



NATIONAL COUNCIL OF  
TEACHERS OF MATHEMATICS

# 2014 NCTM REGIONAL CONFERENCE & EXPOSITION

Houston • November 19–21

THE NATION'S PREMIER MATH EDUCATION EVENTS

See Valuable  
**COUPONS**  
beginning  
page 93

# Program Book



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## 2014 NCTM REGIONAL CONFERENCE & EXPOSITION

Houston • November 19–21

Advertisers Guide . . . . .	88
Coupons . . . . .	93
Affiliates . . . . .	76
Apps . . . . .	7
Certificate of Attendance . . . . .	73
Committees . . . . .	79
Exhibits . . . . .	5
Directory . . . . .	82
Exhibit Hall Floor Plan . . . . .	81
Exhibitor Workshops . . . . .	7
First Aid . . . . .	5
Floor Plans . . . . .	80–81
General Information . . . . .	7
Information Booth . . . . .	5
Membership Application . . . . .	75
NCTM Board of Directors . . . . .	79
NCTM Central . . . . .	7
Bookstore . . . . .	7
Member Services . . . . .	7
Mathematics Education Trust (MET) . . . . .	7
Networking Lounge . . . . .	7
Online Conference Planner . . . . .	7
Presentation Handouts . . . . .	7
Program Information . . . . .	3
Opening Session . . . . .	10
Thursday Presentations . . . . .	11
Friday Presentations . . . . .	43
New and Preservice Teachers Workshop . . . . .	3
Regional Conference Overview & Orientation . . . . .	3
Program Updates . . . . .	3
Strands . . . . .	4
<i>Principles to Actions</i> Presentations . . . . .	6
Types of Presentations . . . . .	3
Registration . . . . .	5
Speaker Index . . . . .	89
Sponsors . . . . .	78

### HOSTS

Texas Council of Teachers of Mathematics (TCTM)  
 Central Texas Council of Teachers of Mathematics (CTCTM)  
 Rio Grande Valley Council of Teachers of Mathematics (RGVCTM)

### MEETING FACILITY

All Conference presentations will be held at the George R. Brown Convention Center. See pages 80–81 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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Some speakers on this program have elected to print their e-mail addresses as a means for individual correspondence with conference attendees. Unsolicited commercial e-mail or unsolicited bulk e-mail, whether or not that e-mail is commercial in nature, is expressly prohibited. Any use of e-mail addresses beyond personal correspondence is not authorized by NCTM.

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 Houston!



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We are so excited to have you join us in this vibrant city. The Lone Star State is known for its hospitality and Houston, America's fourth-largest city, has much to offer every visitor. We have worked hard to bring the best possible speakers to you. Whether you want activities for the classroom, a chance to investigate new pedagogies, a deeper understanding of mathematics, or time to network with colleagues, this conference will meet your needs. From an astronaut to a children's book author, we have a variety of top-notch speakers to pique your interests. Many of the keynote speakers are still in the classroom, teaching students every day. Learn from their practice or confirm your own. We want your experiences to provide you with the tools and resources you need to make your job one that you are happy with for years to come.

While you're visiting Houston, don't forget to see the fabulous museums and taste a variety of cuisines in the nearby downtown restaurants. There is art, there is science, and there is theater, all waiting for you in Houston! We hope that you have fun, learn a lot, and return home energized for the rest of the year.

Finally, we want to thank all our speakers, committee members, and the many volunteers that have helped us these past months to prepare and present this conference. Their time and expertise is invaluable, and their donation of both will not be forgotten.



**Cynthia L. Schneider**  
*Program Committee Chair*  
*Schneider Consulting*  
*Austin, Texas*



**Paul Gray**  
*Volunteer Committee Chair*  
*University of Texas at Austin*  
*Houston, Texas*



The NCTM 2014 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.  
320 AD

## Regional Conference Overview & Orientation

Whether you are new to NCTM or a seasoned veteran, every conference has something new for everyone! Hosted by members of the Board of Directors, this session will help you 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, 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.  
362 BCEF

## 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.

**Gallery Workshops** (75 minutes) are set with round tables for hands-on work and have additional gallery seating around the perimeter of the room. The gallery participants will receive the print materials and observe the workshop in a fashion similar to that of a classroom observer.

**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 theatre style for at least 100 people. Exhibitors showcase their products and services away from the Exhibit Hall. Look for the symbol **EW** 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 Updates

Don't forget to pick up your copy of the Program Updates, which includes speaker and presentation updates, and additional exhibitor workshop listings. Program Updates are available in the Registration Area.

# Program Information

## Focus Strands

### INTEGRATING THE CONTENT AND PRACTICE STANDARDS FOR MATHEMATICS **CP**

The Common Core State Standards for Mathematics include the standards for content and the standards for practice at each grade level. The Standards for Mathematical Practice should guide and support the students' interaction with the content to help students learn the essential skills and underlying concepts needed to be successful at each grade level. We need to integrate these two corresponding and connected sets of standards as we teach mathematics in our 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
8	Enriching Geometry/Measurement Content by Focusing on the Mathematical Practices
45	Ensuring Equity in Access for Newcomers
57	Opening Up and Repacking Tasks to Include the Practice Standards
52	Primary Math Journals
58	Understanding Mathematics: Integrating Content, Practices, and Language
123	Integrating the Content and Practice Standards for Mathematics
151	Math Talks to Implement the Standards of Mathematical Practices
171	Structure and Regularity in Repeated Reasoning in High School Mathematics
194	What Is Math Modeling in a High School Classroom?

### TACKLING RATIONAL NUMBERS K–8: NUMBER RELATIONSHIPS FROM COUNTING TO RATIOS **RN**

The sessions in this strand will help teachers explore how to help their students develop a deeper understanding of rational numbers, specifically fractions and decimals. Even though rational numbers are an integral component of learning about the number system in upper elementary and middle schools, the foundation begins in kindergarten with counting and comparing whole numbers. Children in the primary grades explore patterns and relationships of progressively larger whole numbers as they build an understanding of the base-ten system. With a deep understanding of whole numbers, children in the upper grades can explore relationships inherent in fractions and decimals, deepen their understanding of computation and problem solving with rational numbers and apply their understanding of rational numbers to explore concepts in ratio and to use proportional reasoning.

#### Strand Sessions

Session #	Session title
9	Fractions! Teaching Developmentally
27	Children's Fractional Knowledge
40	Connecting the Dots between Number Sense and Computational Fluency

- 55 Responsive Teaching in Elementary Mathematics: The Case of Fractions
- 90 New Longitudinal and Instructional Research on Fractions
- 116 Summing It Up! Debriefing the Mathematics Lesson
- 166 Equal Sharing Problems and Middle Grades Students' Solution Strategies
- 188 Examining Operations with Fractions Using Words, Diagrams, and Manipulatives
- 237 Supporting Learning of Foundational Fraction Ideas and the Mathematical Practices
- 256 Building Powerful Numeracy: Fractions and Ratios
- 272 Developing Fraction Number Sense Using Benchmarks

### PROBABILITY AND STATISTICS FOR SECONDARY GRADES (6–12) STRAND **PS**

Understanding statistics and its underpinnings in probability is becoming an increasingly important skill in our technology and data-driven society. Educational standards, particularly those set forth by the Common Core, reflect this increased need for statistical literacy among our students. The sessions within this strand address the need for professional development for teachers and present engaging activities that promote and enhance the statistical thinking of students.

#### Strand Sessions

Session #	Session title
20	Activities for Learning Statistics in Middle Grades
95	LOCUS: A Tool for Assessing Statistical Reasoning in the CCSS
96	Moneyball in the Classroom: Using Baseball to Teach Statistics
117	Standard(s) Statistics: Engaging with CCSS Mathematical Practices and Statistical Content
156	Making Sense of Regression: From Common Core to AP Statistics
158	Equity Connections with High School Probability/Statistics Content
193	Making Sense of Inference: From Common Core to AP Statistics
242	Ruling Out Chance

### EQUITY, CULTURE, AND SOCIAL JUSTICE STRAND **EQ**

The changing racial and ethnic demographics within the United States, and particularly in the Gulf Coast region, present exciting and rich opportunities for exploration in the field of mathematics education. Sessions in this strand recognize this diversity and focus on the unique intersections of mathematics content and student learners within their racial, cultural, linguistic, and socioeconomic communities.

These sessions stay close to the lived experiences of learners from diverse social contexts while addressing a variety of topics, including how to leverage the deep funds of knowledge that students bring into the classroom, as well as how to create classroom environments that foster robust mathematical identities in which learners, irrespective of race, class, or linguistic background, come see themselves as competent doers and knowers of mathematics.

Participants attending sessions in this strand can also explore classroom mathematics as a sociopolitical tool for critique and empowerment—investigating teaching mathematics for social justice, in addition to mathematics as a culturally specific tool by exploring the field of ethnomathematics. Teaching strategies for second-language learners will be included in this strand in recognition of the fact that language issues are uniquely intertwined with issues of equity, culture, and social justice. Additional topics within this strand include culturally relevant pedagogy and curricula, and creating opportunities to learn in classroom settings.

## Strand Sessions

Session #	Session title
3	Making “It” Matter: Providing Access to Powerful Mathematics
16	Mathematics and Play: Promoting Learning and Relationships in Diverse Classrooms
24	Narrowing Participation Gaps in Secondary Mathematics Classrooms
28	Listening to Unheard Voices: Children’s Responses to Standardized Test Items
38	Teaching Math to English Learning Students
73	Attending to Equity and Identity in Secondary Mathematics Classrooms
108	Math for Social Justice in the Real World
118	Theory and Activities around Math for Social Justice: An Introduction
163	Math Ideologies: How Classroom Experience Influences Students’ Ideologies about Fractions
201	Power Plays: The Construction of Student Authority during Collaborative Problem Solving

## 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/plan](http://www.nctm.org/plan).
- Become familiar with the layout of the George R. Brown Convention Center by reviewing the floor plans on pages 80–81.
- Visit the **NCTM Bookstore** in NCTM Central for the latest NCTM educational resources and **Member Services** in NCTM Central to learn more about how NCTM can help you professionally and 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

Children under age 16 will not be permitted in the Exhibit Hall. We appreciate your understanding and cooperation. Children 16 years and over will need to register as nonteaching guests. To register a nonteaching guest, please visit Registration.

## Information Booth

The NCTM Information Booth will be in the Convention Center. Friendly staff can assist you with directions and local information, from transportation and historical sites to 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 George R. Brown Convention Center Security.

## First-Aid Station

There will be a first-aid station at the George R. Brown Convention Center during the NCTM conference. If you need medical services while in Houston, 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 2014 Regional Conference & Exposition. 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. 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 page 81.



# General Information



## Principles to Actions: Ensuring Mathematical Success for All

### NCTM'S NEW SIGNATURE PUBLICATION

NCTM continues its tradition of mathematics education leadership by defining and describing the principles and actions that are essential to strengthen mathematics learning and teaching for all students. *Principles to*

*Actions* offers guidance to teachers, specialists, coaches, administrators, policymakers, and parents. Building on NCTM's *Principles and Standards for School Mathematics*, this document presents six updated Guiding Principles for School Mathematics and eight essential Mathematics Teaching Practices.

**Be sure to check out these sessions that address one or more of the teaching practices and/or guiding principles for mathematics education described in *Principles to Actions*.**

### THURSDAY, NOVEMBER 20


Session #	Session title
4	Overcoming Barriers: Making Mathematics Work for All
11	Achieving College Readiness for English Language Learners
14	Animation and Mathematics: What They Share in Common
18	Fraction (or Fractured?) Understanding
20	Activities for Learning Statistics in Middle Grades
22	You Gotta Know When to Fold: Paper Folding and Geometry!
24	Narrowing Participation Gaps in Secondary Mathematics Classrooms
30	National Assessment of Educational Progress: A Treasure Trove of Mathematics Problems
31	Great Early Math Attitudes = Later Successful Math Learners!
33	Learning What Your Students Know about Multiplication and Division
38.3	Using Technology to Reason Mathematically
39	Shuffling into Math: Primary Games for the Common Core
40	Connecting the Dots between Number Sense and Computational Fluency
53	More or Less: Developing the Concepts of Comparison
56	Singin' and Signin' Teaches the Way Kids Learn!
60	1:1 iPad Initiative in Mathematics
68	Making Math Cool! with "The Rappin' Mathematician"
71	Three Models to Preview Calculus in Grades 6 to 11
72	Two Birds, One Stone: Transformations, Functions, and the Common Core
81	Pythagoras: What Were You Thinking?
86	Developing a Research-Based Practitioner for Today's Classrooms
93	The Language of Mathematics: English Language Learners Talk about Math

- 97 Realizing the Development of Mathematical Practice in Higher Education
- 110 Modeling Problem-Based Learning for Preservice Teachers
- 120 Does One Lesson Make a Difference?
- 125 Linking the Learning: Domino Games for Upper Elementary
- 131 Delving Deeper with the Pythagorean Theorem
- 138 President's Session: Turning College and Career-Ready Standards into Student Learning: What It Takes
- 140 Four Types of Addition Facts That Help Develop All Others

### FRIDAY, NOVEMBER 21

Session #	Session title
157	Avatars: Where Mathematics Meets Audio and Video
160	Building a Solid Foundation in Number Sense
161	Building Links between Addition and Subtraction: Concepts and Number Facts
164	A Clever Approach to Teaching and Solving Word Problems
173	The 5 Elements of Effective Thinking through Mathematics
177	Math Rocks: Guided Math Instruction in Action!
178	Mathematics Instruction and Assessment: "Seeing" the Connection
187	Progression of Fractions in Grades 3–5
188	Examining Operations with Fractions Using Words, Diagrams, and Manipulatives
190	What's the Chance of That?!?
203	Understanding Linear Functions Using Manipulatives
207	What Preservice Elementary Teachers Need to Learn about Fractions
226	Design & Build Your Dream House
228	Using Robots to Teach Math
229	A Statewide Project to Provide Mathematics Professional Development Resources
230	Increase Math Talk to Increase Engagement and Student Achievement!
235	Using Student Growth Data to Improve Math Instruction
238	The Area Model, through the Years!
244	Board Hot Topic: Assessing Your Assessment Practices: Do They Measure Up to Support Student Learning?
247	Work Stations 101
248	Fractions: Choosing the Best Model to Develop a Concept.
255	Investigating Released AP Calculus Questions for Grades 6 through 10.
270	Angling for Understanding
271	Folding Your Way to Understanding Fractions
274	Designed for Learning: Using a Studio Model to Foster Problem Solving
276	An Innovative, Practical Approach to Formative Assessment Using Student Work
277	Closure: Making Every Minute Count
281	Project-Based Learning: Engage and Assess Your Students Authentically
285	Fair Is Fair: Meeting the Needs of Your Gifted Students

## 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 the Regional Conference's every aspect. 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.

## Presentation Handouts

Attendees can access available electronic presentation handouts through the conference app and online planner. Handouts will be available until March 2015.

## 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/plan](http://www.nctm.org/plan) to check it out.

## NCTM App



When you return home, don't forget to download NCTM's Android or iOS app for free. The NCTM app gives users easy, efficient access to timely NCTM information throughout the year—from updates on new publications and best sellers to the latest information on upcoming conferences and professional development opportunities. Users can be up to the minute on NCTM activities, teaching tips, and classroom resources. The conference app also includes Facebook and Twitter feed updates. Visit [www.nctm.org/nctmmobile](http://www.nctm.org/nctmmobile) for more information and to download the app.

## NCTM Central

Check out NCTM Central. This exciting area 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 a longtime 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 on-site and receive a free Boston Annual Meeting T-shirt! While supplies last.
- 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 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 Texas 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 Texas 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 Texas are not valid for this Regional Conference.*

- 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!

## **MathBuilders:** A supplementary math program designed for young braille users in grades K-3.

**MathBuilders** is separated into eight units by content standards and grade level. This allows the teacher to focus on specific standards or provide remedial material for individual students.

### **Each Unit includes:**

- Teacher's guide with lesson plans
- Student worksheets
- CD-ROM with General Guidelines for Teaching Math to Young Braille Users
- Dozens of manipulative items



**Unit 1: Matching, Sorting, and Patterning**



**Unit 5: Measurement and Estimation**



**Unit 6: Geometry**



**Unit 7: Fractions, Mixed Numbers, and Decimals**



**Unit 8:  
Data Collection, Graphing,  
and Probability/Statistics**

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## Highlight

Opening Session (Presentation 1): An Astronaut's View of Education: A Call to Action

## Icon

## Presentation Numbers

 Major Speakers

1



## 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)



## Twitter

Want to stay informed? Follow us!  
[www.twitter.com/nctm](http://www.twitter.com/nctm)  
#NCTMHouston

## 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

MAJ



## An Astronaut's View of Education: A Call to Action

(General Interest) Session

Of the ten fastest growing occupations, eight are science, math, or technology-related. My mission is to ensure that students are prepared in math and science and won't be left behind in today's world. In 1998, I founded the Harris Foundation to serve America's youth and their communities in the areas of education, health, and wealth. I am STEM.

