Board of Directors, National Council of Teachers of Mathematics;  
Denver Public Schools, Denver, Colorado

411 (ATLANTIC CITY CONVENTION CENTER)

8:00 A.M.–9:00 A.M.

**143** **MATH**

## 4 Essential Elements of RTI for Mastery of Rational Numbers

6–8 Session

You are the student. We are the teachers. Walk through the four essential elements of successful elementary Response to Intervention (RTI) programs. Take a pretest, make decisions, engage in explicit instruction using manipulatives within the C-R-A process, and conclude with progress monitoring. All activities emphasize the CCSS Standards for Mathematical Practice for rational numbers.

**Sonja L. Goerdt**

St. Cloud State University, St Cloud, Minnesota

**Amy L. Johnson**

Math Teachers Press, Inc., Minneapolis, Minnesota

415 (ATLANTIC CITY CONVENTION CENTER)

**144** **PtA**

## A Task is a Task—Or Is It?

General Interest Session

Tasks and activities that develop conceptual understanding, application, and procedural fluency have different features. In this presentation, sets of tasks from several grade levels will be shared. Participants will consider the purpose of the tasks and will think about an effective progression for using a balanced approach to choosing tasks.

**Nora Ramirez**

Nora G. Ramirez Consulting, Tempe, Arizona

402 (ATLANTIC CITY CONVENTION CENTER)

**145** **MATH**

## Diagnostic Interviews: An Assessment for Targeting Interventions for Struggling Students

3–5 Session

We will develop your understanding and use of diagnostic interviews to assess mathematics learning for at-risk students within a Response to Intervention model. We will share examples of diagnostic interviews linked to the Common Core State Standards as well as corresponding student responses.

**Amy Lingo**

University of Louisville, Kentucky

302 (ATLANTIC CITY CONVENTION CENTER)

**146** **TECH**

## Keeping It Real: Authentic Real-World Math Lessons

9–12 Session

How have video games changed over time? How many people should you date before you propose? Can you really trust your memory? In this presentation, we'll engage in authentic (real-world) and cognitively rigorous activities for your middle school math classroom, and discuss how to use them to foster a culture of conversation and critical thinking.

**Karim K. Ani**

Mathalicious, Charlottesville, Virginia

412 (ATLANTIC CITY CONVENTION CENTER)

**147** **CORE**

## Learn about the Standards for Mathematical Practice Using Student Dialogues

6–8 Session

Explore the Standards for Mathematical Practice using student dialogues that show the practices in action. See how mathematical practices and content are intertwined in student thinking. You will (1) explore a mathematics task and share strategies, (2) read a student dialogue, and (3) discuss evidence of mathematical practices in that dialogue.

**Victor Mateas**

Education Development Center, Waltham, Massachusetts

**June Mark**

Education Development Center, Waltham, Massachusetts

**Johannah Nikula**

Education Development Center, Waltham, Massachusetts

405/406 (ATLANTIC CITY CONVENTION CENTER)

FRIDAY

8:00 A.M.–9:00 A.M.

**148** **TECH**

## Measuring the Effectiveness of Flipped vs. Traditional Instruction in Calculus

Research Session

This research study was designed to enhance students' mastery of course material in calculus and assess the effectiveness of a traditional "lecture-based" instructional model compared to a modified "flipped classroom" model using a quasi-experimental research design. Evaluation of effectiveness was measured by pre-post exams and a survey.

**Catherine E. Scott**

University of North Carolina, Chapel Hill

314 (ATLANTIC CITY CONVENTION CENTER)

**149** **TECH**

## More Than Numbers: "Learning by Doing" with Mobile Devices

3–5 Session

Experiential learning moments have a key role in establishing basic mathematical concepts, but they are not easy to orchestrate. Mobile devices may bring an abundance of virtual manipulatives to the classroom. How can teachers use such tools to stage effective learning experiences?

**Guy Vardi**

Slate Science, New York, New York

420 (ATLANTIC CITY CONVENTION CENTER)

**150**

## Reading, Counting, and Measuring, Oh My!

Pre-K–2 Session

Attendees will experience activities that integrate children's literature into counting and measurement using manipulatives. The handouts will provide all necessary resources and all activities will demonstrate connections to the CCSS mathematical practices and content.

**Maria Diamantis**

Southern Connecticut State University, New Haven

**Adam Goldberg**

Southern Connecticut State University, New Haven

303 (ATLANTIC CITY CONVENTION CENTER)

**151** **FORM**

## Ready Set Action: Formative Assessment at Work

General Interest Session

This highly motivational session will examine the two research-affirmed and critical elements of effective formative assessment: feedback and action. We will consider three types of research-affirmed formative assessment and learning for students: in-class (via tasks), out of class (via homework), and end of unit (via tests).

**Timothy D. Kanold**

Loyola University, Chicago, Illinois

403 (ATLANTIC CITY CONVENTION CENTER)

**152**

## STEM Comes Alive in an Interdisciplinary Laboratory Setting

9–12 Session

This session will feature an innovative STEM project in which school-based teams of math and science teachers design and implement interdisciplinary problem-based lessons in a laboratory setting. Math teachers learn science, science teachers learn math, and students experience an authentic engagement in the math and science practices.

**Jon Manon**

University of Delaware, Newark

410 (ATLANTIC CITY CONVENTION CENTER)

Membership questions?  
**We've got answers!**  
Visit **Member Services**  
in **NCTM Central!**



8:00 A.M.–9:15 A.M.

**153**

### A Walk in the PARCC

Preservice and In-Service Workshop

Critical shifts of focus, coherence, and rigor have been advocated nationally through Common Core Standards and assessments including PARCC and Smarter Balanced. Attendees will engage in real-world teaching scenarios related to the shifts and learn a metric that can be used to self-evaluate how well they implement these shifts in their own classroom.

**John Quinn**

The Richard Stockton College of New Jersey, Galloway

421 (ATLANTIC CITY CONVENTION CENTER)

8:00 A.M.–9:15 A.M.

**154** **CORE**

### College and Career Readiness through Quality Tasks and Teaching

3–5 Workshop

Need a task? Just “Google it.” But is it a quality task? And what makes a quality task? How are tasks and teaching related? Better yet, how do tasks and teaching impact college and career readiness? In this session, participants will identify the characteristics of rich tasks, evaluate examples, and consider modifications for increasing rigor.

**John J. Sangiovanni**

Howard County Public School System, Ellicott City, Maryland

408/409 (ATLANTIC CITY CONVENTION CENTER)

**155**

### Composing and Decomposing Whole Numbers and Decimal Fractions

3–5 Workshop

CCSSM asks that whole numbers and decimal fractions be composed and decomposed in standard and nonstandard ways. This hands-on presentation will demonstrate how this can be done and, more importantly, will explain when it can be useful. Participants in this workshop will use and make visual aids that support the topic and identify applications.

**Allan Turton**

ORIGO Education, St. Charles, Missouri

418 (ATLANTIC CITY CONVENTION CENTER)

**156**

### Handheld Technology + Hands-On Activities = CCSS Success!

9–12 Workshop

Handheld technology coupled with inquiry-based learning helps students better apply linear, quadratic, and exponential functions to their real-world applications. Participants are provided with classroom-ready hands-on lessons that synthesize the statistics, functions, and modeling strands of the Common Core State Standards.

**Tom Beatini**

Union City Public Schools, New Jersey

401 (ATLANTIC CITY CONVENTION CENTER)

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The National Junior Mathematics Club  
serves middle school  
mathematics students.  
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FRIDAY



**157**

**Playing with Numbers in My World**

Pre-K–2 Workshop

Participants will view PowerPoint of pre-K–K students solving mathematical challenges with hands-on materials. Each table will have several student task packets. Each task will have a real world connection. Participants will complete one or more tasks. A graphic organizer will be completed to show what pre-K–K students would gain from this method.

**Linda S. Prichard**

Rutherford County Schools, Murfreesboro, Tennessee

[411 \(ATLANTIC CITY CONVENTION CENTER\)](#)

**158**

**Probability and Simulations in the Middle Grades**

6–8 Workshop

The Common Core has placed renewed emphasis on the areas of probability and statistics in the middle grades. Problems about sock drawers and combinations are not enough. This session will work through hands-on, data-driven activities and simulations that will make you want to start with this unit next year, instead of saving it for last!

**Larry Ottman**

Germantown Friends School, Philadelphia, Pennsylvania

[419 \(ATLANTIC CITY CONVENTION CENTER\)](#)

**159**

**Prove It! . . .With Rigid Motion Transformations**

9–12 Workshop

Participants will be presented with pairs of geometric figures. Through exploration, we will devise strategies for using one or more rigid motion transformations to prove, or disprove, congruency. Along the way, we will analyze the merits of paper folding, compass-straightedge, and handheld technology as we perform the various constructions.

**John Ashurst**

Harlan Independent Board of Education, Kentucky

[404 \(ATLANTIC CITY CONVENTION CENTER\)](#)

**160**

**Deepening the Connections between Measurement and Number**

Pre-K–2 Workshop

Come engage in activities to connect essential understanding within measurement and number. Activities will assist in integrating conceptual understandings between measurement attributes, tools, estimating, counting, comparing, and operations. Explicit connections among quantity, representation, and mathematical language will be discussed.

**Marti Kuntz**

Educational Resources Group, Charleston, South Carolina

[308/309 \(ATLANTIC CITY CONVENTION CENTER\)](#)

**161**

**On a Roll to Mastering Place Value**

Pre-K–2 Workshop

Come prepared to play games that use number lines, cards, and dice. Activities will focus on the following Common Core State Standards: naming, ordering and comparing numbers, learning patterns, and benchmark strategies on 100's and 1,000's number lines, introductory rounding and expanding strategies. Gameboards, journal writing samples, and assessment ideas will be shared.

**Jane Felling**

Box Cars and One-Eyed Jacks, Edmonton, Canada

[414 \(ATLANTIC CITY CONVENTION CENTER\)](#)

**162**

**Amusement Park Math**

6–8 Workshop

Experience math at the amusement park through hands-on activities, from word problems with whole numbers, fractions, and decimals to probability and data analysis! Have fun with geometry and measurement concepts and a little bit of algebra, too. This STEM session will immerse participants in math activities in an amusement park setting.

**Janet H. Caldwell**

Rowan University, Glassboro, New Jersey

[313 \(ATLANTIC CITY CONVENTION CENTER\)](#)



**163****Essential Math Skills: Pre-K to Grade 3**

Pre-K–2 Session

Some math skills deserve more than coverage. They are fundamental to a child's ability to understand and learn math, and they deserve the time and instruction needed to develop deep understanding. These crucial skills are the core of the core and must be developed to competency to allow students to become successful math learners for life.

**Bob Sornson**

Early Learning Foundation, Brighton, Michigan

415 (ATLANTIC CITY CONVENTION CENTER)

**164** **MATH****From Margins to Center: Advancing the Mathematics Education of ELLs**

General Interest Session

This session presents affordances and challenges in teaching mathematics to English Language Learners (ELLs). The focus is on promising teaching practices that support ELLs in participating in mathematics lessons. Video clips will be used to illustrate examples of best teaching practices that engage ELLs in learning mathematics.

**Sylvia Celedón-Pattichis**

TODOS: Mathematics for ALL; University of New Mexico, Albuquerque

403 (ATLANTIC CITY CONVENTION CENTER)

**165****Let's Make Sense of Number Sense!**

Pre-K–2 Session

This session will focus on strategies for developing strong number sense with primary students. Participants will leave with a powerful handout that can be used on Monday morning. Kim Sutton will model using songs, dances, literature, and meaning tools that give primary students a strong foundation.

**Kim Sutton**

Consultant, Arcata, California

405/406 (ATLANTIC CITY CONVENTION CENTER)

**166****More or Less: Developing the Concepts of Comparison**

3–5 Session

In this session, we will explore the developmental progression of comparison. We will consider the differences between direct and indirect comparison as well as additive and multiplicative thinking. We will discuss how these concepts are linked to the four operations and how to carefully develop comparison ideas.

**Debi DePaul**

Origo Education, Inc., St. Charles, Missouri

402 (ATLANTIC CITY CONVENTION CENTER)

**167** **EDU****Neuroeducation Research and Strategies: Structuring Positive Emotional Climates**

General Interest Session

This session discusses recent research in teacher efficacy beliefs, cultural competence, and neuroeducation professional development. Strategies for improving long-term memory and promoting positive emotional climates will be shared.

**Mariale M. Hardiman**

Johns Hopkins University School of Education, Baltimore, Maryland

**Ranjini Mahinda JohnBull**

Johns Hopkins University School of Education, Baltimore, Maryland

303 (ATLANTIC CITY CONVENTION CENTER)

**168** **CORE****Problem Strings: A Lesson Format for All Students**

6–8 Session

A problem string is a powerful lesson format where all students learn, have access to the problems, and are challenged. The success hinges on the order, the discussion, and the teacher modeling student strategies to build connections. Come experience strings of problems such as solving proportions, decimal operations, and solving equations.

**Pamela Weber Harris**

University of Texas, Austin

412 (ATLANTIC CITY CONVENTION CENTER)

**169****Quadratic Equations:  
One by Air, Two by Water**

9–12 Session

Students learn a quadratic equation that serves to determine height as a function of time for a projectile. If the parabolic arc is to come off a water surface, then the exit angle from the water and the horizontal distance the water will travel so as to stay in the fountain need to be incorporated into a new formulation of the quadratic equation.

**Marshall Gordon**

Park School of Baltimore, Maryland

302 (ATLANTIC CITY CONVENTION CENTER)

**170****Transitioning to Proof: Activities That  
Promote Learning from One Another**

Higher Education Session

How do students learn what counts as proof? In this session we share sample student work and video from an inquiry-based transition to proof course. Our purpose is to describe two instructional activities that students reported as most meaningful for helping them learn what counts as proof: a “peer critiquing activity” and a “group proof activity.”

**Sarah K. Bleiler**

Middle Tennessee State University, Murfreesboro

**Jeffrey D. Pair**

Middle Tennessee State University, Murfreesboro

314 (ATLANTIC CITY CONVENTION CENTER)

**171****Using Rubrics and Graphic Organizers  
to Write in Mathematics**

3–5 Session

A major component of the Common Core is to have students explain their thinking. This session will help teachers and students write clear, organized, and detailed responses to mathematical problem solving. We will use components from the writing classroom, such as graphic organizers and rubrics, and adapt them to mathematical writing.

**Kathryn Busbey**

Granby Public Schools, Connecticut

**Kristin Rice**

Granby Public Schools, Connecticut

410 (ATLANTIC CITY CONVENTION CENTER)

**172****Using Student Work to Recognize  
Trends in Prealgebraic Thinking**

9–12 Session

Prealgebra students approach problems in many ways, some of which position them to easily transition to algebraic representations. We will explore typical representations from student work (charts, tables, drawings, etc.) and discuss how to support students to talk about their ideas and representations in ways that support algebraic thinking.

**Valerie Klein**

Drexel University, Philadelphia, Pennsylvania

**Max Ray-Riek**

The Math Forum, National Council of Teachers of Mathematics, Reston, Virginia

420 (ATLANTIC CITY CONVENTION CENTER)

**173** **ew****Algebra Readiness for All: The Critical  
Role of Innovative Technology**

General Interest Exhibitor Workshop

Come learn how IXL, the most widely used math subscription site in the country, is partnering with educators to ensure algebra readiness for all students. Aligned with all 50 state standards, IXL delivers truly differentiated, thoughtfully crafted technologies to engage students and close achievement gaps.

**IXL Learning**

IXL Learning, San Mateo, California

305/306 (ATLANTIC CITY CONVENTION CENTER)

**174** **ew****Transform Teaching and Learning with  
MathXL® for School**

9–12 Exhibitor Workshop

Through online personalized learning, MathXL® for School allows middle and high school teachers to focus on the important aspects of teaching, while students receive an individualized learning experience with immediate feedback, interactive learning aids, and lots of practice. Come preview this exciting mobile-compatible math technology

**Pearson**

Pearson, Boston, Massachusetts

318 (ATLANTIC CITY CONVENTION CENTER)

9:45 A.M.–11:00 A.M.

**175**

## Acting on Student Work Using a Proportional Reasoning Learning Progression

6–8 Workshop

After solving a proportional reasoning task, participants will explore student work examples of that same task. Participants will then work in small groups to place the student work in a learning progression. We will engage in discussions about how to support student learning from transitional reasoning to more efficient proportional strategies.

**Tracy Bettale Watterson**

Agency of Education, Barre, Vermont

**Lara D. White**

Agency of Education, Barre, Vermont

411 (ATLANTIC CITY CONVENTION CENTER)

**176**

## Composing and Decomposing Numbers: Foundation for Fluency

Pre-K–2 Workshop

Develop the foundation for fluency and number sense through quick, engaging number routines and workstation activities using five- and ten-frames, dot cards, rekenreks, and other DIY materials for composing and decomposing numbers. Session includes tips for differentiating the activities and materials that can be used in your classroom tomorrow.

**Donna Boucher**

It's Elementary Math Consulting, Inc., Katy, Texas

313 (ATLANTIC CITY CONVENTION CENTER)

**177**

## Connecting Counting Routines to Computation Strategies

Pre-K–2 Workshop

Learn to plan for and conduct counting routines appropriate for grades K to 2. When conducted daily, these 5–10 minute routines will strengthen your students' number sense and build a broad foundation for flexible computation strategies. We will explore strategies such as open number lines, decomposing, hundreds boards, and mental math strategies.

**Patty E. Smith**

Educational Resources Group, Inc., Charleston, South Carolina

418 (ATLANTIC CITY CONVENTION CENTER)

**178**

## Hands-On Activities for Algebra 1

9–12 Workshop

Come and learn some hands-on activities that can be used for algebra 1 classes. There will be investigations, puzzles, experiments, walk-around-the-room activities, and some algebra aerobics. Participants will receive a plethora of activities to make math more than just a worksheet!

**Gregory S. Fisher**

Mount Tabor High School, Winston-Salem, North Carolina

308/309 (ATLANTIC CITY CONVENTION CENTER)



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FRIDAY

**CORE** Common Core/  
College Career Readiness

**EDU** Developing Educational Environments  
to Build Productive Struggle

**EW** Exhibitor  
Workshop

**FORM** Formative  
Assessment

**MATH** Ensuring Mathematical  
Success for All

**179**

## **Integrating Mathematics with Poetry and Creative Writing**

6–8 Workshop

Nationally known author Tom Palumbo (*Language Arts Thinking Motivators* and *Mathematics Thinking Motivators*) will present 20 activities from his award-winning series. Participants will receive instruction on an immediately ready-to-use activity booklet and access to his content-loaded website.

**Thomas Palumbo**

]The University of the Arts, Philadelphia, Pennsylvania

408/409 (ATLANTIC CITY CONVENTION CENTER)

**180**

## **Let's Physically Explore Math on the Floor!**

3–5 Workshop

In this interactive session, teachers will see the value of exploring math strands using a kinesthetic approach. Many of the Common Core standards will be physically demonstrated on a large 100-square floor grid. The emphasis of the workshop will be in developing a solid sense of number, with the remaining time given to activities in geometry and measurement.

**Wendy E. Hill**

Retired Elementary Teacher, Mississauga, Canada

404 (ATLANTIC CITY CONVENTION CENTER)

**181**

## **New and Preservice Teachers Workshop**

Preservice and In-Service Workshop

Find answers to your questions on topics such as classroom management, parents, motivation, and keeping your sanity. Connect with other new teachers, learn from experienced professionals, and find resources to engage you and your students. You might even win a prize!

**David Barnes**

National Council of Teachers of Mathematics, Reston, Virginia

417 (ATLANTIC CITY CONVENTION CENTER)

**182** **PtA**

## **Strategies Used to Promote Discourse in Math Classrooms**

6–8 Workshop

In many classrooms, students' sitting together in teams does not guarantee effective mathematical discourse. Defending one's position is important, but everyone needs to be heard. Activities will be modeled that encourage students to talk, write, and share ideas. Status is important so some of these activities will address this issue.

**Christine Mikles**

CPM Educational Program, Sacramento, California

421 (ATLANTIC CITY CONVENTION CENTER)

**183**

## **Webb's Depth of Knowledge: What's It Really All About?**

3–5 Workshop

As we move into Core Standards Assessments, the bar is raised and we need to stretch classroom instruction and assessment to Level 3 in Webb's Depth of Knowledge structure. What does this mean? What does this look like? This session will explore levels of DOK and the parameters surrounding different levels of assessment items and how this relates to instruction.

**Robert Jesberg**

Math and Science Consultant, Chalfont, Pennsylvania

Janie Zimmer Research-Based Education, Reading, Pennsylvania

414 (ATLANTIC CITY CONVENTION CENTER)

**184**

## **3 Reasons Kids Don't Know Facts, and How to Help**

Pre-K–2 Workshop

Children have an overreliance on counting, they lack number sense, and the manipulatives we use in the early grades actually hinder students' abilities to progress to more advanced addition strategies. This session will discuss why these three ideas keep kids from being fluent with their addition facts *and* what we can do in the classroom to help.

**Lynn Rule**

Math Consultant, Wheaton, Illinois

**Christina Tondevoid**

Mathematically Minded, LLC, Orofino, Idaho

401 (ATLANTIC CITY CONVENTION CENTER)



9:45 A.M.–11:00 A.M.

**185**

### Everyone Can Start: Nonroutine Problems and the Mathematical Practices

9–12 Workshop

This presentation will showcase “low-floor/high-ceiling” problems that integrate students of all levels into math class. These problems are accessible to students from all levels (low-floor), richly mathematical, and rigorous (high-ceiling). They offer students a way to tap back into their intuitive mathematical ability.

**Geoffrey Enriquez**

New York City Department of Education, Vanguard High School, New York

**Gayle Maslow**

New York City Department of Education, Vanguard High School, New York

419 (ATLANTIC CITY CONVENTION CENTER)

11:00 A.M.–12:00 P.M.

**186**

### Board Hot Topic: Productive Strategies for Engaging Students in Productive Struggle

General Interest Session

In this session, we’ll look at “productive struggle”—what it is, what it isn’t, and how it can help your students. We’ll look at some rich, engaging tasks for each grade band, and we’ll discuss ways to have students experience productive struggle in a positive way in your classroom.