**Bernard A. Harris**

The Harris Foundation, Houston, Texas

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## Highlights

- Regional Conference Overview & Orientation, 2
- Rethinking the Trigonometric Functions through Technology, 13
- Great Early Math Attitudes = Later Successful Math Learners!, 31
- Minding Mindsets in Middle School Mathematics, 34
- Mathematical Rigor through Core Practices and Classroom Games, 43
- New and Preservice Teachers Workshop, 50
- Mathematical Habits of Mind: Helping Students Become Doers of Mathematics, 51
- Fake World Math: Why Modeling Goes Wrong (And How to Get It Right), 112
- President's Session: Turning College and Career-Ready Standards into Student Learning: What It Takes, 138
- Good Questions That Promote Student Understanding, 141

## Icon

## Presentation Numbers

<b>CP</b> Integrating the Content and Practice Standards for Mathematics	8, 45, 52, 57, 58, 123
<b>EQ</b> Equity, Culture, and Social Justice	3, 16, 24, 28, 28, 73, 108, 118
<b>ew</b> Exhibitor Workshops	14.1, 14.2, 14.3, 38.1, 38.2, 38.3, 62.1, 62.2, 98.1, 98.2, 122.1, 122.2, 122.3, 146.1, 146.2, 146.3
<b>MAJ</b> Major Speakers	6, 13, 19, 28, 55, 58, 66, 67, 77, 97, 101, 109, 144
<b>PS</b> Probability and Statistics for Secondary Grades (6–12)	20, 95, 96, 117
<b>RN</b> Tackling Rational Numbers K–8: Number Relationships from Counting to Ratios	9, 27, 40, 55, 90, 116



### Conference App

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



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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 and Orientation

(General Interest) Session

Whether you are new to NCTM or a seasoned veteran, there is something new at the conference 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, how to navigate presentations, 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!

**Ruth Harbin Miles**

Board of Directors, National Council of Teachers of Mathematics;  
Mary Baldwin College/Falmouth Elementary School, Staunton/  
Stafford, Virginia

**Jane Porath**

Board of Directors, National Council of Teachers of Mathematics;  
Traverse City Area Public Schools, Michigan

**362 BCEF (GEORGE R. BROWN CONVENTION CENTER)**

8:00 A.M.–9:00 A.M.

## 3 Making "It" Matter: Providing Access to Powerful Mathematics

(General Interest) Session

This session will offer suggestions for using a range of strategies to engage female students and challenge them to think deeply and critically about mathematics and other STEM-related concepts. It will also show ways to empower girls and young women to use mathematics as a tool to address inequities in their communities.

**Crystal Hill Morton**

Indiana University-Purdue University Indianapolis

**GRAND BALLROOM B (GEORGE R. BROWN CONVENTION CENTER)**

## 4 Overcoming Barriers: Making Mathematics Work for All

(General Interest) Session

Principles to Actions

Despite recent reform efforts, unacceptable learning differentials persist. These differentials are in part a result of powerful barriers and unproductive beliefs that keep us from making mathematics work for all. This session will examine barriers in teaching, curriculum, assessment, and professionalism, and it will provide strategies to overcome them.

**Matthew R. Larson**

Lincoln Public Schools, Nebraska

**GRAND BALLROOM C (GEORGE R. BROWN CONVENTION CENTER)**

## 5 From TI 84s to TI-Nspire™ and Beyond

(General Interest) Session

Does your district need to switch to TI-Nspire™? Come see how we made the switch from TI-84+ to TI-Nspire™. I will discuss advertising, student purchase, and training. I will share documents used to convince the district to adopt the slogan: "The official calculator for MISD . . . and the only one you will need between now and your dissertation."

**Barbara Ward**

Montgomery Independent School District, Texas

**332 AD (GEORGE R. BROWN CONVENTION CENTER)**

**Chi Alpha Mu**  
The National Junior Mathematics Club  
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[matheta@ou.edu](mailto:matheta@ou.edu)  
[www.mualphatheta.org](http://www.mualphatheta.org)

**6** **MAJ****Fostering Problem Solving for the Young Child: Activities and Reflections****(Pre-K–2) Session**

The practice of problem solving is important for all children, even those who are very young. In this session, specific activities will be introduced that foster thinking, peer interactions, and a variety of strategies. Participants will reflect on teacher responses, questions, and video clips that demonstrate mathematical thinkers.

**Juanita V. Copley**  
University of Houston, Texas

**362 BCEF (GEORGE R. BROWN CONVENTION CENTER)****7****Early Numeracy with NumbersAlive!®****(Pre-K–5) Session**

Recent NIH studies show early numeracy is predictive of later math competency. Rebecca Klemm, PhD, through her nonprofit organization ([www.numbersalive.org](http://www.numbersalive.org)) creates programming, manipulatives, and books that develop mathematical practices in young children. She shares here ideas that correlate to the Common Core to use in daily activities.

**Rebecca J. Klemm**  
NumbersAlive!, Washington, D.C.

**342 AD (GEORGE R. BROWN CONVENTION CENTER)****8** **CP****Enriching Geometry and Measurement Content by Focusing on the Mathematical Practices****(3–5) Session**

This session will focus on geometry and measurement tasks that encourage students to concentrate on the CCSS mathematical practices of perseverance, precision, and using tools strategically when accessing the core curriculum. Participants will be introduced to projects that deepen the mathematical concepts in an intermediate grade classroom.

**Donna L. Goldenstein**  
Retired, San Leandro, California

**360 ABC (GEORGE R. BROWN CONVENTION CENTER)****9** **RN****Fractions! Teaching Developmentally****(3–5) Session**

This session examines fraction understanding from partitioning and iterating to equivalency and beginning operations. We will explore hands-on fraction models including area, length, and set. Special attention will be given to supporting students who struggle, particularly those in Tier 2 intervention settings.

**Karen S. Karp**  
University of Louisville, Kentucky  
**Barbara J. Dougherty**  
University of Missouri, Columbia

**350 DEF (GEORGE R. BROWN CONVENTION CENTER)****10****Proportional Reasoning in Common Core****(6–8) Session**

Participants will be actively engaged in meaningful activities to motivate students in conceptually understanding proportional reasoning. The participants will use different strategies and manipulatives such as Cuisenaire rods for teaching the Common Core standards in the Ratios and Proportional Relationships domain in grades 6 and 7.

**Heather Olson**  
Lafayette Parish School Board, Louisiana

**352 DEF (GEORGE R. BROWN CONVENTION CENTER)****11****Achieving College Readiness for English Language Learners****(6–12) Session****Principles to Actions**

English Language Learners and struggling students can do the mathematics, if they understand the academic vocabulary used during instruction. This session will provide suggestions for teachers on how to improve vocabulary acquisition within the context of the lesson, using visual and modeling strategies to improve college readiness for ELLs.

**Bill Jasper**  
Sam Houston State University/TODOS: Mathematics for All,  
Huntsville, Texas

**360 DEF (GEORGE R. BROWN CONVENTION CENTER)**

8:00 A.M.–9:00 A.M.

12

## Matrix Operations in Oil and Gas Applications

(9–12) Session

Addition of matrices, scalar multiplication, and matrix multiplication will be applied to situations related to oil production and distribution costs. Handouts of a classroom-ready activity will be provided.

**Sandra Nite**

Texas A&M University, College Station

310 BE (GEORGE R. BROWN CONVENTION CENTER)

13 MAJ

## Rethinking the Trigonometric Functions through Technology

(9–12) Session

Many beautiful ideas in trigonometry emerge from the unit circle. We will use dynamic geometry software to generate trigonometric graphs. Then we will exploit similar technology to investigate generalized graphs and the behavior of a unit square and other polygons. In these new systems, how does our trigonometric system change and stay the same?

**Chris Bolognese**

Upper Arlington City Schools, Columbus, Ohio

GRAND BALLROOM A (GEORGE R. BROWN CONVENTION CENTER)

14

## Animation and Mathematics: What They Share in Common

(9–12, Higher Education) Session

Principles to Actions

Explore animation, an application dependent on geometry, matrices, and technology. Dilations, reflections, rotations, and translations are required to create movement. Large data sets needed for images and sound are handled via matrices. Experiential learning opportunities and cross-disciplinary problem-solving methods for students will be emphasized.

**Susan G. Helser**

Mott Community College, Flint, Michigan

361 CF (GEORGE R. BROWN CONVENTION CENTER)

14.1 ew

## Join the Math Arrow Revolution!

(Pre–K–5) Exhibitor Workshop

How do we build number sense in visual learners? The inventor of the cellphone calls the Math Arrow “ingenious.” A BYU study shows first-grade test scores rising by 8 percent after one week. Pick up a free poster and join a former White House adviser and award-winning Harvard prof to learn about the Math Arrow, “the next generation of the 100s table.”

**Sproglit, LLC**

San Diego, CA

320 BE (GEORGE R. BROWN CONVENTION CENTER)

14.2 ew

## Empowering a Classroom of Personal Learning

(6–12) Exhibitor Workshop

Are you curious about the future of math and personal learning? Whether you’re a 1:1 school or a school that’s still in transition from print to digital curriculum, this session will show you the roles that artificial intelligence, adaptive learning, and blended standards and strategies will play in the near future of math education. Foldables™ will be used.

**McGraw-Hill Education**

Columbus, Ohio

320 CF (GEORGE R. BROWN CONVENTION CENTER)

14.3 ew

## Mathspace: Why You’ll Never Grade Math Assignments Again—Seriously!

(6–12) Exhibitor Workshop

You’ve seen it all, right? Adaptive learning? Check. Handwriting recognition? Hmm. Every math question graded step-by-step? Wait, that’s new! Imagine: automatic grading, so you can focus on teaching; students hand-writing fully worked answers, with real-time feedback; and no more multiple choice! Come see why Mathspace is like nothing you’ve ever seen!

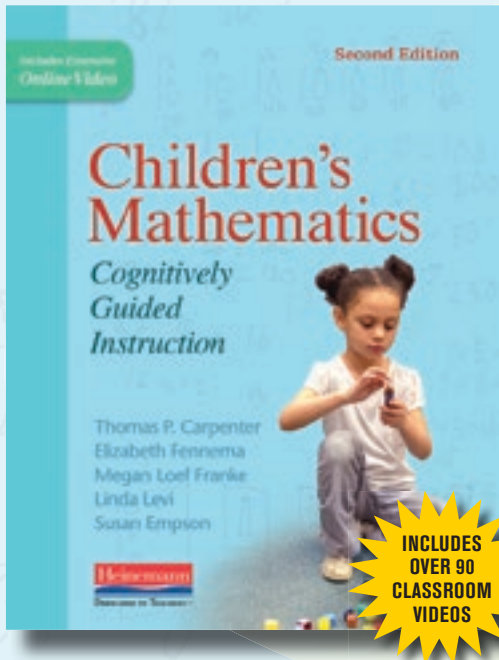
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New York, New York

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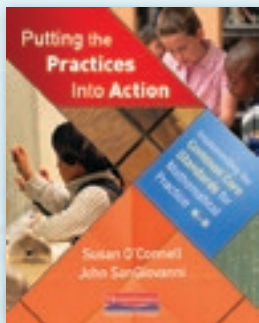
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—Mary Montgomery Lindquist, Past President, NCTM

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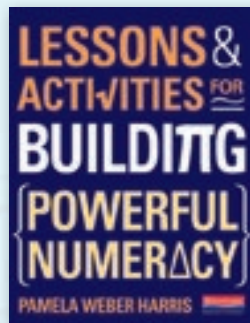
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**Putting the Practices Into Action**  
*Implementing the Common Core Standards for Mathematical Practice*

Susan O'Connell  
and John SanGiovanni

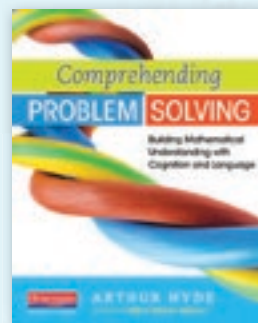
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Pamela Harris

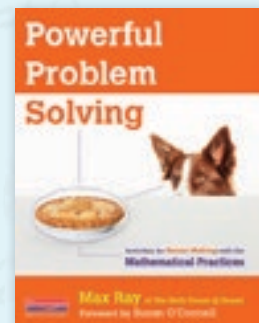
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Arthur Hyde

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Max Ray

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## 15 Making Sense of Addition and Subtraction—Manipulatives Matter

(Pre-K–2) Gallery Workshop

Students must understand the meaning of operations, and not just memorize facts. Explore hands-on strategies for helping students understand operations as verbs in mathematical sentences. Learn research-informed methods for building understanding and fluency while exploring manipulatives, both new and familiar favorites, to support student learning.

Sara Delano Moore

ETA hand2mind, Vernon Hills, Illinois

351 CF (GEORGE R. BROWN CONVENTION CENTER)

## 16 EQ Mathematics and Play: Promoting Learning and Relationships in Diverse Classrooms

(Pre-K–2) Gallery Workshop

This session will use videos and hands-on materials to help participants use play to teach mathematics, particularly the concepts of composing and decomposing, which are highlighted in CCSSM. The session will also provide strategies for using playful mathematics to build positive relationships with children and families from diverse communities.

Amy Noelle Parks

University of Georgia, Athens

342 BECF (GEORGE R. BROWN CONVENTION CENTER)

## 17 Thinking Strategically: Connecting Addition and Subtraction

(Pre-K–2) Gallery Workshop

By the end of grade 2, students are expected to explain why addition and subtraction strategies work. Three strategies lead students to the connections between the two operations, and they provide the underlying reasoning to the “basic facts.” Can these be extended to multi-digit computation? Yes! Let’s arm our students with meaningful strategies!

Rob Nickerson

ORIGO Education, St. Charles, Missouri

320 AD (GEORGE R. BROWN CONVENTION CENTER)

## 18 Fraction (or Fractured?) Understanding

(3–5) Gallery Workshop

Principles to Actions

This workshop will focus on the underlying concepts necessary for students to be successful with fractions. We will explore different representations and interpretations of fractions and why they are so critical. We will also consider how the meaning of the numerator and denominator change when the fractions are interpreted in different ways.

Debi DePaul

Origo Education, Inc., St. Charles, Missouri

361 AD (GEORGE R. BROWN CONVENTION CENTER)

351 AD (GEORGE R. BROWN CONVENTION CENTER)

## 19 MAJ Miguelito’s Suitcase/ La Maleta de Miguelito

(3–8) Gallery Workshop

Explore cultural diversity, equity, and social justice within the framework of a math class. Identify the skills, talents, and knowledge students bring. Overcome learning gaps and language barriers. Unpack Miguelito’s maleta, and find strategies to engage students and end marginalization. Discover how difficult kids can become your greatest resource!

Ivette Gonzalez

Gonzalez Educational Consulting Services, Chicago, Illinois

332 BECF (GEORGE R. BROWN CONVENTION CENTER)

## 20 PS Activities for Learning Statistics in Middle Grades

(6–8) Gallery Workshop

Principles to Actions

In this workshop, activities for developing understanding of various statistical concepts will be explored. The activities will illustrate ways to measure center and variability in data (including the mean absolute deviation), the importance of random sampling in data collection, and methods for comparing two groups of data.

Gary D. Kader

Appalachian State University, Boone, North Carolina

310 AD (GEORGE R. BROWN CONVENTION CENTER)

## 21

### We Got Rhythm

(6–8) Gallery Workshop

There are many connections between music and math. In this session, we will listen, clap, and count the beats in music, and then use musical notation to demonstrate how teachers can build a deep understanding of fractions. Calculators will play a role in helping students make connections between mathematical and musical notations and meanings.

**Bob Horton**

Clemson University, South Carolina

361 BE (GEORGE R. BROWN CONVENTION CENTER)

## 22

### You Gotta Know When to Fold: Paper Folding and Geometry!

(6–8) Gallery Workshop

Principles to Actions

Participants will make several items by paper folding. The speakers will discuss and demonstrate ways to use paper folding to introduce, review, enhance, or facilitate geometric topics. The topics include geometric shapes, parallel and perpendicular lines, area, and perimeter. Handouts will be provided.

**Deborah A. Crocker**

Appalachian State University, Boone, North Carolina

**Betty B. Long**

Appalachian State University, Boone, North Carolina

351 BE (GEORGE R. BROWN CONVENTION CENTER)

## 23

### Creatively Integrate iPad Math and Presentation Apps into Your Classroom

(6–12) Gallery Workshop

Take photos with your iPad and immediately model the curves with an equation or a geometric figure! Obtain and “play” over 1000 *free* interactive classroom ready activities, including teacher notes and solutions for grades 6–12. Learn how to cleverly utilize and integrate these apps for student success: Reflector, Splashtop, Dropbox, and TI-Nspire.

**Kelly Kutach**

Texas Instruments, Dallas, Texas

**Tom Reardon**

Youngstown State University, Ohio

340 (GEORGE R. BROWN CONVENTION CENTER)

## 24

### Narrowing Participation Gaps in Secondary Mathematics Classrooms

(6–12) Gallery Workshop

Principles to Actions

This presentation will focus on strategies to narrow participation gaps in mathematics classrooms among groups of students from dominant versus nondominant ethnic, racial, socioeconomic or linguistic backgrounds. Strategies will include: (1) organizing mathematical contributions, (2) expanding “smartness,” and (3) engaging instead of motivating.