**Cathy Martin**

Board of Directors, National Council of Teachers of Mathematics; Denver Public Schools, Denver, Colorado

**Diane J. Briars**

President, National Council of Teachers of Mathematics, Reston, Virginia

303 (ATLANTIC CITY CONVENTION CENTER)

**187**

### Building Concepts: Ratios, Proportions, and Algebra

6–8 Session

The Common Core standards describe a ratio as associating two or more quantities. What about fractions and percents? How does this perspective relate to ratios in geometry and algebra? Interactive dynamic technology can support this shift in thinking about the fundamental ideas involved in proportional reasoning and help students to make the connection to algebra.

**Gail Burrill**

Michigan State University, East Lansing

415 (ATLANTIC CITY CONVENTION CENTER)

**188** **TECH**

### Cassady’s Problem: Fostering Mathematical Creativity with Technology

9–12 Session

Earlier this year, I was introduced to Paul Lockhart’s *A Mathematician’s Lament*. Taking Lockhart’s message to heart, I asked my ninth-grade daughter to construct a mathematics task that fosters creativity. My conversation with Cassady surprised me. Both she and Lockhart have encouraged me to reconsider the way that we share math with others.

**Michael Todd Edwards**

Miami University of Ohio, Oxford

412 (ATLANTIC CITY CONVENTION CENTER)

**189** **CORE**

### Engaging Activities + Effective Instructional Strategies = Numerically Nimble Students

3–5 Session

Discover ways to efficiently implement the Common Core, particularly its Standards for Mathematical Practice. These engaging activities and strategies promote greater sense making, as all students increase their numeric fluency and proficiency. Selected activities differentiate instruction, infuse algebraic thinking, and enhance students’ reasoning abilities.

**Leigh Childs**

San Diego County Office of Education, California

405/406 (ATLANTIC CITY CONVENTION CENTER)

FRIDAY

**190**

## Get Your Model On: Mathematical Modeling in the K–2 Classroom

Pre-K–2 Session

Is it a noun or a verb? The term *model* is frequently misinterpreted as hands-on, but manipulatives in isolation do not satisfy the expectation of Standard for Mathematical Practice #4: “Model with mathematics.” This session will engage participants in problem-based tasks that showcase the importance of mathematical modeling in the primary grades.

**Graham Fletcher**

Griffin-Spalding County Schools, Georgia

402 (ATLANTIC CITY CONVENTION CENTER)

**191**

**PtA** **EDU**

## Incredible Math Tasks! Supporting Productive Struggle in Learning Mathematics

General Interest Session

In this hands-on session, we will explore how to use worthwhile math tasks to support student’s productive struggle. We will examine student work and videos to explore how tasks, paired with teacher moves and questions, can promote student engagement in the Standards for Mathematical Practice. Leave with 200+ resources you can use Monday morning.

**Bill Barnes**

Howard County Public Schools, Ellicott City, Maryland

**Jenny Novak**

Howard County Public Schools, Ellicott City, Maryland

403 (ATLANTIC CITY CONVENTION CENTER)

**192** **MATH**

## Intervention and Assessment Strategies for Grades 2–5 Students Who Struggle

3–5 Session

With the focus on multitiered systems of support classroom teachers are seeking successful ways to assess and build instructional interventions for students who struggle in learning mathematics. This session includes interventions and assessments that consider multiple representations and strategies for learning number and operations.

**Karen S. Karp**

John Hopkins University, Baltimore, Maryland

**Amy Lingo**

University of Louisville, Kentucky

302 (ATLANTIC CITY CONVENTION CENTER)

**193**

## Turning Your Research into an Article for *MTMS*

6–8 Session

This session will help you think about ways to publish your research in *Mathematics Teaching in the Middle School (MTMS)*. As one of NCTM’s practitioner journals, the articles in *MTMS* are primarily utilized by teachers, teacher leaders, teacher educators, and curriculum specialists. Work with the Editorial Panel to develop your ideas for articles.

**Natasha Murray**

*Mathematics Teaching in the Middle School (MTMS)*, Reston, Virginia

**Rebecca Damas**

Trevor Day School, New York, New York

420 (ATLANTIC CITY CONVENTION CENTER)

**194**

## Vectors and Sound: How They Are Related

Higher Education Session

Explore how sound is represented and stored in vectors, an application dependent on matrix mathematics and technology. Vectors are required to handle large data sets. I will focus on cross-disciplinary critical-thinking methods and experiential learning opportunities for students.

**Susan G. Helser**

Mott Community College, Flint, Michigan

314 (ATLANTIC CITY CONVENTION CENTER)

Interested in **speaking** at a Regional Conference? Submit to the 2016 Regional in Phoenix or Philadelphia at [www.nctm.org/speak](http://www.nctm.org/speak) before December 1, 2015.

11:00 A.M.–12:00 P.M.

**195**

### **Quantitative Financial Literacy (QFL): A College/Career Readiness Advanced Algebra Option**

9–12 Session

QFL is an algebra-rich, applications-oriented, technology dependent third- or fourth-year math course option for students of all ability levels. Selected topics from algebra 2, geometry, precalculus, and probability and statistics are used to model banking, credit, employment, taxes, auto ownership, housing, retirement, investing, budgeting, and more.

**Richard J. Sgroi**

Bedford Central Schools, New York

410 (ATLANTIC CITY CONVENTION CENTER)

**196** **ew**

### **BYOD: Mathspace— Why You’ll Never Grade Math Assignments Again. Seriously.**

9–12 Exhibitor Workshop

Meet Mathspace. You’ve seen it all, right? Adaptive learning? Yep. Handwriting recognition? Hmm. Every math question graded line-by-line? Whoa, that’s new! Students can finally show their work, and get feedback at every step: all auto-graded for you. Bye-bye, multiple choice! BYOD (Bring Your Own Device) to try the award-winning Mathspace live, and ask about a free trial!

**MathSpace**

Mathspace, New York, New York

318 (ATLANTIC CITY CONVENTION CENTER)

**197** **ew**

### **Engage Students, Teachers, and Administrators with RTI Solutions Using Manipulatives**

General Interest Exhibitor Workshop

Experience how Moving with Math provides pre-K–high school RTI solutions! Students are engaged in successful experiences that build their conceptual understanding through concrete-representational-abstract lessons. Teachers love the hands-on lessons, games, and journals that are easy to use. Administrators can easily measure growth through embedded assessments.

**Math Teachers Press Inc.**

Math Teachers Press, Inc., Minneapolis, Minnesota

305/306 (ATLANTIC CITY CONVENTION CENTER)

**198** **ew**

### **New K–5 Math Curriculum for Building Mathematical Thinkers**

General Interest Exhibitor Workshop

Exhibitor Workshop Bridges in Mathematics, second edition, is a comprehensive K–5 curriculum that equips teachers to fully implement the Common Core State Standards in a manner that is rigorous, engaging, and accessible. Join us for an overview of this unique program. Learn more about workplaces, visual models, and putting the mathematical practices into action.

**Math Learning Center**

Math Learning Center, Salem, Oregon

315 (ATLANTIC CITY CONVENTION CENTER)

11:30 A.M.–12:00 P.M.

**199** **PtA**

### **21st-Century Skills in the Mathematics Classroom**

General Interest Burst

Incorporating the Mathematics Teaching Practices from *Principles into Actions* into daily lessons can help all students learn to think critically, collaborate, be creative, and communicate mathematics. This session highlights the connections between the two.

**John A. Carter**

Westlake High School, Austin, Texas

308/309 (ATLANTIC CITY CONVENTION CENTER)

**200** **TECH**

### **Apps for Developing Number Sense**

Pre-K–2 Burst

Develop students’ number sense using a variety of apps that help students to subitize, compose, and decompose numbers, and to use 5 and 10 as benchmark numbers. There are multiple apps for practicing subitizing using dot patterns, finger images, ten-frames, and the math rack (or rekenrek).

**Heidi Hayes**

Old Saybrook Public Schools, Connecticut

**Karen Pasiuk**

Lyme-Old Lyme Public School, Connecticut

421 (ATLANTIC CITY CONVENTION CENTER)





## 201

### **Critical Thinking + Collaboration + Creativity + Communication = 21st-Century Learners**

#### General Interest Burst

Participants will learn strategies on how to incorporate the 21st-century 4C's (Critical Thinking, Creativity, Communication, and Collaboration) into differentiated instructional activities. By using choice boards, teachers will see how simple it can be to create activities that encourages all learners to succeed.

**Julie S. Norflus-Good**

Ramapo College, Mahwah, New Jersey

417 (ATLANTIC CITY CONVENTION CENTER)

## 202

### **Effects of a Summer Bridge Program on College Algebra Pass Rates**

#### Higher Education Burst

This presentation focuses on an online summer bridge program piloted in 2014. The primary goal of the program was to increase the pass rate of college algebra. The program was also designed to help students learn skills like time management, resource usage, and study and technological skills that will benefit them in their college careers.

**Jodi L. Frost**

Indiana State University, Terre Haute

**Eric Graves**

Indiana State University, Terre Haute

**Ellie Pounds**

Indiana State University, Terre Haute

401 (ATLANTIC CITY CONVENTION CENTER)

## 203

### **Math Instructional Coaches: Moving Your School/District Forward**

#### General Interest Burst

Through the lens of two experienced elementary (grades 3–6) math instructional coaches, learn how to use coaches in schools to increase teacher effectiveness and to increase teacher mathematical teaching capacities. Hear what has worked as well as action steps that can be replicated in other schools or districts.

**Kristin Rice**

Granby Public Schools, Connecticut

**Kathryn Busbey**

Granby Public Schools, Connecticut

408/409 (ATLANTIC CITY CONVENTION CENTER)

## 204

### **Reducing Math Anxiety in Preservice Elementary Teachers**

#### Preservice and In-Service Burst

“I dislike math” is a statement I have heard too often from preservice elementary teachers. When I had the opportunity to facilitate an elementary and middle school mathematics methods course, I immediately implemented an action research study to uncover how to reduce math anxiety. This presentation will share results from my action research.

**Johanna S. Barnes**

Wayne State College, Nebraska

419 (ATLANTIC CITY CONVENTION CENTER)

## 205

### **The Math Museum: Common Core Math Centers That Boost Achievement**

#### 3–5 Burst

Picture it . . . Students engaged in their natural element, creative play, all while mastering Common Core State Standards. The Math Museum is a standards-based and differentiated center approach that utilizes creative play and student choice to engage students in standards-based spiral review. The Math Museum is sure to be a hit.

**Jerry Lee Wright**

School Board of Highlands County, Sebring, Florida

418 (ATLANTIC CITY CONVENTION CENTER)

**Join us in 2016:**

**Phoenix, AZ • October 26–28**

**Philadelphia, PA • October 31–November 2**



11:30 A.M.–12:00 P.M.

**206**

## Using Robotics and Game Design to Enhance Computational Thinking

6–8 Burst

This presentation shares pilot-year results of a three-year study supported by the National Science Foundation to improve middle school students' spatial visualization and computational thinking skills through engagement in robotics and game design. Strategies for engaging students in pre-engineering tasks in math classrooms will be shared.