**Victoria M. Hand**

University of Colorado, Boulder

330 (GEORGE R. BROWN CONVENTION CENTER)

## 25

### How Can I Become a Problem Solver?

(Preservice and In-Service) Gallery Workshop

Effective mathematics teachers engage students through tasks that promote mathematical reasoning and problem solving. For new teachers, this is a challenge because they may not be confident problem solvers. Leading students to develop the same skills then becomes unlikely. We will discover problem-solving strategies while exploring rich problems.

**Jane Long**

Stephen F. Austin State University, Nacogdoches, Texas

**Lesla Beverly**

Stephen F. Austin State University, Nacogdoches, Texas



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

8:00 A.M.–9:15 A.M.

**26****Giant Polyhedra, Inside and Out: Hands-On Development of 3-D Concepts***(Preservice and In-Service) Gallery Workshop*

Build larger-than-life polyhedra using lightweight, brightly-colored, giant triangles. No prior knowledge or experience required. This hands-on experience moves through the first three van Hiele levels developing a deep level of conceptualization about polyhedra and integrates all of the NCTM Process Standards.

**Jacqueline Sack**

University of Houston-Downtown, Texas

**Michael Connell**

University of Houston-Downtown, Texas

**362 AD (GEORGE R. BROWN CONVENTION CENTER)**

9:30 A.M. - 10:30 A.M.

**27** **RN****Children's Fractional Knowledge***(General Interest) Session*

Partitioning activity of children whose whole number concepts are at one, two, and three levels of units will be discussed, and what these partitioning schemes mean for fraction knowing will be detailed. Videos will be presented to illustrate stages in fraction knowing.

**Leslie P. Steffe**

University of Georgia, Athens

**Katy Ulrich**

Virginia Tech University, Blacksburg

**GRAND BALLROOM A (GEORGE R. BROWN CONVENTION CENTER)****28** **EQ** **MAJ****Listening to Unheard Voices: Children's Responses to Standardized Test Items***(General Interest) Session*

Although research on children's performance on standardized tests is plentiful, we have meager knowledge of how children construe the tests they take so regularly. I will share responses by elementary school children in an urban setting to released standardized test items. Further, I have probed their conception of what testing is for.

**Swapna Mukhopadhyay**

Graduate School of Education, Portland State University, Oregon

**GRAND BALLROOM C (GEORGE R. BROWN CONVENTION CENTER)****29****More "Time to Teach" Please!***(General Interest) Session*

Visit our session to discover how to utilize common-sense, research-based classroom management tips and techniques that can be implemented into your classroom tomorrow with positive and observable results. Learn how to diffuse discipline problems and use proven strategies to "refocus" trouble students, integrating them back into the classroom.

**Mona Lisa Chambers**

Houston Community College, Texas

**360 DEF (GEORGE R. BROWN CONVENTION CENTER)****30****National Assessment of Educational Progress: A Treasure Trove of Mathematics Problems***(General Interest) Session**Principles to Actions*

Participants will learn how to use online tools to access released items from the National Assessment. They will also learn how to compare their students' performance on items with students in their state and the nation. Techniques will be shared for using these items to help prepare students for standardized testing.

**Crystal Walcott**

Indiana University-Purdue University, Columbus

**Kathryn Essex**

Indiana University-Purdue University, Columbus

**360 ABC (GEORGE R. BROWN CONVENTION CENTER)****31****Great Early Math Attitudes = Later Successful Math Learners!***(Pre-K–5) Session**Principles to Actions*

Let's help our students develop positive attitudes about math. They need to be fully engaged in creating math models, persistent in completing their work, and motivated to advance their mathematical skills. This session will demonstrate how we can work with children to focus their behaviors and develop productive dispositions toward mathematics.

**Stuart J. Murphy**

Self-Employed Consultant, Boston, Massachusetts

**362 BCEF (GEORGE R. BROWN CONVENTION CENTER)**



**32****If It's Not Real World, It's Not Real Math!****(Pre-K–5) Session**

Teaching mathematics to children goes way beyond a textbook or program. It involves surveying your class to discover students' interests and designing projects that meet their needs. Learn about real-world projects that will make your students ask for more! Hands-on activities, make it–take it, and handouts provided.

**Dacia P. Jones**

Durham Public Schools, Durham, North Carolina

**350 DEF (GEORGE R. BROWN CONVENTION CENTER)****33****Learning What Your Students Know about Multiplication and Division****(3–5) Session****Principles to Actions**

In this session, I will share students' work on tasks related to multiplication and division and then use these examples to discuss how teachers can learn to draw inferences on what these students may understand. These strategies relate to developing components of pedagogical content knowledge.

**Dustin L. Jones**

Sam Houston State University, Huntsville, Texas

**342 AD (GEORGE R. BROWN CONVENTION CENTER)****34****Minding Mindsets in Middle School Mathematics****(6–8) Session**

In recent years, there is increasing conversation around the importance of students' mindsets, especially with regard to mathematics. What does it all mean? Why are these ideas important? What action can educators take? Explore these questions and learn about freely available tools that educators can apply in their classrooms.

**Lisa Brown**

Dana Center, University of Texas, Austin

**GRAND BALLROOM B (GEORGE R. BROWN CONVENTION CENTER)****35****Using Good Tasks****(9–12) Session**

What tasks can help my students learn about statistics and sampling, or about connections between functions and geometry? Together, we will work two problems that answer these questions and that model selecting goals, choosing good tasks, planning for discourse, thinking about assessment, having multiple entry points, and using proper tools.

**Fred Dillon**

Ideastream, Cleveland, Ohio

**352 DEF (GEORGE R. BROWN CONVENTION CENTER)****36****Prove It: Introducing Formal Logic Improves Geometry Students' Proof Technique****(9–12, Higher Education) Session**

The standard unit on logic in the national geometry curriculum does very little to prepare students for the reasoning that they will employ in the rest of the course. Supplementing this with an introduction to “advanced logic” can greatly enhance students' reasoning skills and their ability to prove challenging theorems independently.

**William Rose**

Montgomery Blair High School, Silver Spring, Maryland

**332 AD (GEORGE R. BROWN CONVENTION CENTER)****37****A Cautious Approach to Asymptotes****(Higher Education) Session**

The concept of “asymptote” is introduced at the intermediate algebra level and appears again in trigonometry and throughout calculus. We know one when we see one; however, there is no universally accepted definition of “asymptote.” In this session, we will consider some definitions that admit surprising examples of asymptotic behavior.

**Leonard M. Wapner**

El Camino College, Torrance, California

**310 BE (GEORGE R. BROWN CONVENTION CENTER)**

9:30 A.M.–10:30 A.M.

### 38 **EQ** Teaching Math to English Learning Students

(Preservice and In-Service) Session

Participants will be actively involved in a mathematics lesson conducted in Vietnamese language. The presenter will demonstrate and analyze SDAIE (Specially Designed Academic Instruction in English) strategies necessary to relate mathematics concepts to students with limited English proficiency in a classroom setting.

**Kien Pham**

California State University, Fresno

**361 CF (GEORGE R. BROWN CONVENTION CENTER)**

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

(6–12) 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 grade 6–algebra 2 (with an option for high school Integrated I-III). Receive free copies of CPM's entire Core Connections series.

**CPM Educational Program**

Sacramento, California

**320 CF (GEORGE R. BROWN CONVENTION CENTER)**

### 38.2 **ew** Transform Teaching and Learning with MathXL® for School

(6–12) Exhibitor Workshop

MathXL® for School allows middle and high school teachers to focus on important aspects of teaching, such as measuring learning outcomes, while students receive a personalized learning experience with immediate feedback, interactive learning aids, and practice, practice, practice! NEW—Mobile compatibility!

**Pearson**

Boston, Massachusetts

**310 CF (GEORGE R. BROWN CONVENTION CENTER)**

### 38.3 **ew** Using Technology to Reason Mathematically

(6–12) Exhibitor Workshop

Principles to Actions

NCTM's Principles to Actions focuses on how teachers can create effective learning environments for all students. We will address its Mathematics Teaching Practices through the use of coherent activities and investigations with TI technology. Learn how to integrate technology into your lessons for grades 6–8 and 9–12 to help students make stronger connections in mathematics.

**Texas Instruments**

Dallas, Texas

**320 BE (GEORGE R. BROWN CONVENTION CENTER)**

9:45 A.M.–11:00 A.M.

### 39 Shuffling into Math: Primary Games for the Common Core

(Pre-K–2) Gallery Workshop

Principles to Actions

Come prepared to play card and dice games that help your primary students achieve success in the following Common Core concepts: numeration, operations and fact fluency, patterning, and graphing. Excellent take-home ideas, game boards, and student samples will be shared. Great for regular, title, ELL, and after-school programs.

**Julie Knudsen**

Trinity Valley School, Fort Worth, Texas

**310 AD (GEORGE R. BROWN CONVENTION CENTER)**

### 40 **RN** Connecting the Dots between Number Sense and Computational Fluency

(Pre-K–5) Gallery Workshop

Principles to Actions

Come participate firsthand number sense activities selected to highlight the role of number sense and to develop understanding of operations. Activities and strategies will be shared to promote communication, representation, relative size and fit, computational fluency, and with ties to measurement—all essential elements in the elementary classroom.

**Marti Kuntz**

Educational Resources Group, Charleston, South Carolina

**332 BECF (GEORGE R. BROWN CONVENTION CENTER)**

9:45 A.M.–11:00 A.M.

**41**

### **Developing Number Sense, Geometry, and Problem-Solving Competence: Strengthening Understanding**

(Pre-K–5) Gallery Workshop

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

**Donna L. Knoell**

Educational Consultant, Shawnee Mission, Kansas

**330 (GEORGE R. BROWN CONVENTION CENTER)**

**42**

### **Understanding Operations: Hands-On Strategies for Building Relationships**

(Pre-K–5) Gallery Workshop

Students often understand operations in isolation, without understanding the relationships between and among the operations. What does multiplication as repeated addition mean? Experience hands-on activities that highlight relationships between operations, and discuss strategies for helping students build this deeper understanding of operations.

**Sara Delano Moore**

ETA hand2mind, Vernon Hills, Illinois

**351 AD (GEORGE R. BROWN CONVENTION CENTER)**

Thursday

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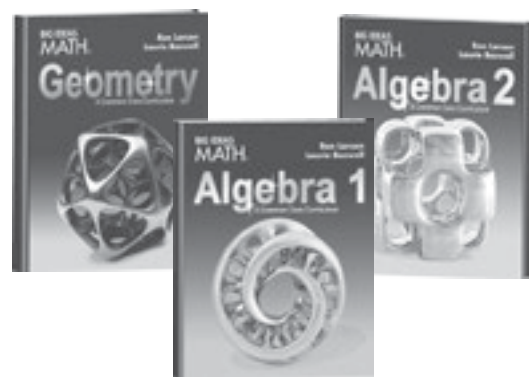
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**43****Mathematical Rigor through Core Practices and Classroom Games**

(3–5) Gallery Workshop

The CCSSM content, as reinforced by the Standards for Mathematical Practice, is taught through a conceptual approach that demands understanding and rigor. This means students need to be highly engaged in mathematics lessons. Come see how games can provide motivation, make student thinking visible, and help students build connections and conceptual knowledge.

**Ruth Harbin Miles**

Board of Directors, National Council of Teachers of Mathematics; Mary Baldwin College/Falmouth Elementary School, Staunton/Stafford, Virginia

**Ted H. Hull**

LCM: Leadership, Coaching, Mathematics, Pflugerville, Texas

**340 (GEORGE R. BROWN CONVENTION CENTER)****44****Moving Forward with Metric! Measurement within the Common Core**

(3–8) Gallery Workshop

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

**Donna L. Monck**

Rock Christian Academy, Easton, Pennsylvania

**351 BE (GEORGE R. BROWN CONVENTION CENTER)****45** **CP****Ensuring Equity in Access for Newcomers**

(6–8) Gallery Workshop

Our challenge is to provide a coherent learning experience for all students, particularly for newcomers. We will share successful strategies to give newcomer students access to mathematics. Our focus is on how access to academic language leads to deep mathematical understanding. We will discuss samples of their work as evidence of our success.

**Alexa Goldstrom**

DOE–Harbor Heights Middle School, New York City, New York

**Erick Perez**

DOE–Harbor Heights Middle School, New York City, New York

**Rosanny Cuello Ventura**

DOE–Harbor Heights Middle School, New York City, New York

**342 BECF (GEORGE R. BROWN CONVENTION CENTER)****46****Using Nonroutine Problems to Develop Problem-Solving Abilities and Understanding of Concepts**

(6–8, Preservice and In-Service) Gallery Workshop

Nonroutine problems have no standard way for solving and often have high cognitive demand, which can increase student’s engagement in their own learning process. Participants will receive a collection of problems appropriate for middle school students. Participants will explore and discuss the problems.

**Hoyun Cho**

Capital University, Columbus, Ohio

**Gary Lawrence**

Mustard Seed School, Hoboken, New Jersey

**361 BE (GEORGE R. BROWN CONVENTION CENTER)****47****Active and Interesting Function Activities That Highlight the Mathematical Practices**

(6–12) Gallery Workshop

Participants will experience several activities concerning functions. These will include using a human graph to explore functions, domain and range, and asymptotes. There will be an activity with function machines, a carousel, and a silent board game. We will end with a Function Treasure Hunt. The Common Core mathematical practices will be processed throughout.

**Christine Mikles**

CPM Educational Program, Sacramento, California

**Karen Wootton**

CPM Educational Program, Sacramento, California

**351 CF (GEORGE R. BROWN CONVENTION CENTER)**

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



**48****It Just Takes Six Questions**

(9–12) Gallery Workshop

Attendees will learn about six questions that can help prepare high school calculus students for STEM courses and careers. Adapted from the NSF-funded CLEAR Calculus Project, these questions are being used with high school students to make calculus conceptually accessible while increasing the coherence, rigor, and applicability of calculus content.

**Beth L. Cory**

Sam Houston State University, Huntsville, Texas

**Edward W. Swim**

Sam Houston State University, Huntsville, Texas

**Michael Oehrtman**

University of Northern Colorado, Greeley

**362 AD (GEORGE R. BROWN CONVENTION CENTER)****49****Making Mathematics Connections through Conic Sections**

(9–12) Gallery Workshop

Learn how to make the study of conic sections fun and engaging for students. Through hands-on activities and the use of technology, explore how to use the conic sections to make connections among mathematics concepts in algebra, geometry, and trigonometry.

**Richard L. Parr**

Rice University, Houston, Texas

**361 AD (GEORGE R. BROWN CONVENTION CENTER)****50****New and Preservice Teachers Workshop**

(Preservice and In-Service) Gallery 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

**320 AD (GEORGE R. BROWN CONVENTION CENTER)****51****Mathematical Habits of Mind: Helping Students Become Doers of Mathematics**

(General Interest) Session

If students are to be prepared for their future, how they think is at least as important as what they know. So how we teach is at least as important as what we teach. With a new generation of assessments focused on mathematical thinking, we have an opportunity to help students learn to think, reason, solve problems, and become Doers of Mathematics.

**Cathy L. Seeley**

Past President, National Council of Teachers of Mathematics; Senior Fellow (Emeritus), Charles A. Dana Center, University of Texas, Austin

**GRAND BALLROOM C (GEORGE R. BROWN CONVENTION CENTER)****52****CP****Primary Math Journals**

(Pre-K–2) Session

In math class, students should be provided with opportunities to represent and express ideas. Through writing, pictures, and diagrams that students produce in their journals, they are able to show how their mathematical thinking is developing, use mathematical language to communicate understandings, and reveal misunderstandings.

**Carolyn B. Moore**

Independent Consultant, Austin, Texas

**342 AD (GEORGE R. BROWN CONVENTION CENTER)****53****More or Less: Developing the Concepts of Comparison**

(Pre-K–5) Session

Principles to Actions

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

**360 ABC (GEORGE R. BROWN CONVENTION CENTER)**

## 54 Improving Student Understanding and Engagement in the Math Classroom

(3–5) Session

Explore reasoning strategies to strengthen students' development and understanding of the Common Core State Standards. The ready-to-use activities will actively engage students with strategies for a deeper understanding of several math concepts including measurement and geometry. Teachers of English language learners are encouraged to attend.

**Jennie M. Bennett**

NUMBERS Mathematics Professional Development, Houston, Texas

GRAND BALLROOM B (GEORGE R. BROWN CONVENTION CENTER)

## 55 **RN MAJ** Responsive Teaching in Elementary Mathematics: The Case of Fractions

(3–5, Preservice and In-Service) Session

Recent agenda-setting documents have called for teachers to be responsive to children's mathematical thinking. What does it mean for a teacher to be responsive? What kinds of teaching practices are involved? Research results characterizing skilled responsive teaching with fraction concepts and operations will be shared and discussed.

**Susan B. Empson**

University of Texas at Austin

**Victoria Jacobs**

University of North Carolina at Greensboro

362 BCEF (GEORGE R. BROWN CONVENTION CENTER)

## 56 Singin' and Signin' Teaches the Way Kids Learn!

(3–8) Session

Principles to Actions

Learn an engaging, kinesthetic, award-winning approach to teaching rigorous math standards that captures students' energy and invigorates your classroom! Leave with manipulatives and song lyrics to teach eight lessons, including area, volume, and circumference, that will measurably impact learning immediately. Be ready for fun and be a student yourself!

**Siegrid I. Stillman**

Fallbrook Union Elementary School District, California

310 BE (GEORGE R. BROWN CONVENTION CENTER)

57 **CP**

## Opening Up and Repacking Tasks to Include the Practice Standards

(6–8) Session

Mathematical tasks are the key to engaging students in the Common Core content and practice standards. It begins and ends with the teacher selecting the task and ends with facilitating the discussion, but in the middle it's all about the students. In this session, we will look at choosing and altering tasks in order to integrate content and practice standards.

**Gretchen Muller**

Oakland Unified School District, California

360 DEF (GEORGE R. BROWN CONVENTION CENTER)

58 **CP MAJ**

## Understanding Mathematics: Integrating Content, Practices, and Language.

(6–8) Session

This session will explore the interplay of content, mathematical practices, and academic language. Using academic language is the key to integrating the content standards and the practices in CCSSM to provide students with a coherent learning experience. We will discuss effective strategies to do this.

**Harold Asturias**

Lawrence Hall of Science, University of California, Berkeley

GRAND BALLROOM A (GEORGE R. BROWN CONVENTION CENTER)

59

## When Will We Ever Use This?

(6–12) Session

Math students often question why they need to learn math topics, especially when they (sometimes correctly) think that they will never use these concepts. We will focus on actual (and some humorous) math applications in medicine, legal trials, movies, television, literature, navigation, Internet security, agriculture, games, and others.

**Scott D. Oliver**

Adlai E. Stevenson High School, Lincolnshire, Illinois

350 DEF (GEORGE R. BROWN CONVENTION CENTER)

**60**

**1:1 iPad Initiative in Mathematics**

(9–12, Research) Session

Principles to Actions

This presentation will focus on how to utilize the iPad in a high school mathematics classroom. Participants will learn techniques from Manor High School in Manor, Texas, which recently had a 1:1 iPad rollout to all students. Come and learn about the procedures, apps, and creative ways to use the iPad for high school math courses.

**David A. Surdovel**  
Manor ISD, Texas

**352 DEF (GEORGE R. BROWN CONVENTION CENTER)**

**61**

**Advanced Placement Statistics Teaching Knowledge**

(9–12) Session

Research in statistics education is lacking a benchmark that describes the types of teaching knowledge required of AP Statistics teachers. To fill in this gap, an Advanced Placement Statistics Teaching Knowledge (APSTK) assessment is created to uncover relationships among assessment scores and teacher characteristic variables.

**Brenna J. Haines**  
George Washington University, Washington, D.C.

**361 CF (GEORGE R. BROWN CONVENTION CENTER)**

**62**

**Instruction and Tasks That Support the Development of Proportional Reasoning**

(Preservice and In-Service) Session

Proportional reasoning is considered to be a basis for and a thread across multiple topics of the secondary mathematics curriculum. Participants will engage in solving tasks and discussing instructional practices designed to support the development of proportional reasoning concepts and skills with middle grades children.

**Jennifer Chauvot**  
University of Houston, Texas

**332 AD (GEORGE R. BROWN CONVENTION CENTER)**

**62.1 ew**

**Math Is a Verb in the 21st Century!**

(General Interest) Exhibitor Workshop

Create a process-oriented, problem-solving, digital, and collaborative math classroom where the teacher is a facilitator of instruction and students take increasing responsibility for their own learning. The Pearson System of Courses, based on a collaborative workshop model, fosters student discourse and opportunities to learn with and through each other, bridging the gap between learning inside and outside the classroom. Discover your pathway to success for college and career readiness while preparing students for the next generation high-stakes assessment.

**Pearson**  
Chicago, Illinois

**310 CF (GEORGE R. BROWN CONVENTION CENTER)**

**62.2 ew**

**Walk the Number Line for Meaningful and Motivating Mathematics!**

(Pre-K–5) Exhibitor Workshop

Elementary learners need a number line for powerful math concepts—like skip counting, adding on, alternative algorithms for regrouping, making change, elapsed time, rounding, factoring, and fractions! Be amazed at the unique strategies that Kim Sutton of Creative Mathematics will use. Be ready for action with all the latest ideas for teaching every area of mathematics! Sing, dance, play games! Learn strategies that will change your classroom!

**Creative Mathematics**  
Arcata, California

**320 BE (GEORGE R. BROWN CONVENTION CENTER)**

**64**

**Exemplary K–12 STEM Teachers: Leadership and Success**

(General Interest) Burst

K–12 teachers are invited to apply to the Presidential Awards for Excellence in Mathematics and Science Teaching. Recipients receive a paid trip to Washington, D.C., a citation signed by the President of the United States and \$10,000. Past awardees will discuss the application process and their leadership roles as PAEMST alumni.

**Marilyn Suiter**  
National Science Foundation, Arlington, Virginia

**332 BECF (GEORGE R. BROWN CONVENTION CENTER)**

**65****Looking into Learners' Mathematical Thinking through Model-Eliciting Activities (MEAs)**

(General Interest) Burst

The presentation will introduce model-eliciting activities (MEAs) including their design principles and some examples used both nationally and internationally; it will include a discussion among mathematics teachers and educators about how they could be used in mathematics lessons.

**Adem Ekmekci**

Rice University, Houston, Texas

**362 AD (GEORGE R. BROWN CONVENTION CENTER)****66****MAJ****Practice-Rich Tasks with Post-it Notes and Patty Paper**

(Pre-K–2) Burst

Geometry and measurement standards are addressed in this session using only Post-it notes and patty paper. Participants will reflect and identify the Common Core practice standards used in activities they begin as well as ones illustrated in classroom video clips and student work samples.

**Juanita V. Copley**

Retired, University of Houston, Texas

**310 AD (GEORGE R. BROWN CONVENTION CENTER)****67****MAJ****Pieces & Parts! A Longitudinal View of Early Fractional Understanding**

(Pre-K–2, Higher Education) Burst

What do young children know and understand about fractions, and how can teachers build on it to develop key concepts in rational numbers? Key findings from a seven-year study of fractional understanding of K–3 students will be shared through pre/post task assessment results along with implications for K–3 classroom use and mathematics curriculum design.

**Dittika Gupta**

Baylor University, Waco, Texas

**Trena L. Wilkerson**

Baylor University, Waco, Texas

**Sandra D. Cooper**

Baylor University, Waco, Texas

**351 AD (GEORGE R. BROWN CONVENTION CENTER)****68****Making Math Cool! with "The Rappin' Mathematician"**

(3–8) Burst

Principles to Actions

Let's be honest: You can't teach math if your students walk in thinking it's boring. Presented by the 2009 California Teacher of the Year, Making Math Cool! will address head-on the stereotype that math and mathematicians are nerdy and unexciting, and session participants will leave with real, easy-to-implement ideas for combating this myth.

**Alex Kajitani**

Escondido Union School District, California

**342 BECF (GEORGE R. BROWN CONVENTION CENTER)****69****Communication is the Key . . . Just Ask Any Bumblebee!**

(6–8) Burst

Communication is a critical component of any successful classroom, as it is to any successful beehive, but what does strong, positive communication look and sound like in a middle school mathematics classroom? Come experience some easy-to-implement strategies designed to promote student discourse and collaboration.

**Sana Brennan**

Region 4 Education Service Center, Houston, Texas

**361 AD (GEORGE R. BROWN CONVENTION CENTER)****70****Using Game Theory to Foster Discourse in Middle Grades Classrooms**

(6–8) Burst

Game theory is one of the hottest branches of math research. Everyone from biologists to generals to professional gamblers is interested in its real-life applications. It also happens to be an exciting, accessible tool for starting discussions with middle grades students! This presentation will share ideas for making this happen in your classroom.

**Ryan G. McLaughlin**

Berkeley Preparatory School, Tampa, Florida

**351 BE (GEORGE R. BROWN CONVENTION CENTER)**



**71****Three Models to Preview Calculus in Grades 6 to 11**

(6–12) Burst

**Principles to Actions**

Participants will explore the mathematics related to a Ferris wheel, a human cannon ball flight, and a bicycle ride to school. We will look at how these three math models can be used to preview derivatives, extrema, inflection points, the mean value theorem, integrals, Riemann sums, and other calculus concepts for students in grades 6 through 11.

**Terry Walsh**

Retired, Carbon Valley High School, Loveland, Colorado

**330 (GEORGE R. BROWN CONVENTION CENTER)****72****Two Birds, One Stone: Transformations, Functions, and the Common Core**

(6–12) Burst

**Principles to Actions**

In grades 7–12, CCSSM emphasizes functions and geometric transformations, and it states that students should understand transformations as functions. By thinking of these topics as two sides of the same mathematical coin, students gain a deeper understanding of both. Examine the mathematical connections, and leave with exciting Sketchpad activities.

**Scott Steketee**

KCP Technologies, Philadelphia, Pennsylvania

**Daniel Scher**

KCP Technologies, New York, New York

**361 BE (GEORGE R. BROWN CONVENTION CENTER)****73** **EQ****Attending to Equity and Identity in Secondary Mathematics Classrooms**

(Higher Education, Preservice and In-Service) Burst

This session will explore attending to equity in secondary mathematics classrooms based on the NCTM Equity Standard and emerging research in mathematics education. The presentation will address ways to attend to equity by attending to students' mathematics identities based on a study of middle school teachers teaching in diverse mathematics classrooms.

**Toya Jones Frank**

George Mason University, Fairfax, Virginia

**340 (GEORGE R. BROWN CONVENTION CENTER)****74****Examining CAEP's First Standard for Educator Preparation and the CCSS Mathematical Practices**

(Higher Education, Preservice and In-Service) Burst

The coherence of the Council for Accreditation of Educator Preparation's (CAEP) first standard of educator preparation can be measured against the eight CCSS Standards for Mathematical Practice. This session will discuss secondary math content and teacher preparation. It will make the case that assessing the coherence of CAEP's standards is difficult but important, and it will then assess the focus of CAEP's first standard.

**Atma Sahu**

Coppin State University, Baltimore, Maryland

**351 CF (GEORGE R. BROWN CONVENTION CENTER)****75****Effectiveness of Math Coaching in Middle Schools**

(Research) Burst

Standardized testing under No Child Left Behind has highlighted the tremendous need for additional support in literacy and mathematics. This study seeks to investigate the impact of math coaching on the delivered curriculum and on the math scores of middle school students.

**Shanthi Ayyadhury**

Texas Tech University, Lubbock

**Sonya Sherrod**

Texas Tech University, Lubbock

**320 AD (GEORGE R. BROWN CONVENTION CENTER)****76****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 for enhancing your chances to win it.

**Carol A. Edwards**

Member, MET Board of Trustees, Chandler, Arizona

**310 AD (GEORGE R. BROWN CONVENTION CENTER)**

77 **MAJ****Making Math Mental: Developing Number Sense through Daily Routines**

(Pre-K–2) Burst

Do you have to rely on a calculator to estimate tips for your waiter? Those of us who do probably did not learn strong mental computation skills in elementary school. Make a difference in your students' mathematical experiences through quick and easy daily routines that foster number sense as young as preschool, kindergarten, and into first grade.

**Brian Mowry**

Austin Independent School District, Texas

**330 (GEORGE R. BROWN CONVENTION CENTER)**

78

**Reacting to Fractions: A Visual and Cultural Approach**

(Pre-K–5) Burst

Rebecca Klemm, PhD (Statistics), will share her data and experiences in multiple learning environments to explore elementary-grade-level comprehension of fractions. She will discuss how visual manipulatives, expressions, and historical narratives create a holistic conceptualization of fractions.

**Rebecca J. Klemm**

NumbersAlive!, Washington, D.C.

**351 BE (GEORGE R. BROWN CONVENTION CENTER)**

79

**Work Stations 101: What Are Students Doing?**

(3–5) Burst

Are you ready to incorporate work stations into your instruction? Are you looking for ideas about the types of activities that could be used in work stations? Join us as we explore the “basics” for determining what types of work station activities could be used to support mathematics instruction.

**Janet E. Dodd**

Pasadena Independent School District, Texas

**342 BECF (GEORGE R. BROWN CONVENTION CENTER)**

80

**Mission Possible: Changing Course for Math-Delayed Middle School Students**

(6–8) Burst

Many students entering middle school have very limited math fact fluency. If left unaddressed, this hinders progress with more advanced math topics. Traditional methods for developing fluency can be ineffective for many students. Finally—a successful classroom technique that is changing test scores and attitudes, and even has students asking for more!

**Jennifer Benoist Mitchell**

Klein ISD, Texas

**320 AD (GEORGE R. BROWN CONVENTION CENTER)**

81

**Pythagoras: What Were You Thinking?**

(6–8) Burst

Principles to Actions

Visual proofs of the Pythagorean theorem are some of the first proofs that students experience. They help students understand the theorem and why it works. We will share visual proofs of the Pythagorean theorem with explanations of how and why the proofs work.

**Betty B. Long**

Appalachian State University, Boone, North Carolina

**Deborah A. Crocker**

Appalachian State University, Boone, North Carolina

**361 AD (GEORGE R. BROWN CONVENTION CENTER)**

82

**New Mathematics Standards and Social-Emotional Competencies**

(6–8) Burst

The Common Core Standards for Mathematical Practice, and other state standards, provide robust descriptions of the ways that students are expected to engage with mathematics. In light of these standards, students' social-emotional competencies—self-awareness, self-management, social awareness, and relationship skills—are of critical importance for academic success.

**Lisa Brown**

University of Texas Dana Center, Austin, Texas

**340 (GEORGE R. BROWN CONVENTION CENTER)**

**83**

**Detect, Reflect, and Correct: Making the Most of Math Mistakes**

(6–12) Burst

Improve students' abilities to evaluate the effectiveness of a mathematical argument and to identify and correct flawed reasoning. Turn almost any exercise into a reflective, spot-the-mistake exercise. Help students investigate their own mathematical misconceptions, correct their errors, and assess their level of understanding.

**Charlotte Skinner**

University of Cincinnati Blue Ash, Ohio

**332 BECF (GEORGE R. BROWN CONVENTION CENTER)**

**84**

**Meta-Model Approach to Solve Algebraic Equations (Algebra Swag)**

(6–12) Burst

“Algebra Swag” is the easiest and fattest way for solving algebraic equations that the presenter has seen. Introducing it to his classes led to a 100-percent passing rate in the math state exam. This unique strategy eliminates some complicated rules when applying the properties of equality in solving equations. “Algebra Swag” is ideal for intensive math classes.

**Marlon A. Relles**

Duval County Public School System, Jacksonville, Florida

**362 AD (GEORGE R. BROWN CONVENTION CENTER)**

**85**

**Teachers Leading the Way to the Top**

(Higher Education, Preservice and In-Service) Burst

Presenters will introduce participants to a new instructional approach, CRCS, which is driven by curriculum derived from national standards for 6–12 mathematics. The focus is on sharpening student tools for the how and enabling them to discuss why.

**Bernadette B. Jackson**

Jackson Instructional Consultants, LLC, Fort Myers, Florida

**Brenda B. Buckley**

Jackson Instructional Consultants, LLC, Fort Myers, Florida

**361 BE (GEORGE R. BROWN CONVENTION CENTER)**

**86**

**Developing a Research-Based Practitioner for Today's Classrooms**

(Preservice and In-Service) Burst

Principles to Actions

Preservice teachers at the University of Houston-Downtown who are mathematics majors are required to complete and present a Senior Project to the department. Several Noyce Mathematics Scholars have chosen research topics based on their professional development work in local schools. We will share the results of their classroom-based research.

**Nancy Anne Leveille**

University of Houston-Downtown, Texas

**Rebecca Judith Quander**

University of Houston-Downtown, Texas

**351 AD (GEORGE R. BROWN CONVENTION CENTER)**

**86.1**

**Assessing a Multidimensional Construct Unidimensionally: Analysis of Large-Scale Mathematics Assessments**

Research) Burst

The presentation will discuss the concept of mathematical literacy from different perspectives identified in the literature as well as its implications for large-scale assessments. It will then share the results from a dimensionality analysis of an internationally well-recognized mathematics assessment, the Programme for International Student Assessment (PISA).

**Adem Ekmekci**

Rice University, Houston, Texas

**351 CF (GEORGE R. BROWN CONVENTION CENTER)**

**87****It's Time to Adjust Our Mindsets about Teaching Mathematics****(General Interest) Session**

This example-laden presentation will look at a set of essential mindset shifts, and their considerable implications for classroom practice, that accompany the realities of the 21st century. This provocative discussion will explore what we need to do as teachers of mathematics, in our classrooms, departments and schools.