**Joy Barnes Johnson**

University of Wyoming, Laramie

**Alan Richard Buss**

University of Wyoming, Laramie

313 (ATLANTIC CITY CONVENTION CENTER)

**207** **TECH**

## Utilizing Flipped Learning in the K–2 Mathematics Classroom

Pre-K–2 Burst

With the increased focus on student achievement and teacher effectiveness, this session will be taking a look at the flipped learning model in the K–2 mathematics classroom. Learn how this model can support your students' (and parents') understanding of foundational mathematics skills while promoting vocabulary and discourse in the classroom.

**Connie H. Apps**

Wake County Public School System, Cary, North Carolina

404 (ATLANTIC CITY CONVENTION CENTER)

**208**

## What Can We Learn from Research on Problem Posing?

Research Burst

In this session, a summary of results from research on the role of problem posing in mathematics learning will be presented. Examples of productive problem posing will be given, and three instructional recommendations that can improve student learning will be provided.

**Volkan Sevim**

Virginia Commonwealth University, Richmond

414 (ATLANTIC CITY CONVENTION CENTER)

**209** **TECH**

## Desmos + Algebra 1 = Deep Understanding x Fun

9–12 Burst

Learn how we used the online graphing calculator Desmos to make our algebra 1 students look more deeply into linear equations and linear inequalities. Students were able to dive deeper into understanding the “why” behind the concepts. We will provide the projects, samples, and rubrics we used.

**Stacy M. Remphrey**

Unionville-Chadds Ford School District, Kennett Square, Pennsylvania

**Glen Lewis**

Unionville-Chadds Ford School District, Kennett Square, Pennsylvania

411 (ATLANTIC CITY CONVENTION CENTER)

12:30 P.M.–1:00 P.M.

**210**

## A Mathematical Tour of the Grand Piano

General Interest Burst

We've all heard that the piano is mathematical. But where, exactly is all that math? In this NCTM Burst, a piano technician and math teacher will take you through algebra, geometry, algebra 2, trigonometry, and even the math on the complex plane involved in creating the most extensively engineered acoustic musical instrument in common worldwide production.

**Vin Urbanowski**

Academy of Information Technology & Engineering, Stamford, Connecticut

313 (ATLANTIC CITY CONVENTION CENTER)

**211**

## A Penny for Your Thoughts

3–5 Burst

Developing critical thinking skills and problem-solving skills in students. The session will include games, warm-up ideas and strategies, and literature and activities to promote critical thinking skills in students. Educators will participate in a variety of activities that they will be able to incorporate into their classroom.

**Karen Allmond**

University of Texas at Arlington

421 (ATLANTIC CITY CONVENTION CENTER)

FRIDAY

**212** **PtA****Technology Tools to Enhance Instructions of the CCSS**

6–8 Burst

Technology is a great way to engage students in CCSS topics. In this session, you will learn about online resources that help students practice skills, build conceptual understanding, and provide formative assessment data beneficial to all grade levels. Tools specific to middle school and online resources supporting PARCC practice will also be shared.

**Betty Napoli**

Galloway Township Public Schools, New Jersey

419 (ATLANTIC CITY CONVENTION CENTER)

**213****Data, Assessments, and Instruction: Documenting It Comprehensibly and Efficiently**

9–12 Burst

We will demonstrate effective and efficient strategies for documenting qualitative and quantitative data from formative and summative assessments for grade level and remedial classes. We will also discuss communicating the data and the data-based decisions in a manner comprehensible to students, parents, colleagues, administrators, and evaluators.

**Katie Westby**

Brattleboro Union High School, Vermont

**Betsy McEneaney**

College of Education, University of Massachusetts, Amherst

418 (ATLANTIC CITY CONVENTION CENTER)

Mingle, explore,  
and learn in the  
**Exhibit Hall** and  
**NCTM Central!**

**214****Preparing Students for College Readiness: A Sports and Math Course**

9–12 Burst

Many high school students feel math has little relevance and no interest in their lives. This session will look at a math elective that engages students with a topic they enjoy and encourages problem solving and mathematical modeling. Emphasis will be placed on connecting the content and style to approach the Common Core and PARCC.

**Betsy J. McShea**

The Richard Stockton College of New Jersey, Galloway

**Maureen Yarnevich**

Towson University, Maryland

**Judith A. Vogel**

Richard Stockton College – NAMS, Galloway, New Jersey

414 (ATLANTIC CITY CONVENTION CENTER)

**215****The Math and Science of the Battleship New Jersey (BB-62)**

General Interest Session

There are many applications of mathematics aboard the Battleship New Jersey (BB-62), now residing as a museum ship along the Delaware River in Camden, New Jersey. We will explore plane and spherical trigonometry (celestial navigation), matrices (cryptology), geometry (gun rifling and trajectory), topology (knot tying), and fractions (recipes).

**Thomas Walsh**

Kean University, New Jersey

417 (ATLANTIC CITY CONVENTION CENTER)

**216** **FORM****Using Comics for Assessment**

General Interest Burst

This session will describe a summative assessment in which middle school students create a comic strip. A rubric was used to evaluate the students' depth of mathematical understanding displayed in the comic. The presenters will share the assignment, rubric, student work samples, and the effect of cartoons on students' attitude toward mathematics.

**Katie A. Hendrickson**

Athens City Schools, Ohio

**Hoyun Cho**

Capital University, Columbus, Ohio

408/409 (ATLANTIC CITY CONVENTION CENTER)



12:30 P.M.–1:00 P.M.

**217** **TECH**  
**Using iPads in the Math Classroom**

6–8 Burst

Many educational apps exist for the iPad. Learn about the different math apps available for the middle school student. Learn the different ways to use iPads in the classroom, including whole class, small group, partner, and individual work.

**Diane M. Watson**  
Jefferson County Public Schools, Littleton, Colorado  
[404 \(ATLANTIC CITY CONVENTION CENTER\)](#)

**218**  
**WIN Time!**

3–5 Burst

Everyone's a winner with WIN Time! What I Need Time is an intervention program geared around two of the critical professional learning community (PLC) questions: How will we respond when student don't learn? And how will we respond when students have learned? Presenters will share the concept, discussing successes and challenges faced along the way at the elementary level.

**Mark McDonagh**  
Lee County Schools, Fort Myers, Florida  
[308/309 \(ATLANTIC CITY CONVENTION CENTER\)](#)

**219**  
**Supporting Parents with Mathematics through Practitioner Inquiry**

Research Burst

How and why do parents and children work together the way they do on mathematical tasks such as homework and projects? Teachers' investigations, findings, and responsive action steps are shared to guide how we support parents as academic partners. Provided tasks, questions, and inquiry tools help enhance the quality of parent-child communication.

**Regina Marie Mistretta**  
St. John's University, Staten Island, New York  
[411 \(ATLANTIC CITY CONVENTION CENTER\)](#)

**220** **MATH**  
**Universal Design for Education in Mathematics**

General Interest Burst

Neuroscience tells us that the learning needs of students in our classrooms are more heterogenous than we've previously understood (Glass, Meyer, and Rose, 2013.) I will present the basics of how Landmark College faculty employ these principles in our classes, and how you can get started using these tools in your classroom without sacrificing rigor.

**Anita M. Long**  
Landmark College, Putney, Vermont  
[401 \(ATLANTIC CITY CONVENTION CENTER\)](#)

12:30 P.M.–1:30 P.M.

**221** **EDU**  
**Fostering Growth Mindset through Productive Struggle in Conceptual Understanding**

General Interest Session

We, as teachers, tend to be nurturers; we may resort to giving answers, or giving away answers all too soon. When students experience dissonance with problem situations and work together with others who are grappling with the same mathematical misconceptions, they learn to persevere, become problem solvers, and become owners of their own learning.

**Jenny Ray**  
Kentucky Department of Education/Northern Kentucky Cooperative for Educational Services, Cold Spring  
[303 \(ATLANTIC CITY CONVENTION CENTER\)](#)

**222**  
**Generate More Numerically Nimble Students**

Pre-K–2 Session

Discover ways to efficiently implement the Common Core. These engaging activities and strategies promote greater sense making as students increase their fluency and proficiency with number, utilize visual models, and build confidence and competence. Selected activities differentiate instruction and enhance students' reasoning abilities.

**Laura Choate**  
Fallbrook Union Elementary School District, California  
[405/406 \(ATLANTIC CITY CONVENTION CENTER\)](#)

FRIDAY



NATIONAL COUNCIL OF  
TEACHERS OF MATHEMATICS

PREMIER MATH EDUCATION EVENTS

Dallas | February 5–6, 2016

# Effective Teaching with *Principles to Actions*:



Implementing College- and Career-Readiness Standards

NCTM INTERACTIVE INSTITUTES

Grades PK–5 | Grades 6–8 | Grades 9–12 | School Leaders

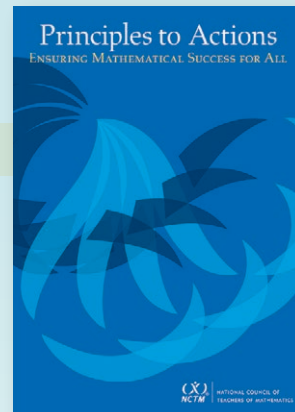
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Save the date for a collaborative knowledge sharing event that features concurrent Institutes tailored to meet your individual professional development needs.

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Ensuring Mathematical  
Success for All*



For more information visit [nctm.org/institutes](http://nctm.org/institutes)



#NCTMinst

**223****“I Fall to Pieces”: Remaining Rational When Working with Fraction Models**

3–5 Session

Fractions are a major component in the Common Core for mathematics in grades 3–5, and we have seen increased emphasis in fraction models, including number lines, area models, and bar models. We will use these models as strategies for developing number sense, and we will see how they are effective steps toward achieving our goal of efficient computation.

**Jennifer G. Axley**

Blount County Schools, Maryville, Tennessee

420 (ATLANTIC CITY CONVENTION CENTER)

**224****Professional Growth, 140 Characters at a Time: Twitter as PD**

Preservice and In-Service Session

This session highlights the social media platform Twitter as a robust space of ongoing, multifaceted professional development. An overview of the technology will be followed by five simple strategies for using Twitter as a professional tool. Great content, conversation, and collaboration are all happening right now on Twitter, so join in!

**Patrick Honner**

New York City Department of Education, Brooklyn, New York

314 (ATLANTIC CITY CONVENTION CENTER)

**225****EDU PtA****Something to Talk About: Productive Talk in the Mathematics Classroom**

3–5 Session

The CCSS mathematical practices require students to make sense of problems, reason abstractly and quantitatively, and construct viable arguments and critique the reasoning of others. At the heart of each of these practices is communication. Mathematics teachers will explore how to implement talk during instruction to deepen student reasoning.

**Le’Vada Gray**

Math Solutions, Sausalito, California

402 (ATLANTIC CITY CONVENTION CENTER)

**226****Teaching the Interrelationship of Measurement and Data**

Pre-K–2 Session

This presentation focuses on how can we integrate literature and measurement in K–2 classrooms. Using literature in mathematics classrooms to teach measurement can help children connect geometric concepts to develop understanding of common units of measurement and to comprehend abstract interrelationship of measurement and data.

**Rupam Saran**

City University of New York, New York

415 (ATLANTIC CITY CONVENTION CENTER)

**227****Tigers, Birds, and Beads: A Population Simulation**

6–8 Session

We demonstrate a series of biology-based, mathematical modeling experiment based on animal species population data gathered from the International Union for Conservation of Nature. It teaches students about the threatened level classifications of species, and it involves students’ collecting data and analyzing linear, quadratic, and exponential regressions.