**Steven Leinwand**

American Institutes for Research, Washington, D.C.

**GRAND BALLROOM C (GEORGE R. BROWN CONVENTION CENTER)****88****Kinesthetic Strategies for Integrating Math and ELA****(Pre-K–2) Session**

Is your English language arts (ELA) block a *long* ninety minutes? Learn innovative ideas for integrating kinesthetic math practice into ELA. Learn fun, efficient strategies for increasing math instruction time and meeting the CCSSM standards. Gain ideas for increasing your students' focus, attention span, math ability, writing, and creative thinking.

**Suzy Koontz**

National Math Foundation, Ithaca, New York

**352 DEF (GEORGE R. BROWN CONVENTION CENTER)****89****It's Math . . . What's There to Talk About?****(Pre-K–5) Session**

Math is serving the conversation where demonstrating mathematical understanding involves much more than calculating a correct answer. Participants will be introduced to five research-based teacher "moves" to facilitate students' mathematical thinking and learning. Connections will be made to the eight CCSSM mathematical practices.

**Maggie M. Hackett**

Sunnyside Unified School District, Tucson, Arizona

**360 DEF (GEORGE R. BROWN CONVENTION CENTER)****90** **RN****New Longitudinal and Instructional Research on Fractions****(3–5) Session**

This session describes longitudinal research on students' learning of fractions, the importance of knowledge of fractions for longitudinal research, and an effective intervention for struggling fourth graders in the area of fractions. Measures of students' accuracy in placing fractions on a number line best predict future success in algebra.

**Russell Gersten**

Instructional Research Group, Los Alamitos, California

**GRAND BALLROOM B (GEORGE R. BROWN CONVENTION CENTER)****91****Fluency and Number Sense through Problem-Solving Activities****(3–8) Session**

Fluency and flexibility with facts and counting strategies are critical skills based in the CCSSM standards. We will share activities that build fluency and number sense through challenges that take the focus off the embedded practice and place it on problem solving. The activities provide differentiation and connect to the mathematical practices.

**David Hedges**

EDsentials, Inc., San Diego, California

**GRAND BALLROOM A (GEORGE R. BROWN CONVENTION CENTER)****92****Literature Enhanced Mathematics = Mathematical Literacy****(3–8) Session**

Learn how to engage students in mathematical understanding with activities using literature-enhanced mathematics about famous mathematicians: Archimedes, Descartes, Eratosthenes, Euler, Fibonacci, Leonardo da Vinci, and Pythagoras.

**Faye Bruun**

Texas A&amp;M University-Corpus Christi

**360 ABC (GEORGE R. BROWN CONVENTION CENTER)**



93

## The Language of Mathematics: English Language Learners Talk about Math

(3–8) Session

Principles to Actions

This presentation will highlight the findings of a study examining the discourse English language learners (ELLs) engage in during problem-solving sessions and how meaning is made when working through nonroutine word problems. Educators will learn how to support the language needs of these students and gain strategies to scaffold the academic language in the classroom.

Susan M. Kontos

Community Schools of Frankfort, Indiana

342 AD (GEORGE R. BROWN CONVENTION CENTER)

94

## Let's Be Reasonable

(6–12) Session

Our standards include reasonableness, and our assessments include reasonableness, but does our instruction include reasonableness? In this session, participants will examine instructional strategies that help promote students' understanding of reasonableness in mathematics.

Jennifer Castle

Fort Bend ISD, Sugar Land, Texas

Helen King

Fort Bend ISD, Sugar Land, Texas

332 AD (GEORGE R. BROWN CONVENTION CENTER)

95

PS

## LOCUS: A Tool for Assessing Statistical Reasoning in CCSSM

(6–12) Session

This session will present diagnostic assessments for measuring students' understanding of statistics as outlined in the Common Core State Standards and the Guidelines for Assessment and Instruction in Statistics Education. These tools have implications for the research community as well as for classroom teachers, as they can be used in a formative manner.

Catherine Case

University of Florida, Gainesville

Tim Jacobbe

University of Florida, Gainesville

350 DEF (GEORGE R. BROWN CONVENTION CENTER)

96

PS

## Moneyball in the Classroom: Using Baseball to Teach Statistics

(9–12) Session

As illustrated in the movie *Moneyball*, understanding the power of statistical analysis can be very rewarding. Using a formula from the movie, we will learn how to address CCSSM standards about using models to make predictions, calculating residuals, and understanding “least-squares” lines. We will also investigate regression to the mean.

Josh Tabor

Canyon del Oro High School, Oro Valley, Arizona

362 BCEF (GEORGE R. BROWN CONVENTION CENTER)

97

MAJ

## Realizing the Development of Mathematical Practice in Higher Education

(Higher Education) Session

Principles to Actions

Examining the role of problem solving, perseverance, and reasoning in the context of mathematics teacher education is essential to support the development of key mathematical practices described in CCSSM. We will discuss ways of supporting future and experienced teachers in these practices as they engage students in essential mathematics.

Trena L. Wilkerson

Baylor University, Waco, Texas

310 BE (GEORGE R. BROWN CONVENTION CENTER)

98

## Problem Posing with Paper and Pencil and GeoGebra

(Higher Education, Preservice and In-Service) Session

Participants will create problems from a given problem-solving context using paper and pencil or GeoGebra. The goal of the session will be to understand the role of different tools in teachers' problem-creation process. Problems created and teachers' approaches will be shared.

Cetin Kursat Bilir

Purdue University, West Lafayette, Indiana

361 CF (GEORGE R. BROWN CONVENTION CENTER)

12:30 P.M.–1:30 P.M.

**98.1 ew****Discover enVisionmath2.0**

(Pre-K–5) Exhibitor Workshop

Experience how problem-based learning through the CCSSM mathematical practices uniquely develops the depth of understanding and rigor needed for success on high-stakes tests. Materials for grade levels of pre-K–2 and 3–5 are available.

**Pearson**  
Washington, D.C.

**310 CF (GEORGE R. BROWN CONVENTION CENTER)****98.2 ew****Lunch and Learn with NCTM Candidate for President-Elect Dr. Matt Larson**

(9–12) Exhibitor Workshop

Join author Dr. Matt Larson to find out what Texas high school math teachers are raving about! Session includes an overview of Houghton Mifflin Harcourt's Texas high school math programs: Algebra 1, Geometry, and Algebra 2. These new programs are a comprehensive system of math instruction ensuring successful mastery of the TEKS. Designed for a blended learning approach, the series provides a robust digital student experience, a powerful adaptive learning system, and unparalleled teacher support.

**Houghton Mifflin Harcourt**  
Boston, Massachusetts

**320 BE (GEORGE R. BROWN CONVENTION CENTER)**

1:30 P.M.–2:45 P.M.

**99****Let's Get Physical—With Math on the Floor!**

(Pre-K–2) Gallery Workshop

In this highly interactive session, teachers will see the value of kinesthetically exploring math concepts on a large 100-square floor grid. All number sense concepts will be addressed, including calendar, with additional strategies shared for other strands. Ideas for making your own classroom grid will be readily shared. Bring your camera!

**Wendy E. Hill**  
Retired Elementary Teacher, Mississauga, Canada

**361 BE (GEORGE R. BROWN CONVENTION CENTER)****100****Using Concrete Manipulatives to Master Addition**

(Pre-K–2) Gallery Workshop

This interactive session will focus on using base-ten blocks to teach children addition up to 3 digits by 3 digits.

**Elizabeth A. Grossie**  
Iberia Parish School Board, New Iberia, Louisiana

**351 AD (GEORGE R. BROWN CONVENTION CENTER)****101 MAJ****Where Do You Want to Go Tomorrow?**

(Pre-K–5) Gallery Workshop

With new standards to consider, the question in this session's title becomes significant, and an important destination will include place value and properties of operations. On this journey we will visit ideas/lessons/games that inspire/develop/review these concepts. Join us for a fun trip—all resources will be available electronically.

**Mary Alice Hatchett**  
Texas Council of Teachers of Mathematics, Austin, Texas

**332 BECF (GEORGE R. BROWN CONVENTION CENTER)**

**102**

**Building Bridges between the Math You Teach and Algebra**

(Pre-K–5) Gallery Workshop

In 2000 NCTM stated that algebra cuts across all areas of pre-K–12 mathematics. In 2010 CCSSM confirmed that algebraic thinking begins in kindergarten. Yet the progression from single-answer arithmetic to deep mathematics is not clear. Come experience powerful K–8 bridges that connect the dots. Lessons from the speaker’s Corwin book series will be provided.

**Monica Neagoy**

Monica Neagoy Consulting Services, Arlington, Virginia

**362 AD (GEORGE R. BROWN CONVENTION CENTER)**

**103**

**I’m Game, Are You?**

(3–5) Gallery Workshop

Implementing rigorous standards and preparing students to be algebra ready can be a daunting task! Games have proven to be an effective way to teach, practice, and solidify necessary concepts while engaging students. The effectiveness of games is proven, as well as a means of providing differentiation. Join us to learn more: We’re game, are you?

**Diane Reynolds**

Math Solutions, Sausalito, California

**Amy Mayfield**

Math Solutions, Sausalito, California

**351 BE (GEORGE R. BROWN CONVENTION CENTER)**

**104**

**Frogs, Faucets, and French Fries: Examining Proportions through Multiple Lenses**

(6–8) Gallery Workshop

Participants will go on a journey analyzing proportional relationships through the use of counters, strip diagrams, tables, and graphs all within a real-world context. We will move beyond the cross-multiplication algorithm as we explore alternative approaches to promoting multiplicative reasoning.

**Valerie V. Sharon**

Sam Houston State University, Huntsville, Texas

**Mary B. Swarthout**

President, Research Council on Mathematics Learning; Sam Houston State University, Huntsville, Texas

**310 AD (GEORGE R. BROWN CONVENTION CENTER)**

**105**

**NASA: Distance-Rate-Time Mathematics in Air Traffic Control**

(6–8) Gallery Workshop

Apply proportional reasoning, strategic thinking, and problem-solving skills to solve distance-rate-time problems in air traffic control. Use print-based worksheets and an interactive air traffic control simulator to model and solve problems involving two to five airplanes. All materials are free and available on the web or via a mobile app.

**Rebecca A. Green**

NASA Ames Research Center, Moffett Field, California

**Gregory W. Condon**

NASA Ames Research Center, Moffett Field, California

**330 (GEORGE R. BROWN CONVENTION CENTER)**

**106**

**Fun with Fractals and Functions**

(6–12) Gallery Workshop

Are you fascinated by the world of fractals but unsure of how to incorporate them into your teaching? Join us to explore how the famous fractal, Sierpinski’s triangle, can be used to teach a lesson on functions, or as an introduction to sequences and the idea of infinity. Classroom-ready activities include connections to art and technology.

**Alice Fisher**

Rice University School Mathematics Project, Houston, Texas

**Susan Troutman**

Rice University School Mathematics Project, Houston, Texas

**361 AD (GEORGE R. BROWN CONVENTION CENTER)**

Access the **Conference App** for program updates, conference networking, and exhibit info. Download it at [www.nctm.org/confapp](http://www.nctm.org/confapp)



1:30 P.M.—2:45 P.M.

**107****Keeping It Real: Teaching Math through Real-World Questions (High School)**

(9–12) Gallery Workshop

How have video game processor speeds changed over time? If someone's identified by the NSA as a threat, what's the probability that he actually is? We'll explore real-world lessons and projects that teachers can use to address Common Core standards, foster a rigorous understanding of math, and challenge students to think critically about the world.

**Karim K. Ani**

Mathalicious, Charlottesville, Virginia

**Matt Lane**

Mathalicious, Charlottesville, Virginia

**Chris Lusto**

Mathalicious, Charlottesville, Virginia

**342 BECF (GEORGE R. BROWN CONVENTION CENTER)****108** EQ**Math for Social Justice in the Real World**

(9–12, Preservice and In-Service) Gallery Workshop

How can each of us strengthen mathematics teaching in and outside of school, so that ordinary people have the tools necessary to understand and fight for social justice? As background, we will examine the mathematical work of a Toronto-based community group, Stop the Cuts, as they advocated to stop proposed budget cuts and cuts to city services.

**Indigo Esmonde**

University of Toronto, Canada

**340 (GEORGE R. BROWN CONVENTION CENTER)**

**Stay connected!**  
Check us out on  
Twitter and Facebook.

**109** MAJ**Mathematics Coaching Tools to Support Effective Questioning and Discourse**

(Preservice and In-Service) Gallery Workshop

How do students learn to reason mathematically? Teachers' effective questioning and discourse plays a key role. Tools for professional learning can help preservice and practicing teachers grow in questioning and facilitating skills. We will explore such a set of tools and connect to the ultimate goal of developing mathematically proficient students.

**Jennifer M. Bay-Williams**

University of Louisville, Kentucky

**320 AD (GEORGE R. BROWN CONVENTION CENTER)****110****Modeling Problem-Based Learning for Preservice Teachers**

(Preservice and In-Service) Gallery Workshop

Principles to Actions

Problem-based learning (PBL) is a pedagogical technique that is being encouraged for implementation in K–12 mathematics classrooms, but preservice teachers do not always get to experience it firsthand in their mathematics courses. This presentation will discuss the result of using PBL materials in a methods for teaching math course for preservice teachers.

**Mary E. Pilgrim**

Colorado State University, Fort Collins

**351 CF (GEORGE R. BROWN CONVENTION CENTER)**

2:00 P.M.—3:00 P.M.

**111****Constant vs. Coefficient? Changing the Question to Change Assessment**

(General Interest) Session

This interactive presentation will explore how we can change the questions that we ask our students, in order to assess a deeper level of understanding. Participants will be introduced to a model for critical reflection on choices for assessing mathematical learning and understanding.

**Laurie McManus**

St. Louis Community College at Meramec, Missouri

**GRAND BALLROOM B (GEORGE R. BROWN CONVENTION CENTER)**

**112****Fake World Math: Why Modeling Goes Wrong (And How to Get It Right)****(General Interest) Session**

The presenter works with thousands of math educators every year and finds more disagreement about the CCSS modeling standard than any other. So let's try to answer these questions: what is modeling, how do we get our students to do it, and how do we get our students to like it?

**Dan Meyer**  
Stanford University, California

**GRAND BALLROOM A (GEORGE R. BROWN CONVENTION CENTER)****113****From Traditional to Hybrid Classroom****(General Interest) Session**

There is widespread interest in teaching hybrid classes. The presenter has firsthand experience from designing to successfully implementing the blended classroom. This presentation will focus on how to design and develop a math hybrid class, how it could be implemented, and lessons learned. There will be an opportunity to ask questions.

**Gail D. St. Jacques**  
Johnson and Wales University, Providence, Rhode Island

**361 CF (GEORGE R. BROWN CONVENTION CENTER)****114****Three Steps: Align Your Math Curriculum to the Common Core****(Pre-K–5) Session**

This presentation will invite participants to learn three quick steps (beginning in the session) to more closely align their existing math curriculum to the Common Core State Standards using their existing materials and without waiting for state curriculum maps and/or new assessments. Tools and templates will be provided.

**Lisa Anne Palacios**  
American Institutes for Research, Naperville, Illinois

**350 DEF (GEORGE R. BROWN CONVENTION CENTER)****115****Multiplication Fact Fluency Fun****(3–5) Session**

Students who can automatically recall math facts are more capable problem solvers, learn new math skills more quickly, and are more likely to succeed in future math courses. Unfortunately, many students still spend too much time and brainpower on simple facts. Find out how to help students build a strong math fact fluency foundation.

**Kelly D. Gallagher**  
Loudoun County Public Schools, Sterling, Virginia

**360 ABC (GEORGE R. BROWN CONVENTION CENTER)****116 RN****Summing It Up! Debriefing the Mathematics Lesson****(3–5) Session**

Participants will engage in a problem-solving activity involving computation of fractions. The presenter will then engage participants in a debrief of the lesson, highlighting the strategies students may use and showing how to lead discussion surrounding those strategies. Participants will leave with a framework for leading this discussion with their kids.

**Lynne S. Nielsen**  
Louisiana Tech University, Ruston

**352 DEF (GEORGE R. BROWN CONVENTION CENTER)****117 PS****Standard(s) Statistics: Engaging with CCSS Mathematical Practices and Statistical Content****(6–8, Preservice and In-Service) Session**

Explore middle school Common Core content and practice standards for statistics using hands-on and cognitively demanding tasks. Through a series of data-driven activities exploring center, variability, distribution, and informal inference, learn ways to engage students in answering statistical questions through statistical problem solving.

**Susan A. Peters**  
University of Louisville, Kentucky

**332 AD (GEORGE R. BROWN CONVENTION CENTER)**



**118** **EQ****Theory and Activities around Math for Social Justice: An Introduction**

(6–12) Session

Math for social justice is a transformative pedagogy where mathematics, built around the experiences of youth, is used to critically examine social life while working to change the inequities therein. I present an introduction to math for social justice which includes activities, discussion, and sample lessons for participants to engage in.

**Lidia Gonzalez**

York College of the City University of New York, New York

**362 BCEF (GEORGE R. BROWN CONVENTION CENTER)****119****Thinking Outside the Plane**

(9–12) Session

Come find out how a beach ball, some yarn, and a crochet hook can blow your students' minds and make them rethink their preconceived notions of Euclidean geometry. Get your students to think outside the plane by looking at spherical and hyperbolic geometries.

**Kristine K. Dahlquist**

Hawaii Preparatory Academy, Kamuela, Hawaii

**360 DEF (GEORGE R. BROWN CONVENTION CENTER)****120****Does One Lesson Make a Difference?**

(9–12, Higher Education, Research) Session

Principles to Actions

The three action research projects that will be reported in this session provided opportunities to measure the impact of a single lesson on student achievement. If professional development providers, curriculum leaders, or instructional facilitators want the teachers with whom they work to change their practice, they need evidence that it mattered in their classes. This study provides some compelling evidence for making changes in instructional practice.

**Linda K. Griffith**

University of Central Arkansas, Conway

**310 BE (GEORGE R. BROWN CONVENTION CENTER)****121****Math Machines and Algebraic Thinking**

(9–12, Higher Education) Session

With Math Machines, students design, test, and revise mathematical functions to complete dynamic physical tasks such as making a laser follow an object (quadratic functions), simulating earthquakes (logarithms), and making colored lights oscillate in various combinations (periodic functions). Free software will be provided; supported in part by a NSF grant.

**Robert A. Chaney**

Sinclair Community College, Dayton, Ohio

**Frederick J. Thomas**

Learning with Math Machines, Englewood, Ohio

**342 AD (GEORGE R. BROWN CONVENTION CENTER)****122****See Your True Colors**

(9–12, Preservice and In-Service) Session

This presentation will share examples of common mathematical concepts and how students with dyscalculia perceive them. In doing so, teachers will begin to observe a pattern which will allow them to “see” what their students actually see. In addition, concrete strategies for class instruction and test scenarios will be addressed.

**Lori Kiteala**

Consultant, Montreal, Canada

**GRAND BALLROOM C (GEORGE R. BROWN CONVENTION CENTER)****122.1 ew****Share My Lesson**

(General Interest) Exhibitor Workshop

Developed by educators, this free platform gives access to more than 300,000 resources on all subjects and grades, including over 31,000 aligned to the Common Core. This workshop will demonstrate the features of the site, including how to search for resources and how to share your own.

**Share My Lesson**

Washington, D.C.

**310 CF (GEORGE R. BROWN CONVENTION CENTER)**

2:00 P.M.–3:00 P.M.

## 122.2 **ew**

### Imagine a Smarter Approach

(Pre-K–5) Exhibitor Workshop

Imagine a classroom where math makes more sense, engages students, and fosters thinking skills. Discover how ORIGO Stepping Stones shifts instruction to help students learn how to think rather than what to think. Stepping Stones translates mathematical concepts into real-world scenarios, better preparing students for college and career success.

**ORIGO Education**  
Earth City, Missouri

**320 CF (GEORGE R. BROWN CONVENTION CENTER)**

## 122.3 **ew**

### Desserts and Dip into TX High School Math with Dr. Ron Larson

(9–12) Exhibitor Workshop

Join author Dr. Ron Larson to find out what Texas high school math teachers are craving! Session includes an overview of Big Ideas Math® TX Edition: Algebra 1, Geometry, and Algebra 2. This new program is a focused and coherent curriculum with a rigorous and balanced approach. Extensive print resources and dynamic technology for 21st-century classrooms provide students and teachers the tools for mastering the TEKS.

**Houghton Mifflin Harcourt**  
Boston, Massachusetts

**320 BE (GEORGE R. BROWN CONVENTION CENTER)**

3:15 P.M.–4:30 P.M.

## 123 **CP**

### Integrating the Content and Practice Standards for Mathematics

(Pre-K–2) Gallery Workshop

The Standards for Mathematical Practice should guide and support students' interaction with the content to help them to learn the essential skills and underlying concepts needed to be successful at each grade level. This session focuses on grade K–2 activities where the content is approached through the lens of the Standards for Mathematical Practice.

**Ann Roman**  
Charles A. Dana Center, University of Texas, Austin

**342 BECF (GEORGE R. BROWN CONVENTION CENTER)**

## 124

### Teaching Common Core Addition and Multiplication Strategies on the iPad

(Pre-K–5) Gallery Workshop

The Common Core emphasizes using strategies to learn math facts. Learn about iPad apps that emphasize learning strategies while also helping kids memorize their addition and multiplication facts. In this session, we'll play with the apps and also learn how to share iPad screens on the projector. Some iPads provided, but BYO iPad if you have one.

**Kara K. Carpenter**  
Teachley, New York, New York  
**Rachael Labrecque**  
Teachley, New York, New York

**340 (GEORGE R. BROWN CONVENTION CENTER)**

## 125

### Linking the Learning: Domino Games for Upper Elementary

(3–5) Gallery Workshop

Principles to Actions

Come prepared to play games that incorporate the use of standard dominoes that teach the following Common Core standards: operations, patterns, fractions, place value, problem solving, and data management. This manipulative is easy to use and integrate into your program and is motivating for all learners. Gameboards, student samples, and more will be shared.

**Jane Felling**  
Box Cars and One-Eyed Jacks, Edmonton, Canada

**320 AD (GEORGE R. BROWN CONVENTION CENTER)**



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

3:15 P.M.–4:30 P.M.

**126****Literature and Games: Great Ways to Teach Fractions**

(3–5) Gallery Workshop

Fractions are tough for students to learn and teachers to teach. Learning should engage students in both hands-on and minds-on experiences. Teachers can use books and games that give numerous chances to connect their thinking and reasoning while building their understanding. Come read, play, learn, and walk away with ways to engage your students.

**Rebecca D. Rappaport**

Centronia/DC Bilingual Public Charter School, Washington, D.C.

**Heather E. Kurtz**

Centronia/DC Bilingual Public Charter School, Washington, D.C.

**Jan Scott**

Scholastic, Inc., New York, New York

**362 AD (GEORGE R. BROWN CONVENTION CENTER)****127****Tabor Rotation: A Framework for Math Stations and Guided Math**

(3–5) Gallery Workshop

How can a teacher successfully and easily meet and exceed the needs of all learners on a regular basis? This session will explore the specific components of the Tabor Rotation Framework and how each helps you build engaging math stations and guided math groups. Come learn how to plan for all the essential elements of balanced math and have fun, too!

**Glenna Tabor**

Glenna Tabor Resources, LLC, Houston, Texas

**361 BE (GEORGE R. BROWN CONVENTION CENTER)**

3:15 P.M.–4:30 P.M.

**128****Common Core Mathematics Upside Down: Flipping PD and Engaging Teachers!**

(3–8) Gallery Workshop

This session will involve math leaders using several “flipped” classroom activities for professional learning. It will include suggested use of digital resources that can be used anywhere/anytime as well as on-site professional development (PD) activities, all reflecting the CCSSM content domains and Standards for Mathematical Practice.

**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

**330 (GEORGE R. BROWN CONVENTION CENTER)****129****What Mathematics Is Happening in Your Life?**

(3–8) Gallery Workshop

Participants will learn how to teach their students to become rigorous problem solvers as they become confident in explaining their work. Participants will receive samples of students work on “what math happened to you today” and then work together in groups to come up with their own math stories.

**Queen Ogbomo**

Tennessee Technological University, Cookeville

**351 CF (GEORGE R. BROWN CONVENTION CENTER)****Join us at the 2015 Regional Conferences:**

Atlantic City • October 21–23

Minneapolis • November 11–13

Nashville • November 18–20



3:15 P.M.–4:30 P.M.

**130**

### **Baseball, Billiards, and Cash Cab: Fun Ways to Develop Mathematical Practices**

(6–8) Gallery Workshop

Play a baseball game and incorporate the Pythagorean theorem to determine the distance to home. Create billiard tables and use the ratio of the tables to determine which corner the ball will land. Play Cash Cab to find treasures on the city streets. Learn these games and how they help to develop the Standards for Mathematical Practice.

**Mary A. Curry**

MANGO Math Group, Snohomish, Washington

310 AD (GEORGE R. BROWN CONVENTION CENTER)

**131**

### **Delving Deeper with the Pythagorean Theorem**

(6–8) Gallery Workshop

Principles to Actions

Many students are exploring the Pythagorean theorem through area models. Learn how to go beyond this by exploring the relationship among the areas of squares on the side lengths of acute and obtuse triangles. Come to this workshop and play the role of a student as you develop a deeper understanding of how these triangles are related to one another.

**Jane Porath**

Traverse City Area Public Schools, Michigan

351 BE (GEORGE R. BROWN CONVENTION CENTER)

**132**

### **A Gentle Introduction to Writing Proofs via Problem Solving**

(6–12) Gallery Workshop

Participants will work on an engaging set of problems that naturally call for proving results. Problems are based on numeric questions, algebra, geometry, and logic. They are accessible and motivating to secondary students. We'll share student work and discuss how this material supports many of the Common Core Standards for Mathematical Practice.

**James R. Matthews**

Siena College, Loudonville, New York

361 AD (GEORGE R. BROWN CONVENTION CENTER)

**133**

### **Examining Mathematical Proof through the Lens of Euclidean Constructions**

(9–12) Gallery Workshop

Euclidean constructions provide opportunities for constructing proofs as justifications. Explore the relationship between Euclidean constructions and mathematical proof. Learn how to use a variety of construction tools, investigate their similarities and differences, and determine which are best for certain geometric constructions.

**Anne Papakonstantinou**

Rice University, Houston, Texas

332 BECF (GEORGE R. BROWN CONVENTION CENTER)

**134**

### **Illuminate Your Classroom and Teach Conceptually Using Free Virtual Manipulatives**

(Preservice and In-Service) Gallery Workshop

Come explore Illuminations' free virtual manipulatives to keep up with the technological trends in education! These physical and virtual manipulatives allow students to create conjectures, develop reasoning skills, and explore mathematics conceptually. Questions for students, pedagogical recommendations, and accompanying resources will be provided.

**Ann Kong**

National Council of Teachers of Mathematics, Reston, Virginia

351 AD (GEORGE R. BROWN CONVENTION CENTER)

3:30 P.M.–4:30 P.M.

**135**

### **"Count On" Assistive Technology to Bridge the Common Core**

(General Interest) Session

Educators are challenged with incorporating Common Core standards regardless of students' abilities. We will highlight an implementation model that includes four key components which has resulted in significant student progress, increased assistive technology opportunities, and students demonstrating metacognition of math.

**James Larocco**

Eisenhower Cooperative, Crestwood, Illinois

**Kara Bergths**

Eisenhower Cooperative—Developmental Learning Program, Midlothian, Illinois

361 CF (GEORGE R. BROWN CONVENTION CENTER)

Thursday

**136****Creating Growth Trajectories with Quantile Measures from Scholastic Math Inventory***(General Interest) Session*

Setting student growth goals is a precise and individualized task that when thoughtfully implemented can unify a school's conversation about math achievement. In this session, new research about setting math growth goals with Scholastic Math Inventory data will help educators sharpen their efforts to predict growth and forecast outcomes.

**Mario Yepes-Baraya**

Scholastic, Inc., New York, New York

**Jan Scott**

Scholastic, Inc., New York, New York

**310 BE (GEORGE R. BROWN CONVENTION CENTER)****137****Doorstep Delivery! Assessment Design and Discussion***(General Interest) Session*

Ready to deliver to your doorstep—a discussion about determining and designing assessments! In an era of student accountability and high-stakes testing, assessment practices serve as an important responsibility. Learn and discuss research on the challenges involved in assessment, with recommendations for determining which factors accurately represent student achievement.

**Diana M. Yesbeck**

Randolph-Macon College, Ashland, Virginia

**360 DEF (GEORGE R. BROWN CONVENTION CENTER)****138****President's Session: Turning College and Career-Ready Standards into Student Learning: What It Takes***(General Interest) Session**Principles to Actions*

High-quality standards are necessary, but not sufficient, to support high levels of students learning in mathematics. Teaching matters! Learn the most effective teaching practices to support students' development of conceptual understanding, procedural fluency, and habits of mind required for high-level mathematics learning, along with the supports required to implement them, as described in NCTM's new publication *Principles to Actions: Ensuring Mathematical Success for All*.

**Diane J. Briars**

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

**GRAND BALLROOM A (GEORGE R. BROWN CONVENTION CENTER)****139****Becoming Numerically Nimble: Effective Practices That Lead to Fluency***(Pre-K–2) Session*

Be more efficient and selective about time devoted to number. Highly engaging games and instructional strategies will help you enhance number sense, build confidence and competence in your students, and increase their fluency with number.

**Laura Choate**

Fallbrook Union Elementary School District, California

**360 ABC (GEORGE R. BROWN CONVENTION CENTER)****140****Four Types of Addition Facts That Help Develop All Others***(Pre-K–2) Session**Principles to Actions*

There are four types of addition facts that we should focus on first and then use to help students develop fluency with all their addition facts. The four types are; Doubles, +0, Make a 10, and 10 + something. This session will look at activities that build these four types of facts and the connections to all other addition facts.

**Christina Tondevoid**

Mathematically Minded, LLC, Orofino, Idaho

**352 DEF (GEORGE R. BROWN CONVENTION CENTER)**

A big thank-you to our exhibitors, sponsors, volunteers, and speakers!





**141****Good Questions That Promote Student Understanding**

(3–5) Session

The mathematical practices call for students to reason and construct mathematical arguments. Good questions probe student thinking, lead to deeper understanding, and help to differentiate instruction. What to ask and when to ask it is the key. Let's look at some elementary concepts and great questions to go with them!

**Linda M. Gojak**

Past President, National Council of Teachers of Mathematics; John Carroll University, University Heights, Ohio

**350 DEF (GEORGE R. BROWN CONVENTION CENTER)****142****Rethinking Fractions: Implications for What We Teach in Grades 3–9**

(3–8) Session

Evidence suggests the typical approach to fractions does not connect with many students. An approach based on unit fractions and the number line, augmented by dynamic interactive technology, can give students a coherent, mathematically sound story about fractions that has the potential to address misconceptions and make a difference across grades.

**Gail Burrill**

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

**GRAND BALLROOM C (GEORGE R. BROWN CONVENTION CENTER)****143****Simulations Are Worth a Million Words!**

(3–8) Session

Math topics come to life and student depth of understanding soars when using online simulations to introduce, develop, and expand conceptual understanding of math. Participants will experience the incorporation of live simulations to develop academic vocabulary and the conceptual understanding of math concepts such as fractions.

**Connie C. Kilday**

ExploreLearning, Charlottesville, Virginia

**342 AD (GEORGE R. BROWN CONVENTION CENTER)****144 MAJ****How Do I Know What My Students Know?**

(6–8) Session

What should we be looking and listening for as our students develop their mathematics in our classrooms? We must build conceptual understanding as we teach to meet standards. Let's determine how we should assess our students' learning using formative assessment.

**Emma Trevino**

Educational Policy Analyst/Bechtel Math Grant Project Manager, San Francisco Unified School District, California

**GRAND BALLROOM B (GEORGE R. BROWN CONVENTION CENTER)****145****Advanced Algebra with Financial Applications: Real World, Real Math**

(9–12) Session

Advanced Algebra with Financial Applications is a quantitative financial literacy, third/fourth year course for all ability levels. Students learn selected topics in algebra 2, probability, statistics, and precalculus, with an algebra 1 prerequisite, while covering banking, taxes, insurance, credit, investing, budgeting, and more!

**Richard J. Sgroi**

Bedford Central Schools, New York

**362 BCEF (GEORGE R. BROWN CONVENTION CENTER)****146****What to Expect When You're Electing: The Mathematics of Elections**

(9–12, Higher Education) Session

How do we determine who wins an election? It seems obvious, but different reasonable voting methods can lead to different winners. In fact, it can be proven that there is no "perfect" voting system. We will look at some of these considerations and show how to bring mathematics into what most people consider to be a nonmathematical subject.

**Jonathan R. Corbett**

Harris-Stowe State University, St. Louis, Missouri

**Ann Podleski**

Harris-Stowe State University, St. Louis, Missouri

**332 AD (GEORGE R. BROWN CONVENTION CENTER)**

3:30 P.M.–4:30 P.M.

**146.1 ew**  
**Teaching Number Sense with Math Buddies, the Singapore Online Resource**

(Pre-K–5) Exhibitor Workshop

Research shows that number sense is built on mastery of place value as well as number facts. We'll discuss place value as a fundamental element of Singapore Math® as well as number bonds and part-whole thinking. We'll make use of Math Buddies, a K–5 digital resource, to take students through the concrete-pictorial-abstract approach to number sense. Available for grade bands pre-K–2 and 3–5.