**Diana Cheng**

Towson University, Maryland

**David Thompson**

Towson University, Maryland

302 (ATLANTIC CITY CONVENTION CENTER)

**228****Using Center Instruction/ Lesson Study to Transform Teaching/ Learning in Math**

General Interest Session

Participants will learn how standards-based math centers and lesson study are utilized as a pedagogical approach in the classroom as a way to assist teachers in reflecting on their instructional practices for the purpose of building teacher practice while deepening students’ mathematical understanding of the Common Core State Standards.

**Stephenie Tidwell**

Plainfield Public Schools, New Jersey

403 (ATLANTIC CITY CONVENTION CENTER)

12:30 P.M.–1:30 P.M.

**229** **PtA**  
**Implementing Rigor for Effective Teaching of Mathematics**

6–8 Session

Rigor involves thinking, reasoning, and depth of knowledge. The Standards for Mathematical Practice strongly promote these; in other words, they promote rigor. Consequently, teachers must consciously develop rigor by attending to the practices. How can mathematics teachers at the middle grade levels facilitate rigor in their classrooms?

**Don S. Balka**  
Retired, Saint Mary's College, Notre Dame, Indiana  
412 (ATLANTIC CITY CONVENTION CENTER)

**230** **FORM**  
**Classroom Challenge: Formative Assessment Done Right!**

9–12 Session

The success of students relies on teachers' ability to evaluate prior knowledge, identify the misconceptions, and modify instruction while teaching and learning are still occurring. The goal of a fairly new type of formative assessment, called MAP Classroom Challenge, is to support teachers in effectively accomplishing this in their classrooms.

**Sandra Wilder**  
Northeast Ohio Medical University (NEOMED), Rootstown, Ohio  
410 (ATLANTIC CITY CONVENTION CENTER)

1:30 P.M.–2:45 P.M.

**231** **MATH**  
 **$2(4^2 + 1) - 9$  Math Intervention Strategies**

3–5 Workshop

This session will allow each participant to engage in 25 math intervention strategies. These strategies will focus on the deficit areas of place value, addition and subtraction, multiplication and division, fractions, and ratios and proportions.

**Tiffany Ratledge**  
Loudon County Schools, Tennessee

**Melissa G Haun**  
Loudon County Schools, Tennessee

408/409 (ATLANTIC CITY CONVENTION CENTER)

**232**  
**Developing Combinatorial Reasoning with Engaging Card and Dice Activities**

9–12 Workshop

Participants will solve several problems with combinations (and permutations). Some of the results will be very surprising. They will then complete two activities that can be used to enhance student learning. The first uses playing cards; the second, dice. Students will become very engaged in the learning process with these activities.

**James R. Matthews**  
Siena College, Loudonville, New York  
411 (ATLANTIC CITY CONVENTION CENTER)

**233**  
**Let's Read a Story and Do Some Math!**

Pre-K–2 Workshop

Attendees will participate and engage on hands-on activities (manipulatives) that will integrate mathematics, science, social studies, and art. The presenters will provide handouts and include all resources used in the presentation.

**Maria Diamantis**  
Southern Connecticut State University, New Haven

**Adam Goldberg**  
Southern Connecticut State University, New Haven

421 (ATLANTIC CITY CONVENTION CENTER)

**234**  
**Magic of Symmetry at Your Fingertips**

6–8 Workshop

Students learn best through manipulation of models—come to discover how to turn geometry into fun and play. You will use mirrors and magnets to make a magical reflected cube and rotate solids in 3-D. You will learn strategies for exploring symmetry of simple and exotic solids to deepen understanding of these basic, yet difficult, concepts.

**Aniceta Skowron**  
Geometro, Ancaster, Canada

308/309 (ATLANTIC CITY CONVENTION CENTER)

**Download Speaker Handouts!**

Visit [www.nctm.org/planAC](http://www.nctm.org/planAC)  
to access available presentation handouts.



**235****Make Math Super Powered:  
Use Games in a Workshop Model**

3–5 Workshop

Students love to play but how do you thoughtfully incorporate math play into your teaching block? Participate in a Math Workshop model and explore engaging activities, games, and puzzles that support the Common Core Standards, particularly their Standards for Mathematical Practice. Engaged, happy learners + Standards for Mathematical Practice = Super Powered Math!

**Manuela Crowley**

Zeno, Seattle, Washington

**Vicki Pettiross**

Zeno, Seattle, Washington

401 (ATLANTIC CITY CONVENTION CENTER)

**236****Representations of Numbers:  
Rectangular Arrays to Quadratic  
Trinomials**

Preservice and In-Service Workshop

Participants will represent numbers as rectangular arrays of counters, rectangular arrangements of Dienes blocks (e.g., base-5 and base-10), areas of rectangles, quadratic trinomials, and rectangular arrangements of algebra tiles. Connections will be made between elementary math and high school algebra in the context of multiplication and factoring.

**Jeanne K. Shimizu**

SUNY Old Westbury, New York

313 (ATLANTIC CITY CONVENTION CENTER)

**237****Seeing Is Succeeding: Developing  
Addition and Subtraction Fact Fluency**

Pre-K–2 Workshop

Fluency is more than memorization of isolated facts. Students need to see connections between facts. They need visual models to help form a “mind picture” that connects to a thinking strategy. This session will demonstrate and utilize powerful visual aids and games that help students master the basic facts—with understanding!

**James Leslie Burnett**

ORIGO Education, St. Charles, Missouri

414 (ATLANTIC CITY CONVENTION CENTER)

**238****Using Manipulatives to Help Students  
Be Successful with Algebra**

6–8 Session

Do your students struggle with algebraic concepts? See how your students can benefit from a visual approach to algebra and learn how virtual and hands-on manipulatives can help promote their understanding of algebraic concepts. Topics include integer operations, solving equations, polynomial expressions, graphing, and more!

**Kevin Dykema**

Mattawan School District, Michigan

417 (ATLANTIC CITY CONVENTION CENTER)

**239****TECH****Using Technology to Make Student  
Thinking Central**

9–12 Workshop

NCTM's *Principles to Actions* encourage teachers to use and connect mathematical representations, facilitate meaningful mathematical discourse, and build procedural fluency from conceptual understanding. This requires teachers to make students' informal methods for solving problems central to their classroom. Technology makes this easier—see how!

**Max Ray-Riek**

The Math Forum, National Council of Teachers of Mathematics, Reston, Virginia

418 (ATLANTIC CITY CONVENTION CENTER)

**240****There's More to Fractions  
Than Just Pieces**

3–5 Workshop

Come prepared to play games that use engaging manipulatives and that help students gain deep understanding of fractions. CCSSM addressed: equivalency, common denominators, decimals, and percent. Games will be tied to strategies to help students gain a better understanding of fractions. Game boards, student samples, and assessment ideas will be provided.

**Allison Riddle**

Davis School District, Salt Lake City, Utah

419 (ATLANTIC CITY CONVENTION CENTER)



1:30 P.M.—2:45 P.M.

**241**

## Middle Years Games for Teaching Linear Equations and Mixed Operations

6–8 Workshop

Come prepared to play games that use cards and dice that focus on linear equations, operations, integers, and problem solving. The games are tied to CCSSM and are great for regular, Title I, DI (developmental intervention), and after-school programs. I will share how I increased computation skills by 17 percent in my middle school classroom. Game boards and student work shared.

**Stephanie Garcia**

St. Louis Catholic School, Missouri

404 (ATLANTIC CITY CONVENTION CENTER)

2:00 P.M.—3:00 P.M.

**242** **TECH**

## Adventures in Flipping a Math Class

9–12 Session

This session will focus on ways I have successfully used a flipped teaching model in my statistics and calculus classes. During the past two years, 100 percent of my statistics students passed the AP exam. I will share all I know about creating both flipped videos and classroom activities designed to optimize the effectiveness of the videos.

**Joel Evans**

Hatboro Horsham High School, Pennsylvania

420 (ATLANTIC CITY CONVENTION CENTER)

**243**

## A Properties-Based Approach to Developing Computational Fluency

3–5 Session

Explore the use of properties of operations as strategies to multiply basic facts, and then link those strategies to alternative and traditional algorithms with the goal of supporting the development of computational fluency. Make sense of how to support this process during instruction through the use of classroom video.

**Juli K. Dixon**

University of Central Florida, Orlando

412 (ATLANTIC CITY CONVENTION CENTER)

**244** **EDU**

## Developing Mathematical Minds and Hearts

General Interest Session

How can we foster our students to develop mathematical minds and hearts? How do we encourage our youngsters with their inquisitive minds to be pattern seekers, problem solvers, and problem posers? This session will share classroom practices that foster a learning environment that encourages the development of mathematical minds and hearts.

**Jennifer Suh**

George Mason University, Fairfax, Virginia

**Padmanabhan Seshaiyer**

George Mason University, Fairfax, Virginia

**Mike Long**

COMPLETE Center at George Mason University, Fairfax, Virginia

303 (ATLANTIC CITY CONVENTION CENTER)

**245**

## Geometric Transformations and Algebraic Functions: Two Sides of a Coin

9–12 Session

In grades 7–12, CCSSM emphasizes both these topics, expecting students to understand transformations as functions. This profound link allows students to create a transformation, drag its input, describe its behavior, restrict its domain to a number line, and end up with a linear function and its Cartesian graph. Leave with student-ready activities.

**Scott Steketee**

21st Century Partnership for STEM Education, Philadelphia, Pennsylvania

**Daniel Scher**

KCP Technologies, New York, New York

302 (ATLANTIC CITY CONVENTION CENTER)

**246** **CORE**

## Magnifying Problem Solving in Early Learning Environments

Pre-K–2 Session

You will learn how to introduce and develop the eight Standards for Mathematical Practice within your early learning environment. The presenters will teach you how to use student-friendly language and demonstrate how to teach the standards through children's literature, hands-on materials, everyday classroom routines, and environmental design.

**Jeanne White**

Elmhurst College, Illinois

**Linda Dauksas**

Elmhurst College, Illinois

410 (ATLANTIC CITY CONVENTION CENTER)

2:00 P.M.—3:00 P.M.

**247**

### **Mathfit: Connecting Math and Physical Fitness Skills**

Pre-K–2 Session

Collaborative planning between administration and math/gym teachers has created a new program that addresses the need to improve fact fluency and the ability to think calmly under pressure, and to increase the number of minutes students are engaged in physical activity during the school day. Wear your sneakers and be prepared to move!

**Eve Sci**

Castlewood School, New York City Department of Education, New York

**Colin Gomes**

Castlewood School, New York City Department of Education, New York

**Jackie Hook**

Castlewood School, New York City Department of Education, New York

415 (ATLANTIC CITY CONVENTION CENTER)

**248** **MATH**

### **RtI in Mathematics: What Really Is Effective?**

General Interest Session

This session highlights a research synthesis of evidence-based practices for RtI in mathematics based on a Practice Guide developed by the U.S. Department of Education. Specific suggestions for determining what aspects of mathematics to teach, and evidence-based instructional strategies for small-group intervention will be demonstrated.