**Marshall Cavendish**  
 Tarrytown, New York

**310 CF (GEORGE R. BROWN CONVENTION CENTER)**

**146.2 ew**  
**This Isn't Your Grandma's Textbook: Effective Teaching with Innovative Ideas**

(6–12) Exhibitor Workshop

From Foldables™ to tablets, key ways to interact with high school math students will be demonstrated. The focus will be on personalized teaching and learning with robust tools to help you plan for the day and prepare for classroom success in the grade bands 6–8 and 9–12.

**McGraw-Hill Education**  
 Columbus, Ohio

**320 CF (GEORGE R. BROWN CONVENTION CENTER)**

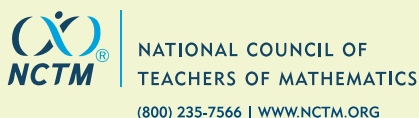
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*Located in NCTM Central of the exhibit hall.*



## Highlights

- Regional Conference Overview & Orientation, **147**
- Addition and Subtraction Fact Fluency! What Does It Take?, **149**
- Equity Connections with High School Probability/Statistics Content, **158**
- The 5 Elements of Effective Thinking through Mathematics, **173**
- Math Rocks: Guided Math Instruction in Action!, **177**
- New and Preservice Teachers Workshop, **195**
- Modeling as Both Means and Ends to Learning Valued Mathematics, **197**
- Formative Assessment Ideas for the Middle Grades, **204**
- Using MTMS in the Classroom, **212**
- Narrowing the Gap between Typical Practice and Research-Affirmed Practice, **231**

Icon	Presentation Numbers
 Integrating the Content and Practice Standards for Mathematics	151, 171, 194
 Equity, Culture, and Social Justice	163, 201
 Exhibitor Workshops	159.1, 159.2, 183.1, 183.2, 183.3, 207.1, 207.2, 207.3, 243.1, 243.2, 243.3, 267.1, 267.2, 267.3
 Major Speakers	158, 207, 208, 213, 219, 245, 252, 264, 265, 267
 Probability and Statistics for Secondary Grades (6–12)	156, 158, 193, 242
 Tackling Rational Numbers K–8: Number Relationships from Counting to Ratios	166, 188, 237, 256, 272



### Conference App

Network onsite with attendees!  
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### Facebook

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 #NCTMHouston

### Registration Hours

7:00 a.m.–3:00 p.m.

### Exhibit Hours

8:00 a.m.–4:00 p.m.

### Bookstore and Member Services 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.

**147****Regional Conference Overview and Orientation**

(General Interest) Session

Whether you are new to NCTM or a seasoned veteran, there is something new for everyone! Hosted by members of the Board of Directors, you will learn 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, 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!

**Ruth Harbin Miles**

Mary Baldwin College/Falmouth Elementary School, Staunton/Stafford, Virginia

**Jane Porath**

Traverse City Area Public Schools, Michigan

**362 BCEF (GEORGE R. BROWN CONVENTION CENTER)**

8:00 A.M.–9:00 A.M.

**148****Assessing Students' Sense Making and Reasoning: Formatively and Summatively**

(General Interest) Session

Student behaviors in making sense of mathematics and in demonstrating reasoning are critical. Too often, these are done in isolation, and without meaning. Recommendations, strategies, and techniques to expand teacher effectiveness in obtaining, reflecting on, and making decisions based on students' activity, oral and written communications, and work samples.

**Henry S. Kepner**

Past President, National Council of Teachers of Mathematics; University of Wisconsin–Milwaukee

**GRAND BALLROOM C (GEORGE R. BROWN CONVENTION CENTER)****149****Addition and Subtraction Fact Fluency! What Does It Take?**

(Pre-K–2) Session

This session will share strategies for achieving addition and subtraction fact fluency using a teach-for-understanding model. Participants will learn the order of the strategies to be taught and practiced. Kim will share her motivating style of using games, songs, dances, and drills that thrill all learners!

**Kim Sutton**

Self-Employed Consultant, Arcata, California

**362 BCEF (GEORGE R. BROWN CONVENTION CENTER)****150****Math Conferences for Assessing, Teaching, and Learning**

(Pre-K–5) Session

Confer one-on-one with your students to assess their level of mathematical understanding, give feedback, and lead them to their next steps in learning. Your students' level of comprehension becomes clearly visible as they communicate their thinking. With your support, students focus on setting learning goals and self-assessing their progress.

**Laney A. Sammons**

Independent Mathematics Consultant, Tunbridge, Vermont

**310 BE (GEORGE R. BROWN CONVENTION CENTER)****151****CP****Math Talks to Implement the Standards for Mathematical Practice**

(3–5) Session

This session will focus on number sense and developing fluency through place value and properties for addition, subtraction, multiplication and division. Math Talks will allow students to delve deep into the practices of reasoning abstractly and quantitatively, justification and persevering in solving problems.

**Monica S. Johnson Rock**

Hayward Unified School District, California

**350 DEF (GEORGE R. BROWN CONVENTION CENTER)**

NCTM newbie? Attend the **Regional Conference Overview & Orientation** to learn how to enhance your conference experience and maximize your membership's benefits. See page 3 for details.

**CP** Integrating the Content and Practice Standards**EQ** Equity**EW** Exhibitor Workshop**MAJ** Major Speakers**PS** Probability and Statistics for Secondary Grades**RN** Tackling Rational Numbers K–8

**152**

**Generating Interest in and Excitement for Real Problem Solving**

(3–8) Session

Generate excitement and interest in your students for problem solving. Energize and enrich your curriculum by encouraging students to take risks in problem solving while reminding them that a *real* problem is not the same as a practice exercise. Reduce the need to “cram” for any states’ assessments by utilizing the methods and the types of questions discussed in this session.

**Nicholas J. Restivo**

Retired, Mineola Union Free School District, Mineola, New York

**360 DEF (GEORGE R. BROWN CONVENTION CENTER)**

**153**

**Core within the Core: Algebra Readiness for ALL**

(6–8) Session

Do your students look puzzled when you talk about multiplication? Do they tremble when you mention fractions? Is it difficult for you to motivate them? This session focuses on best practices to get your middle schoolers ready for algebra.

**Jan Scott**

Scholastic, Inc., New York, New York

**352 DEF (GEORGE R. BROWN CONVENTION CENTER)**

**154**

**Using Nonroutine Problems to Better Understand Students’ Reasoning**

(6–8) Session

Engaging students in writing about their reasoning to solve nonroutine problems can give teachers deep insights into what students understand. Workshop participants will work through a set of nonroutine problems and then discuss how (with rubrics provided) to utilize these to gain insight into student reasoning and sense making.

**Garold J. Furse**

Lincoln Public Schools, Nebraska

**360 ABC (GEORGE R. BROWN CONVENTION CENTER)**

**155**

**Engaging Students via Technology with Video Tasks**

(6–12) Session

This session will examine how to engage, motivate, and teach the iGeneration (the Internet Generation). Participants will be provided with videos tasks and motivational strategies for students in grades 5–10 that can lead to building better number sense and algebraic skills.

**Eric Milou**

Rowan University, Glassboro, New Jersey

**GRAND BALLROOM B (GEORGE R. BROWN CONVENTION CENTER)**

**156** **PS**

**Making Sense of Regression: From Common Core to AP Statistics**

(6–12) Session

AP Statistics requires a formal discussion concerning regression but the basic concepts start as part of grade 8. In this session we examine the progression of this strand from Common Core introduction in eighth grade through AP. Classroom examples and activities from grade 8, algebra II, and precalculus, as well as AP will be discussed.

**Michael Legacy**

Greenhill School, Addison, Texas

**332 AD (GEORGE R. BROWN CONVENTION CENTER)**

**157**

**Avatars: Where Mathematics Meets Audio and Video**

(9–12, Higher Education) Session

Principles to Actions

Examine animation that is dependent on video and audio applications that require and integrate mathematics and technology and that includes the following: large data sets necessary to handle images and sound via matrices; discrete and real numbers; and a focus on cross-disciplinary problem-solving methods and experiential learning opportunities for students.

**Susan G. Helser**

Mott Community College, Flint, Michigan

**342 AD (GEORGE R. BROWN CONVENTION CENTER)**



8:00 A.M.—9:00 A.M.

**158** **PS** **MAJ**  
**Equity Connections with High School Probability/Statistics Content**

(9–12, Higher Education) Session

A founding co-editor of *Teaching for Excellence and Equity in Mathematics*, this former high school teacher shares real-world equity issues that can motivate meaningful and memorable explorations of statistics, including racial profiling, drug testing, jury selection, and income inequality. Explore guiding principles, pedagogical tips, and resources.

**Lawrence M. Lesser**  
University of Texas at El Paso

**GRAND BALLROOM A (GEORGE R. BROWN CONVENTION CENTER)**

**159**  
**Using Lesson Study with Preservice Secondary Mathematics Teachers**

(Preservice and In-Service, Research) Session

This presentation will examine the impact of using lesson study with preservice secondary mathematics teachers as they move from a methods classroom to their field-experience classroom. The efficacy of the preservice teachers will be examined.

**Jim Mostofo**  
Grand Canyon University, Phoenix, Arizona

**361 CF (GEORGE R. BROWN CONVENTION CENTER)**

**159.1** **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 fifty state standards, IXL delivers truly differentiated, thoughtfully crafted technologies to engage students and close achievement gaps in K–12.

**IXL Learning**  
San Mateo, California

**320 BE (GEORGE R. BROWN CONVENTION CENTER)**

**159.2** **ew**  
**Notebook Foldables® for Secondary Math**

(6–12) Exhibitor Workshop

Recharge your middle and high school students' math journals and turn on the motivation factor via 3-D interactive graphic organizers, also known as Notebook Foldables®. Depart with a mini-composition book filled with immediately useable ideas sure to foster lasting understanding—even in your most reluctant learners.

**Dinah-Might Adventures**  
San Antonio, Texas

**320 CF (GEORGE R. BROWN CONVENTION CENTER)**

8:00 A.M.—9:15 A.M.

**160**  
**Building a Solid Foundation in Number Sense**

(Pre-K–2) Gallery Workshop

Principles to Actions

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.

**Christina Tondevold**  
Mathematically Minded, LLC, Orofino, Idaho

**Lynn Rule**  
Retired Teacher, Wheaton, Illinois

**330 (GEORGE R. BROWN CONVENTION CENTER)**

**161****Building Links between Addition and Subtraction: Concepts and Number Facts**

(Pre-K–2) Gallery Workshop

Principles to Actions

Addition and subtraction are closely linked. This session will demonstrate strategies that can be used to reinforce the connection between these operations and to develop flexible thinking. In particular the session will show practical ways to develop number facts for both operations through the use of visual materials and games.

**James Leslie Burnett**

ORIGO Education, St. Charles, Missouri

**310 AD (GEORGE R. BROWN CONVENTION CENTER)****162****Calendar Time: Rebranded**

(Pre-K–5) Gallery Workshop

Calendar time . . . 177 days of boredom and redundancy. Instead of yawns and singing the “days of the week” song over and over again, engage your learners with new and exciting strategies! Transform the one-man show into a symphony of mathematicians! Learn about Roll a 6, Boogie Boards, What’s the Question, and more strategies to wake up the brain!

**Diana Saylak**

Coppell Independent School District, Texas

**362 AD (GEORGE R. BROWN CONVENTION CENTER)****163** **EQ****Math Ideologies: How Classroom Experience Influences Students’ Ideologies about Fractions**

(3–5) Gallery Workshop

We examine the impact of teacher ideologies about mathematics in a diverse classroom of students studying fractions. Using video of classroom instruction and student interviews, we investigate discourse, language practice, and how ideologies of the teacher influence student conceptions about fractions and their identity as learners and doers of math.

**Lisa Jones**

University of Illinois at Chicago

**Delaina Washington**

University of Illinois at Chicago

**340 (GEORGE R. BROWN CONVENTION CENTER)****164****A Clever Approach to Teaching and Solving Word Problems**

(3–5, Preservice and In-Service) Gallery Workshop

Principles to Actions

Can we teach word problems in a way that works for students of all abilities? Join Greg Tang and experience firsthand his clever, self-guided system that teaches kids to persevere and solve word problems—on their own. You will learn strategies that make word problems easy to solve and get access to materials that make word problems easy to teach.

**Greg Tang**

GregTangMath.com, Cambridge, Massachusetts

**332 BECF (GEORGE R. BROWN CONVENTION CENTER)****165****Where Is Number in Algebraic Reasoning?**

(3–8) Gallery Workshop

Get ready to experience engaging algebraic reasoning activities that transform arithmetic and real-world problems into opportunities for discovering numerical patterns, making generalizations, and justifying solutions. Leave with classroom-ready activities and ideas that you can use immediately.

**Carolyn L. White**

Rice University School Mathematics Project, Houston, Texas

**Susan Troutman**

Rice University School Mathematics Project, Houston, Texas

**351 BE (GEORGE R. BROWN CONVENTION CENTER)****166** **RN****Equal Sharing Problems and Middle Grades Students’ Solution Strategies**

(6–8) Gallery Workshop

Equal sharing problems have been used and studied extensively in the elementary grades. This problem type has been shown to be robust for eliciting and extending students’ understandings of fractions as quantities and fraction equivalence. This session will explore the advantages of posing equal sharing problems to middle school students.

**Laura B. Kent**

University of Arkansas, Fayetteville

**342 BECF (GEORGE R. BROWN CONVENTION CENTER)**

8:00 A.M.–9:15 A.M.

**167**

### **Geometry: Develop a Deeper Understanding of Area, Surface, and Volume**

(6–8) Gallery Workshop

Develop a deeper understanding of area, surface area, and volume through estimation, measurement, and investigation of formulas used to calculate two- and three-dimensional geometric objects. Build up a greater knowledge and appreciation for geometric shapes in the world around us.

**Josephine G. Abington**

Lafayette Parish School System, Louisiana

**320 AD (GEORGE R. BROWN CONVENTION CENTER)**

**168**

### **Tools for Thinking**

(6–8) Gallery Workshop

Energize and enrich your classroom with three interactive strategies: Logic Lineups, Odd One Out, and Team Interview. Explore how to actively involve every student in mathematical thinking and communicating. Learn to create an environment which promotes reasoning so students discover mathematical truths. Learn it today—use it tomorrow!

**Rob Jutras**

Kagan Publishing and Professional Development, San Clemente, California

**351 AD (GEORGE R. BROWN CONVENTION CENTER)**

**169**

### **How Symmetry Works Its Magic**

(6–8, Preservice and In-Service) Gallery Workshop

Students learn best through manipulation and building of models—come to discover how to turn geometry into fun and play. Construct physical representations of 3-D reflection and rotation. Learn strategies for finding and exploring symmetry of simple and exotic solids to deepen student’s understanding of basic, yet difficult, concepts.

**Aniceta Skowron**

Geometro, Ancaster, Canada

**351 CF (GEORGE R. BROWN CONVENTION CENTER)**

**170**

### **“Pedi for the Lady” and Other Area and Volume Activities**

(9–12) Gallery Workshop

Ever wondered how much polish it would take to give the Statue of Liberty a Pedicure? Delve into activities where innovative ideas are shared to make finding the area and volume of irregular shapes interesting. Solutions will be found through Riemann sums and integration using hands-on methods as well as graphing calculators.

**Lorie C. McFee**

North Buncombe High School, Weaverville, North Carolina

**361 AD (GEORGE R. BROWN CONVENTION CENTER)**

**171** **CP**

### **Structure and Regularity in Repeated Reasoning in High School Mathematics**

(9–12) Gallery Workshop

What do Standard for Mathematical Practice 7 (“Look for and make use of structure”) and 8 (“Look for and express regularity in repeated reasoning”) look like in a high school math classroom? How can they be integrated with content to support greater student learning? We will collaboratively explore these thoughts and examine ideas for using SMP.7 and 8.

**Katey Arrington**

Charles A. Dana Center, University of Texas, Austin

**361 BE (GEORGE R. BROWN CONVENTION CENTER)**

9:30 A.M.–10:30 A.M.

**172**

### **Momentum for Rigor and the Standards for Mathematical Practice**

(General Interest) Session

Moving forward with the Standards for Mathematical Practice will significantly change student learning in mathematics by dramatically changing how teachers teach. Transforming classroom instruction will involve an expectation for mathematical rigor, an elusive term. What is rigor and how do we implement it in the mathematics classroom?

**Don S. Balka**

Saint Mary’s College, Notre Dame, Indiana

**GRAND BALLROOM B (GEORGE R. BROWN CONVENTION CENTER)**

**173**

### **The 5 Elements of Effective Thinking through Mathematics**

(General Interest) Session

Principles to Actions

Here we will reflect on the practical change required throughout our mathematics courses and our mathematics curriculum to realize the two paramount goals of education: engaging minds and transforming lives. All are welcome to join the thought-provoking conversation to further provoke thought.

**Edward B. Burger**

Southwestern University, Georgetown, Texas

**GRAND BALLROOM C (GEORGE R. BROWN CONVENTION CENTER)**

**174**

### **Helping At-Risk Children Visualize Measurement through Literature**

(Pre-K–2) Session

At-Risk children have difficulty visualizing abstract mathematics concepts. With literacy-based instruction, at-risk children can develop understanding of measurement. By including manipulatives and investigating their immediate surroundings, these students explore abstract interrelationships of measurement and data.