**Russell Gersten**

Instructional Research Group, Los Alamitos, California

**Karen S. Karp**

John Hopkins University, Baltimore, Maryland

403 (ATLANTIC CITY CONVENTION CENTER)

**249**

### **The 24/7 Staff Room**

General Interest Session

Professional learning opportunities and resources are available around the clock, every day of the year, all for free. Learn how to connect with mathematics educator communities and mathematical practices from around the world and, in the process, strengthen online professional sharing for everyone.

**David C. Wees**

New Visions for Public Schools, New York, New York

314 (ATLANTIC CITY CONVENTION CENTER)

**250** **FORM**

### **Using Formative Assessment to Develop Student Understanding**

6–8 Session

Learn how to use the formative assessment process to make sense of the middle grades proportional relationships learning progression. This session will demonstrate how to integrate lesson planning, high cognitive demand tasks, questioning, and effective feedback as part of the formative assessment process.

**Edward C. Nolan**

Montgomery County Public Schools, Rockville, Maryland

405/406 (ATLANTIC CITY CONVENTION CENTER)

**251** **TECH**

### **Teaching Number Sense to the iGeneration**

6–8 Session

This session will examine how to engage, motivate, and teach the iGeneration (the Internet Generation). This session will examine rich problems and tasks that are generated via pictures and video (rather than through words on paper) and demonstrate how such media can lead to deeper discourse, motivation, and mathematical understanding.

**Eric Milou**

Rowan University, Glassboro, New Jersey

402 (ATLANTIC CITY CONVENTION CENTER)

3:15 P.M.—4:30 P.M.

**252**

### **Engaging Students in Problem Solving and Data Analysis**

9–12 Workshop

After giving a high-level overview of some of the topics assessed in one of the domains of the revised SAT, Problem Solving and Data Analysis, we will introduce two fun, classroom-ready activities. The activities can be differentiated to help all students engage in and develop mastery of the content assessed in this domain.

**David Whitcomb**

College Board, New York, New York

**Sonia Wilson**

College Board, New York, New York

414 (ATLANTIC CITY CONVENTION CENTER)

**253** **TECH**

**Going 1 to 1: Mathematics for K–2 Digital Classrooms**

Pre-K–2 Workshop

Discover what it means to implement an elementary mathematics curriculum in a fully digital classroom. Explore technology that supports instruction and learning through digital tools—both for the teacher and for the student.

BYOD: Participants are encouraged to bring your own device, as laptops/tablets will not be provided for this session.

**Beth Minor**

McGraw-Hill Education, New York, New York

404 (ATLANTIC CITY CONVENTION CENTER)

**254**

**Making Personal Finance “Cents-able” through Interactive Notebooking**

9–12 Workshop

In this fast-paced session, teachers will create interactive graphic organizers designed to make personal financial literacy standards for secondary students “cents-able.” See the possibilities unfold before you, and depart with your own mini interactive notebook filled with ideas that are ready to use on Monday.

**Nancy Wisker**

Dinah Zike Academy, Comfort, Texas

408/409 (ATLANTIC CITY CONVENTION CENTER)

**255**

**Modernizing, Motivating, and Mastering Mental Mathematics**

3–5 Workshop

Mental math is a goal of computation. All students must be fluent with number facts and then with examples beyond the facts that are mentally manageable. This session will demonstrate methods that motivate and enable students to achieve this goal for multiplication and division. Games will be prominent in achieving this goal.

**Calvin James Irons**

Mathematics Education Consultant, Brisbane, Australia

308/309 (ATLANTIC CITY CONVENTION CENTER)

**256**

**Small-Group Math Stations: Fraction Action for All**

3–5 Workshop

Experience a differentiated math station structure that allows for independent learning and provides the teacher time to work with students in a small-group setting. Participants will experience fractions activities from CCSSM, but the structure will work with all concepts. The focus of the activities is to develop conceptual understanding.

**Renee’ Smith**

ESSDACK, Hutchinson, Kansas

**Tammy Fellers**

ESSDACK, Hutchinson, Kansas

313 (ATLANTIC CITY CONVENTION CENTER)

**257**

**Stretching Rubber Bands: Concretely Exploring Dilations and Proportions**

6–8 Workshop

During this session, participants will use rubber bands to concretely explore proportional relationships. Participants will be actively involved in an activity that can easily be incorporated into a middle grades or geometry classroom. Come ready to experience a student-centered activity that gets learners actively thinking about these concepts!

**Thomas Coleman**

Baltimore City Public Schools, Maryland

418 (ATLANTIC CITY CONVENTION CENTER)

**258**

**Making “MODEL” Students: Using Math Models That Grow with Students**

Pre-K–2 Workshop

Development of modeling skills is one of the best ways to set your math students up for success! It empowers them with entry points into any problem-solving situation. Attendees will explore using number tracks/number lines, number bonds, and bar diagrams—models that grow with students through each grade of the Common Core Progressions.

**Patti J. Dieck**

Conceptual Learning Associates, Amityville, New York

**Christopher M. Sarlo**

Conceptual Learning Associates, Amityville, New York

411 (ATLANTIC CITY CONVENTION CENTER)



3:15 P.M.—4:30 P.M.

**259**

## Number Line Math for Elementary

3–5 Workshop

Number lines are great for teaching place value, rounding, all operations, and fractions. These CCSS are easily taught through the use of number lines which are easy to find, inexpensive, and versatile to use. This fast paced workshop will help teachers learn meaningful strategies for teaching the above CCSS. Handout with activities provided.

**John Felling**

Box Cars & One-Eyed Jacks, Edmonton, Canada

419 (ATLANTIC CITY CONVENTION CENTER)

**260**

## Using Free and Exceptional NCTM Online Resources to Teach Probability

6–8 Workshop

Use logic, simulation, and mathematical probabilities to reason and defend a choice in game play! Take on the role of a student to use tested and proven NCTM resources to link simulation to experimental vs. theoretical probability. Questions for students, pedagogical recommendations, and accompanying resources will be provided.

**Ann Kong**

National Council of Teachers of Mathematics, Reston, Virginia

401 (ATLANTIC CITY CONVENTION CENTER)

**261**

## Get Real—CAS Graphing Calculators Are Not That Radical!

Preservice and In-Service Workshop

The deployment of CAS graphing calculators while embraced in Canada, Europe, and Australia with positive definitive results have not received wide acclaim in the United States. This hands-on workshop introduces participants to the TI-89 with concrete examples focusing on the positive benefits as well as the challenges faced with their utilization.

**Jay L. Schiffman**

Rowan University, Glassboro, New Jersey

421 (ATLANTIC CITY CONVENTION CENTER)

3:30 P.M.—4:30 P.M.

**262** **MATH**

## 7 Strategies for Supporting Algebraic Thinking with English Language Learners

6–8 Session

Using a series of rich algebraic thinking tasks, we will explore ways to build in language support and use so that all students are able to experience the joy and challenge of generalizations, representations, and simplifications.

**Jennifer M. Bay-Williams**

Board of Directors, National Council of Teachers of Mathematics; University of Louisville, Kentucky

303 (ATLANTIC CITY CONVENTION CENTER)

**263**

## CCSS Coherence and Assessment: An Overview for Higher Ed

Higher Education Session

There are many ways that CCSS-based K–12 reform may inform or impact higher education. In this session we explore two of those ways: the emphasis on coherence to develop ways of thinking and the various corresponding shifts in assessment.

**Ted E. Coe**

Achieve, Washington, District Of Columbia

405/406 (ATLANTIC CITY CONVENTION CENTER)

**264** **FORM**

## Formative Assessment Models to Inform Instruction and Improve Student Achievement

General Interest Session

We will introduce various formative assessment models for designing and implementing tests to produce actionable information. We will discuss how design differs based on assessment purposes and acknowledge the range of potential outcomes produced from formative tests that go beyond an inscrutable number to assist educators in making decisions.

**Chris Domaleski**

National Center for the Improvement of Educational Assessment, Dover, New Hampshire

412 (ATLANTIC CITY CONVENTION CENTER)

FRIDAY

**265**

**Get Smarter! Take the SAT!**

9–12 Session

I studied for and retook the SAT after 29 years and expanded my self-image beyond being a math person, as my verbal score improved by over 200 points. Embracing a cognitive challenge is so unusual that the students thought I was the proctor! If the SAT were viewed like a marathon, it would give academics a boost, as test prep is a teaching and learning tool.

**Robin A. Schwartz**

Math Confidence/College of Mount Saint Vincent, Bronx, New York

302 (ATLANTIC CITY CONVENTION CENTER)

**266**

**Open a World of Possible: Right Books, Right Time**

Pre-K–2 Session

The right book at the right time can spark children’s interest and help them to understand more. The use of books that give numerous chances to connect their thinking and reasoning builds understanding. Come read, play, learn, and walk away with ways to engage your students!

**Jan Scott**

Scholastic, Inc., New York, New York

415 (ATLANTIC CITY CONVENTION CENTER)

**267** **CORE**

**Rich Tasks That Promote the Standards for Mathematical Practice**

Preservice and In-Service Session

Preparing teachers to help students use the Standards for Mathematical Practice (SMPs) requires that they use them in their own problem solving. We will examine a resource for selecting rich tasks for preservice and in-service teachers that illustrate the SMPs.

**Dave I. Kennedy**

Shippensburg University, Pennsylvania

**Judith E. Jacobs**

JEJMath Ltd., Ann Arbor, Michigan

314 (ATLANTIC CITY CONVENTION CENTER)

**268** **CORE**

**The Role and Importance of the Standards for Mathematical Practice**

General Interest Session

The Common Core Standards for Mathematical Practice cut across grade levels and subject areas. They connect and integrate the Common Core math standards. But who should “own” them? Who is responsible to teach and assess them? How will schools know if their students are on track to reach college and career readiness levels in these critical areas?

**David T. Conley**

University of Oregon, Eugene, Oregon

403 (ATLANTIC CITY CONVENTION CENTER)

**269**

**Think, Sketch, Print—3D Printing in Algebra and Geometry**

9–12 Session

Capture the excitement of algebra and geometry and make connections by using 3D printing in the classroom. Engage students in problem-based challenges that develop an in-depth understanding of algebraic and geometric relationships while building STEM interest. Project ideas and software options will be presented.

**Tiffany C. Sakaguchi**

Cave Spring Middle School, Roanoke, Virginia

**Jennifer Sprouse**

Cave Spring Middle School, Roanoke, Virginia

402 (ATLANTIC CITY CONVENTION CENTER)

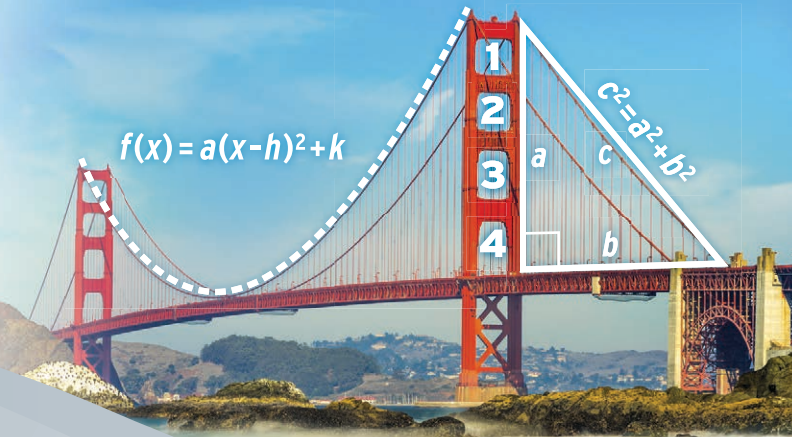
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# 2016 NCTM ANNUAL MEETING & EXPOSITION

April 13-16 • San Francisco



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A handwritten signature in blue ink that reads "Diane J. Briars". The signature is written in a cursive style and is positioned above a thin blue horizontal line.

Diane J. Briars  
President, NCTM

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Robert M. Doucette  
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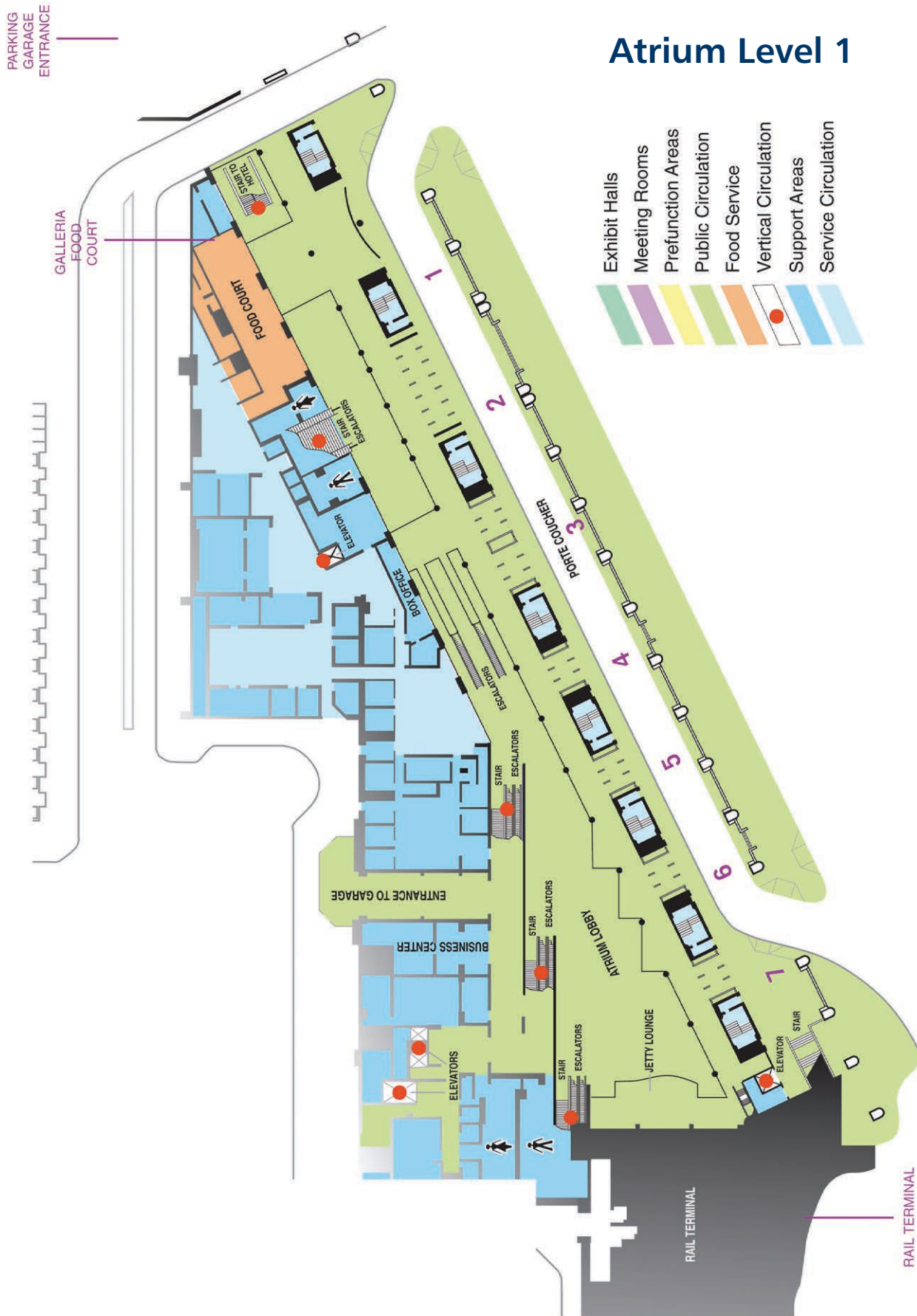
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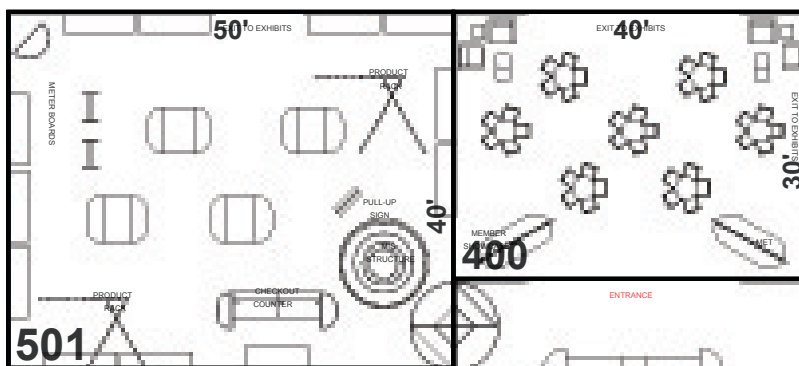
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Evolve to the new HP Prime Wireless Classroom, where you can wirelessly push and pull content between your teacher PC and up to 30 HP Prime Graphing Calculators in a single classroom. Create and edit programs, exam configurations, and data sets on the teacher PC and send polls to and receive them from student calculators. View and project individual student calculator screens to the entire class. Visit HP at booth 427 to explore Prime and see a demo of the HP Prime Wireless Classroom first-hand!

## I

### IXL Learning

#### Booth 326

San Mateo, CA  
855-255-8800

[www.ixl.com](http://www.ixl.com)

IXL is a math practice website for K-12 aligned to state standards and the Common Core. IXL offers unlimited questions in a fun, dynamic format that students love. Plus, teachers can view detailed reports on students' progress and trouble spots—including complete question histories for individuals.

## K

### Kendall Hunt Publishing Company

#### Booth 204

Dubuque, IA  
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[www.kendallhunt.com/prek12](http://www.kendallhunt.com/prek12)

Kendall Hunt develops digital and print mathematics curriculum for grades PreK-12. Offering both complete grade-level and supplemental programs, we focus on helping all students become mathematically proficient and college- and career-ready.

## L

### LearnBop

#### Booth 431

New York, NY  
917-231-1329

[www.learnbop.com](http://www.learnbop.com)

LearnBop is a web-based automated tutoring system for mathematics. Unlike most math learning systems, where a wrong answer leads to students being prompted to drill more similar problems, LearnBop's system is interactive, guiding students to find the answer on their own by breaking the problem into smaller steps. Since every single step is tagged with a mathematical concept, in-depth data on prerequisite knowledge gaps is tracked while students learn, creating powerful insights in real time.

## Learning Wrap-Ups

#### Booth 516

Layton, UT  
801-497-0050

[www.learningwrapups.com](http://www.learningwrapups.com)

Learning Wrap ups, Inc. is the developer and publisher of Learning Wrap ups, Learning Palette, and Learning Palette Online. These unique products have been developed to assist the K-5 student with development of FACT FLUENCY, and CONCEPTUAL UNDERSTANDING of important Math skills. The products of Learning Wrap ups have been utilized in the classroom for over 30 years and have been called the "best learning center products" available.

# Exhibitor Directory

## Level Up Math

### Booth 531

Kissimmee, FL  
347-863-6598  
[www.examtime.com](http://www.examtime.com)

On behalf of Level up Math we would like to welcome all educators and personnel associated with the interest in molding our students into scholars. Level up Math is not only for today's students; it caters to parents, math coaches and even tutors. Where else will you find a one stop shop that covers all strands of mathematics from 5th-8th grade reinforcing everything you learn in class? We guarantee that this resource, to say the least will make your life as a parent/teacher much easier.

## M

### Mangahigh.com

#### Booth 316

London, England, UK  
877-626-4244  
[www.mangahigh.com](http://www.mangahigh.com)

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### Marshall Cavendish Education

#### Booth 413

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[www.mceducation.us](http://www.mceducation.us)

Marshall Cavendish Education is a global provider of holistic education curricula that help teachers become facilitators and students to be critical thinkers. The company's products are published in 11 languages, in more than 50 countries, and are used by grades K-8 educators and students. Marshall Cavendish Education is revolutionizing learning and teaching with the Singapore Math® Approach, which uses the concrete, pictorial and abstract (CPA) learning progression.

## Math Teachers Press

### Booth 200

Minneapolis, MN  
800-852-2435  
[www.movingwithmath.com](http://www.movingwithmath.com)

Provides PreK-12 formative assessment & conceptual instruction using concrete manipulatives with research based strategies & proven results. Includes the 4 essential elements of RTI: screening, decision making, explicit instruction, progress monitoring. Instruction integrates the Concrete-Representational-Abstract (CRA) pedagogy with scripted lesson plans providing embedded PD. Objectives are correlated to state & national standards. Proven achievement gains. Optional Web-Based Technologies.

## Mathspace

### Booth 608

New York, NY  
718-510-2582  
[www.mathspace.co](http://www.mathspace.co)

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## Matific

### Booth 513

New York, NY  
646-259-3229  
[www.matific.com](http://www.matific.com)

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## McGraw-Hill Education

### Booth 521

Columbus, OH  
614-430-4482  
[www.mheonline.com](http://www.mheonline.com)

McGraw-Hill Education is the digital learning experiences company intent on changing the world of education. Drawing on its rich heritage of educational expertise, the company offers highly personalized learning experiences that improve learning outcomes around the world. The Company has offices across North America, India, China, Europe, the Middle East and South America, and makes its learning solutions available in more than 60 languages.

## MOEMS

### Booth 530

Bellmore, NY  
516-781-2400  
[www.moems.org](http://www.moems.org)

Math Olympiads is a not-for-profit corporation dedicated to stimulating enthusiasm, fostering creativity and strengthening intuition in mathematical problem solving. Through the use of five monthly contests, teachers and teams of up to 35 students explore and review mathematical concepts while developing flexibility in solving non-routine problems. Certificates, medals or trophies are awarded to all participants. Visit our booth for information, sample problems and prizes.

## N

### Nasco

#### Booth 526

Fort Atkinson, WI  
920-563-2446  
[www.eNasco.com](http://www.eNasco.com)

Nasco is proud to supply all the materials necessary for successful hands-on math programs. We have the latest mathematics teaching aids, supplies and equipment for elementary, middle school, and secondary math programs. Nasco has products that target the state standards and STEM initiatives that engage 21st Century Learning. We are able to supply custom math kits to meet the individual needs of educators.

## NextLesson

### Booth 509

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[www.nextlesson.org](http://www.nextlesson.org)

NextLesson connects learning to the real world. We offer 5,000 K-12 resources that engage students through topics they love, such as books, movies, sports and technology, and provide students with opportunities to develop and apply critical thinking skills in real world contexts. NextLesson resources are easy to use and adaptable for any classroom environment. They are designed by teachers and aligned to the Common Core and other state standards. Stop by to learn about our trial program!

## O

### Origo Education

#### Booth 318

Earth City, MO  
314-475-3061

[www.origoeducation.com](http://www.origoeducation.com)

ORIGO Education covers all facets of elementary mathematics education: from traditional printed products to digital/interactive resources and professional learning. ORIGO Stepping Stones (aligned to CCSS) delivers a world-class mathematics program that seamlessly blends digital and print materials. ORIGO is committed to excellence by creating products that inspire and empower teachers & students. Our diverse selection of products bring a renewed enthusiasm to students' learning experiences.

## P

### Pearson

#### Booth 512

Boston, MA  
800-848-9500

[www.PearsonEd.com](http://www.PearsonEd.com)

As the leading education company, Pearson is serious about evolving how the world learns. We apply our deep education experience and research, invest in innovative technologies, and promote collaboration throughout the education ecosystem. Real change is our commitment, and its results are delivered through connecting capabilities to create actionable, scalable solutions that improve access, affordability, and achievement. For more information, visit [www.pearsoned.com](http://www.pearsoned.com).

## R

### Reasoning Mind

#### Booth 515

Houston, TX  
832-255-2903

[www.reasoningmind.org](http://www.reasoningmind.org)

Reasoning Mind is a nonprofit dedicated to providing a first-rate math education for every child. Reasoning Mind has created an online learning platform complete with an internationally proven curriculum that fully engages students. Teachers receive access to a user-friendly data and reporting tool as well as a vast catalog of professional development courses. Reasoning Mind provides Core Curriculum, Ancillary Curriculum, and Common Core Assessment Readiness Materials for 2nd-6th grade.

### Renaissance Learning

#### Booth 412

Wisconsin Rapids, WI  
715-424-3636

[www.renaissance.com](http://www.renaissance.com)

Daily and periodic progress-monitoring assessments provide teachers with vital information about each student's math-skills development by combining Renaissance Learning™ software, such as Accelerated Math™, Accelerated Math Fluency™, and STAR Math™, and classroom-proven best practices. The result: dramatically improved math skills for Grade-1–12 students.

## S

### SingaporeMath Inc.

#### Booth 421

Tualatin, OR  
503-557-8100

[www.SingaporeMath.com](http://www.SingaporeMath.com)

Singapore Math Inc. is a company dedicated to bringing the highest quality educational resources to the US and Canada. These resources include a range of selected core curricula and supplemental titles. We welcome you to come by Booth 421 to peruse our Singapore Math® books and to learn more about the Singapore approach to teaching and learning mathematics.

### Suntex International/ First in Math

#### Booth 314

Easton, PA  
610-253-5255

[www.firstinmath.com](http://www.firstinmath.com)

Now You Can Energize Every Child to Learn. Love & Live Math™ First In Math® harnesses the power of digital gaming to engage your students and channels that power to build a core academic skill. Online practice reinforces a range of proficiencies, from addition to complex algebra. Guide your students by suggesting games that connect with every phase of their development and observe them create their own momentum. Includes actionable data about student progress and a family-involvement feature.

## T

### TenMarks Education, An Amazon Company

#### Booth 223

Burlingame, CA  
415-305-7211

[www.tenmarks.com](http://www.tenmarks.com)

TenMarks, an Amazon company, develops an innovative web-based mathematics curriculum program aligned with the new math standards that is used by students and teachers across in thousands of districts across the country. Designed by teachers for teachers, TenMarks knows that students achieve greater success when they're individually motivated, engaged, and nurtured.

### Texas Instruments

#### Booth 209

Dallas, TX  
214-567-6409

[www.education.ti.com](http://www.education.ti.com)

TI provides free classroom activities that enhance math, science and STEM curricula, technology that encourages students to develop a deeper understanding of concepts, and professional development that maximizes your investment in TI technology. TI offers handhelds, software, apps for iPad®, and data collection technology, designed to promote conceptual understanding, and formative assessment tools that gauge student progress. Visit [education.ti.com](http://education.ti.com).

### The Learning Carpet – TLC, Inc.

#### Booth 522

Huntsville, ON, Canada  
705-789-8912

[www.thelearningcarpet.com](http://www.thelearningcarpet.com)

The Learning Carpet (6' square) enables teachers to more effectively teach math and language concepts through the integration of body movement and language development. On the carpet, children have opportunities to play, discover, learn and understand concepts. As a result they are able to articulate and demonstrate their learnings. Look for Wendy Hill's interactive workshop, 'Let's Get Physical -with Math on the floor'. Teachers will leave this interactive session with multiple practical ideas.

### The MarkerBoard People

#### Booth 323

Lansing, MI  
800-379-3727

[www.dryerase.com](http://www.dryerase.com)

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# Exhibitor Directory

## The Math Learning Center

### Booth 317

Salem, OR  
800-575-8130  
[www.mathlearningcenter.org](http://www.mathlearningcenter.org)

The Math Learning Center (MLC) is a nonprofit organization serving the education community. Our mission is to inspire and enable individuals to discover and develop their mathematical confidence and ability. We offer innovative and standards-based curriculum, resources, and professional development. Our products and services are used by educators throughout the United States and in many international locations.

## Triumph Learning

### Booth 416

New York, NY  
859-552-5765  
[www.triumphlearning.com](http://www.triumphlearning.com)

Triumph Learning, LLC, is a leading educational content publisher of print and digital K–12 resources and standards-aligned instructional materials, serving over 400,000 teachers and 6 million students. Triumph Learning offers a mix of interactive digital tools and innovative student texts with products such as Coach, Waggle, and Buckle Down.

## W

## Western Governors University

### Booth 511

Salt Lake City, UT  
385-428-1636  
[www.wgu.edu](http://www.wgu.edu)

The Teachers College at Western Governors University offers regionally, nationally, and NCATE accredited, online competency-based master's degrees in mathematics education. As a student, you'll enjoy modest tuition rates, unbelievable flexibility, and unmatched student support. Scholarships and financial aid are available.

## Woot Math

### Booth 520

Boulder, CO  
303-449-6284  
[www.wootmath.com](http://www.wootmath.com)

Woot Math is a hands-on approach to teaching fractions, decimals and related concepts for grades 3-7. Woot Math's NSF-funded research proves that its adaptive technology significantly improves learning outcomes. The instructional content is tailored to meet each student's personal needs and is interleaved with scaffolded problems designed to build conceptual understanding. Woot Math is proven to engage students with an intuitive and interactive experience on iPad, Chromebook, & Web.

## Y

## You Can Do The Rubik's Cube

### Booth 312

Danvers, MA  
978-768-7674  
[www.youcandothecube.com](http://www.youcandothecube.com)

Unlock the secret! Challenge all your students to solve the Rubik's Cubes and enrich STEM, STEAM and 21st Century skills. We provide all the resources needed to engage your students with a new enrichment activity. No purchase necessary! For a limited time and for use through May 2016, while supplies last, we offer free shipping (to/from) for our Lending Library sets, use code NCTMFR16 and apply at our site.

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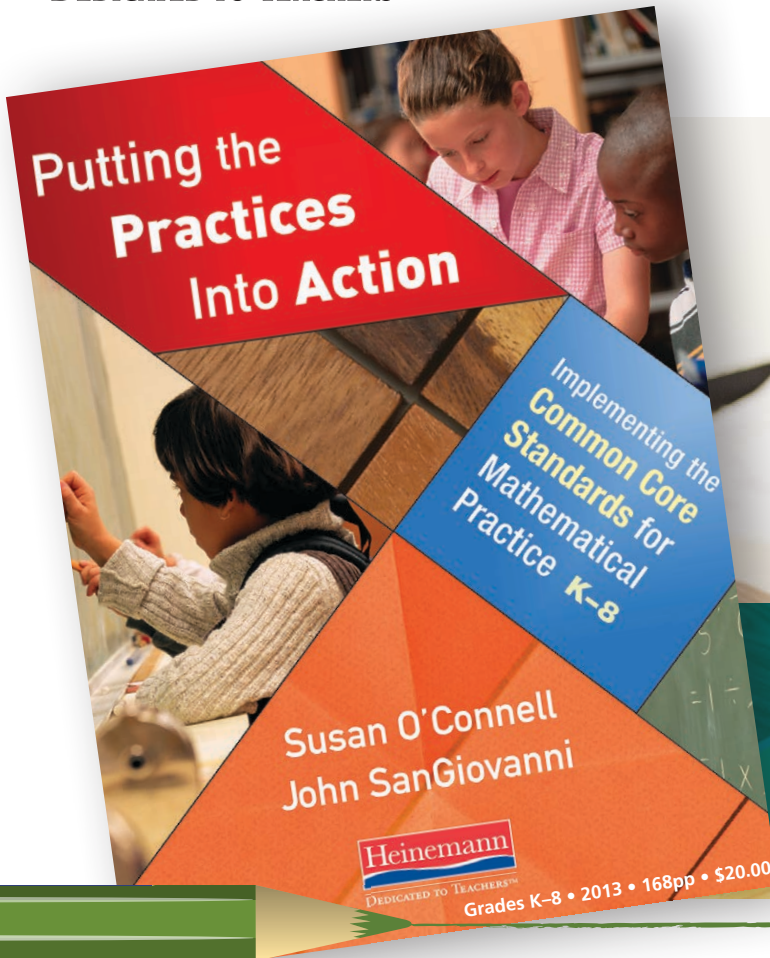


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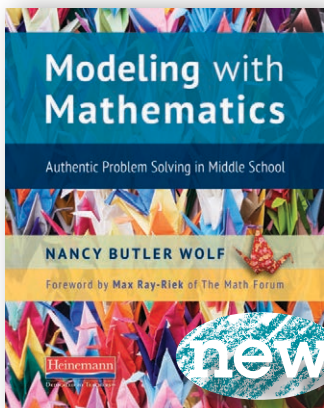


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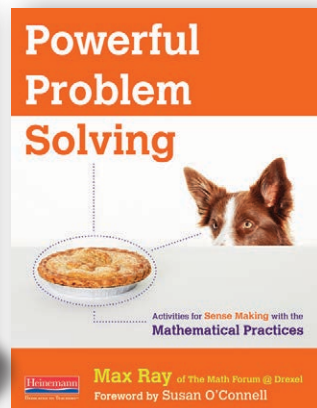


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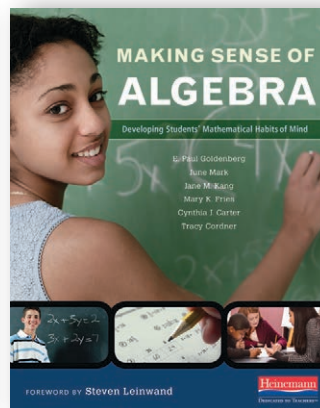
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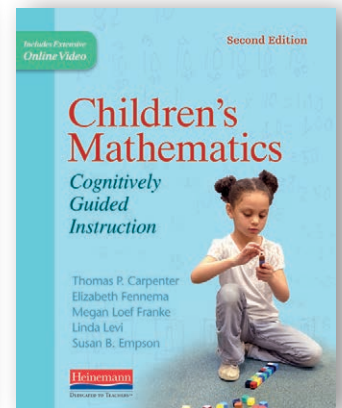
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