**Rupam Saran**

Medgar Evers College, City University of New York, New York,

**350 DEF (GEORGE R. BROWN CONVENTION CENTER)**

**175**

### **Exploring Problem Solving with Zip-Loc Bags, Hankies, and Berry Baskets**

(Pre-K–2, Preservice and In-Service) Session

Hands-on and mind-provoking problem-solving activities incorporating readily available supplies, such as Zip-Loc bags, paper towels, and berry baskets will be shared. Relevant literature will be incorporated.

**Winifred A. Mallam**

Texas Woman's University, Denton, Texas

**360 DEF (GEORGE R. BROWN CONVENTION CENTER)**

**176**

### **Making Technology Work in the Elementary Math Classroom**

(Pre-K–5) Session

With new standards in place and an increase in computer-based testing, elementary teachers are looking for new ways for students to use technology. This presentation will explore topics such as using QR codes, classroom-friendly social media, video word problems, and school-wide online math contests. A digital list of resources will be provided.

**Jennifer O'Sullivan**

Florida Atlantic University Schools, Boca Raton

**332 AD (GEORGE R. BROWN CONVENTION CENTER)**

**177**

### **Math Rocks: Guided Math Instruction in Action!**

(3–5) Session

Principles to Actions

Learn how to offer small-group guided math instruction within the Common Core State Standards. We will focus on building proficiency, increasing the quantity and quality of math discourse, analyzing student work, and providing strategic intervention and meaningful enrichment to help all students strengthen academic performance.

**Jennifer Taylor-Cox**

Consultant, Severna Park, Maryland

**GRAND BALLROOM A (GEORGE R. BROWN CONVENTION CENTER)**

**178**

### **Mathematics Instruction and Assessment: "Seeing" the Connection**

(3–8) Session

Principles to Actions

Instruction and assessment must be mutually informing. Participants will explore how to plan for instruction and assessment for their K–8 classrooms with the learning goal in mind. Classroom video of students engaged in tasks supportive of both instruction and assessment will be shared, as participants explore what it means to connect them.

**Juli K. Dixon**

University of Central Florida, Orlando

**342 AD (GEORGE R. BROWN CONVENTION CENTER)**

**179****Projects: Assessing Student Understanding**

(6–8) Session

Projects provide an additional way to assess students, they are engaging, and you don't have to lose a lot of teaching time! Projects tied to specific content standards and mathematical practices will be shared, along with student samples and rubrics.

**Laurie Boswell**

The Riverside School, Lyndonville, Vermont

**362 BCEF (GEORGE R. BROWN CONVENTION CENTER)****180****24 Activities for All Math Classes**

(6–12) Session

Learn over twenty fun activities that can be adapted for any level of math class. Activities range from pair work and group work to full-class activities. Some are games, while others promote mathematical discourse and reasoning. Participants will also learn some math songs and project ideas.

**Gregory S. Fisher**

Mount Tabor High School, Winston-Salem, North Carolina

**Fred Thompson**

East Forsyth High School, Kernersville, North Carolina

**352 DEF (GEORGE R. BROWN CONVENTION CENTER)****181****Explore Quantitative and Categorical Paired Data in Context with CCSSM**

(6–12) Session

Bivariate, or paired data, is a topic for nine of the Common Core standards, including four for grade 8. In this session, we will explore quantitative data in context, including scatterplots, linear models, and correlation. We will also explore categorical data in context, including frequency tables, and the joint, marginal, and conditional frequencies.

**John J. Diehl**

CTAC, Plano, Texas

**360 ABC (GEORGE R. BROWN CONVENTION CENTER)****182****Curriculum Alignment as a Component of Math Teacher Development**

(9–12, Higher Education) Session

This session will discuss how math faculty helped a community to identify and solve areas of curriculum non-alignment, and to create high school course enhancements, so that high school graduates would be prepared to succeed in college STEM courses. Steps included a targeted mathematics graduate course and development of curriculum alignment tools for high school teachers.

**Mikhail M. Bouniaev**

University of Texas at Brownsville

**Jerzy Mogilski**

University of Texas at Brownsville

**James Hilsenbeck**

University of Texas at Brownsville

**361 CF (GEORGE R. BROWN CONVENTION CENTER)****183****A Pathway to Success: Implementing the Common Core**

(Preservice and In-Service) Session

The Common Core standards are not intended to be new names for old ways of doing business. They are a call to take the challenge, roll up our sleeves, and begin the process of implementation. In this session, you will learn what an elementary academic coach did to develop a pathway to success in her school.

**Denise Burson**

Educational Achievement Consultants, Newnan, Georgia

**310 BE (GEORGE R. BROWN CONVENTION CENTER)****183.1 ew****Formative Assessment and Hands-On Instruction for RtI, TEKS, and CCSS Success!**

(General Interest) Exhibitor Workshop

Moving with Math programs for pre-K–12 integrate the four essential elements of RtI: universal screening, decision making, explicit instruction, and progress monitoring. Strategies using the C-R-A methodology that have proven successful for reaching all students will be shared. Teachers and math directors love the ease of use and improved results.

**Math Teachers Press, Inc.**

Minneapolis, Minnesota

**320 CF (GEORGE R. BROWN CONVENTION CENTER)**



9:30 A.M.–10:30 A.M.

### 183.2 **ew**

## Investigations in Number, Data, and Space

(Pre–K–5) Exhibitor Workshop

Experience CCSSM through Investigations and the Common Core—interactive whiteboard, assessment, and differentiated activities that focus on the Common Core content standards and embed the Standards for Mathematical Practice. This program will be shared for use in your classroom.

**Pearson**  
Washington, D.C.

310 CF (GEORGE R. BROWN CONVENTION CENTER)

### 183.3 **ew**

## Teaching Statistics in the Middle Grades

(6–8) Exhibitor Workshop

In this session, we will share classroom activities (focusing on grades 6–8) that engage students in meaningful investigations of the real world through data and statistics. Learn how incorporating technology into your lessons can open opportunities for mathematical dialogue among your students and help them make stronger connections in mathematics.

**Texas Instruments**  
Dallas, Texas

320 BE (GEORGE R. BROWN CONVENTION CENTER)

9:45 A.M.–11:00 A.M.

### 184

## Building Number Sense with Ten Frames and Rekenreks

(Pre–K–2) Gallery Workshop

Explore the use of ten frames and rekenreks to build your students' number sense during classroom routines, games, lessons, and number talks. Leave with a deeper understanding of how to use each tool and activities that can be implemented immediately.

**Melissa Conklin**  
Independent Math Consultant, Dallas, Texas

351 BE (GEORGE R. BROWN CONVENTION CENTER)

### 185

## Taking Primary Math Journals to a New Dimension

(Pre–K–2) Gallery Workshop

Participatory power is high as you learn by doing in this fast-paced, hands-on session. Discover how to add dimensionality to your primary student's math journal as you transform basic classroom materials into 3-D graphic organizers. Depart with a mini composition book filled with ideas ready to use immediately.

**Debbie Bynum**  
Region 18 Education Service Center, Midland, Texas

361 BE (GEORGE R. BROWN CONVENTION CENTER)

### 186

## Designing Backpacks: A Project-Based Math Unit

(3–5) Gallery Workshop

Come learn how student-designed backpacks can create an environment where all students are engaged and have ownership in their learning. Participants design a prototype of their own backpack to see the mathematical connections and level of rigor in this project-based unit. You will be ready to start this unit tomorrow!

**Sandy Handrick**  
Leander ISD, Texas  
**Beth Chinderle**  
Leander ISD, Texas

330 (GEORGE R. BROWN CONVENTION CENTER)

### 187

## Progression of Fractions in Grades 3–5

(3–5) Gallery Workshop

Principles to Actions

Learn about the progression of fractions across grades 3–5. This important topic is a major focus in CCSSM. Come see different activities that showcase unit fractions, multiple fraction representations, fraction equivalence, partitioning, and fun and open-ended activities.

**Monica A. Tienda**  
Oak Park School District, Michigan

361 AD (GEORGE R. BROWN CONVENTION CENTER)

**188** **RN****Examining Operations with Fractions Using Words, Diagrams, and Manipulatives**

(3–8) Gallery Workshop

Principles to Actions

This interactive session will examine operations with fractions through math activities and classroom video. Stories and drawings will be used as tools for reasoning about fraction operations. We will examine how whole number thinking needs to be revised when fractions are involved; for instance, how is  $\frac{3}{4} \times 12$  the same or different from  $12 \times \frac{3}{4}$ ?

Virginia Bastable

Mount Holyoke College, South Hadley, Massachusetts

**342 BECF (GEORGE R. BROWN CONVENTION CENTER)****189****Videos for Differentiating Instruction**

(6–8) Gallery Workshop

The presentation will show several videos created for the purpose of helping teachers differentiate instruction. Each video is three to five minutes long and focuses on one standard of CCSSM. A series of two to three objectives move the discussion from a physical modeling of the mathematics to the writing using mathematics symbolism.

Francis J. Gardella

Hunter College, City University of New York, New York

**351 CF (GEORGE R. BROWN CONVENTION CENTER)****190****What's the Chance of That?!?!**

(6–8) Gallery Workshop

Principles to Actions

Come experience how simulation can give your students a deeper understanding of probability and statistics. When is guessing a good strategy? What chances do I have to win that contest? Is there a relationship between the number of hours I watch TV and my grades? Let's ponder these to explore how to empower our students mathematically.

Jennifer North Morris

Math Coach/Specialist, Tucson, Arizona

**340 (GEORGE R. BROWN CONVENTION CENTER)****191****Using Technology to Develop Thinking about Ratio and Proportion**

(6–8, Preservice and In-Service) Gallery Workshop

Proportional reasoning is deemed one of the most pivotal mathematical concepts for adolescents. Join us as we explore three problems aligned to the Common Core and NCTM standards that rely on technology as a means to help students make sense of the algorithm “cross multiply and divide.”

Bob Horton

Clemson University, South Carolina

**310 AD (GEORGE R. BROWN CONVENTION CENTER)****192****Word Problems: Turning Foes into Friends**

(6–12) Gallery Workshop

Do you want to promote a love of problem solving in your classroom? Come learn and participate in five problem-solving models that will build students' skills and confidence in solving word problems. Models include creating physical representations, drawing diagrams, using logic matrices, working backwards, and guess and check.

Thomas J. Duarte

Anaheim Union High School District, California

Ruth Coney

Anaheim High School, California

**351 AD (GEORGE R. BROWN CONVENTION CENTER)****193** **PS****Making Sense of Inference: From Common Core to AP Statistics**

(9–12) Gallery Workshop

Simulation-based inference is at the heart of CCSSM. Future statistics courses require more formal inference methods. In this session, we will examine the progression that leads to confidence intervals and hypothesis tests by engaging in classroom-tested activities to model random sampling in surveys and random assignment in experiments.

Daren Starnes

The Lawrenceville School, New Jersey

**362 AD (GEORGE R. BROWN CONVENTION CENTER)**

9:45 A.M.–11:00 A.M.

**194** **CP**

## What Is Math Modeling in a High School Classroom?

(9–12) Gallery Workshop

Participants will experience a high school classroom setting using mathematical modeling activities as specified by the Common Core State Standards. The activities will be directly correlated to the Content and Practice Standards. There will be various activities that will model techniques to be used immediately in the classroom.

**Karen Sisco Snow**

SOS Consulting Services, Inc., Perryville, Arkansas

**Judy Fried**

Providence Public School District, Rhode Island

**332 BECF (GEORGE R. BROWN CONVENTION CENTER)**

**195**

## New and Preservice Teachers Workshop

(Preservice and In-Service) Gallery 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

**320 AD (GEORGE R. BROWN CONVENTION CENTER)**

11:00 A.M.–12:00 P.M.

**196**

## Integrating the Mathematical Practices with Formative Assessment Strategies

(General Interest) Session

The intersection of the mathematical practices and formative assessment strategies is seamless. Learn how to integrate formative assessment and the mathematical practices to enhance your ability to gather, analyze data, and provide appropriate interventions based upon your students' knowledge and understanding of the mathematics standards.

**Anne M. Collins**

Lesley University, Cambridge, Massachusetts

**GRAND BALLROOM C (GEORGE R. BROWN CONVENTION CENTER)**

**197**

## Modeling as Both Means and Ends to Learning Valued Mathematics

(General Interest) Session

School mathematics is filled with opportunities to engage students with modeling as a practice while also meeting mathematical content standards. Innovative strategies focused on big ideas and essential understandings of mathematical modeling from prekindergarten through high school can help us to do this work efficiently, effectively, and enthusiastically.

**Rose Mary Zbiek**

Pennsylvania State University, University Park

**GRAND BALLROOM B (GEORGE R. BROWN CONVENTION CENTER)**

**198**

## Making Math Count: Assessing for the Good of Students

(Pre-K–2) Session

It is easy to become overwhelmed by assessments and data. We will share how we made assessment meaningful by using Kathy Richardson's Assessing Math Concepts (AMC). This formative assessment series provides timely data on students' understanding of critical math stages. Data is then matched with engaging and purposeful instructional strategies.

**Katherine A.G. Phelps**

Orange County Schools, Hillsborough, North Carolina

**Alexandra Humphries**

Wake County Public Schools, Raleigh, North Carolina

**Christina Lowman**

Chatham County Schools, North Carolina

**350 DEF (GEORGE R. BROWN CONVENTION CENTER)**

**199**

## Make Math Super Powered: Use Games in a Workshop Model

(Pre-K–5) Session

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

**Manuela Crowley**

Zeno, Seattle, Washington

**Vicki Pettross**

Zeno, Seattle, Washington

**360 DEF (GEORGE R. BROWN CONVENTION CENTER)**

Friday

**200****Math + Technology = Learning**

(Pre–K–5) Session

In this session, you'll learn how to use technology in clever ways for teaching and learning mathematics. See how math lessons can be enlivened and enhanced through the integration of resources and tools found on the Internet, the iPad and the classroom computer. You're guaranteed to leave with many ideas you can use next Monday with your students!

**Tammy Worcester Tang**  
ESSDACK, Hutchinson, Kansas

**352 DEF (GEORGE R. BROWN CONVENTION CENTER)****201** **EQ****Power Plays: The Construction of Student Authority During Collaborative Problem Solving**

(3–5, Research) Session

This talk will focus on how upper elementary students construct forms of authority as they collaborate on solving math problems. Also discussed will be the role of authority on students' patterns of engagement, as well as the ways in which these processes relate to broader social identities such as race, gender, and language.

**Jennifer Marie Langer-Osuna**  
University of Miami, Coral Gables, Florida

**361 CF (GEORGE R. BROWN CONVENTION CENTER)****202****Understanding Fractional Partitions, Equivalence, and Proportional Reasoning for Solving Problems**

(3–8) Session

Participants will learn the two distinct meanings of fractions, part-whole and quotient, and how to instruct students on ordering and comparing equivalent fractions while extending their knowledge and understanding on operations with fractions. Attendees will also learn how to incorporate visual representations to solve real-world problems for fractions.

**Joseph Sencibaugh**  
Webster University, St. Louis, Missouri

**Jennifer Bond**  
Ferguson-Florissant School District, St. Louis, Missouri  
**Dan Sinclair**

Mastery Educational Services, Fallbrook, California

**360 ABC (GEORGE R. BROWN CONVENTION CENTER)****203****Understanding Linear Functions Using Manipulatives**

(6–8) Session

Principles to Actions

Do your students need hands-on activities to help develop their understanding of linear functions? Discover the benefits of using virtual and traditional manipulatives in your class to help students better understand linear function concepts, including graphing, slope,  $y$ -intercept, and solving equations.

**Kevin Dykema**  
Mattawan School District, Michigan

**342 AD (GEORGE R. BROWN CONVENTION CENTER)****204****Formative Assessment Ideas for the Middle Grades**

(6–8, Preservice and In-Service) Session

Learn how formative assessment allows teachers to check for understanding along the way and guide decision making about future instruction. Easy and effective ways to monitor learning *during* the learning process, provide feedback to students so they can improve their performance, and employ reflective learning strategies will be shared.

**Beatrice Moore-Luchin**  
NUMBERS Mathematics Professional Development, Houston, Texas

**GRAND BALLROOM A (GEORGE R. BROWN CONVENTION CENTER)**

Check out the many sessions that address one or more of the teaching practices and guiding principles found in NCTM's *Principles to Actions*. See page 6 for details.



**205**

## Vocabulary Strategies for the Math Classroom

(6–12) Session

We all have trouble getting our students to remember key terms, symbols, formulas, and rules. This session will present numerous ways to get students to more actively learn the necessary vocabulary, from individual activities to small group to whole class. You will take home ideas you can use in your next class no matter the topic or grade level.

**Kim Scarbrough**

Sheridan Public Schools, Arkansas

**310 BE (GEORGE R. BROWN CONVENTION CENTER)**

**206**

## Who Needs Homework?

(6–12) Session

Homework almost made me quit my job. It's a frustrating exercise that most teachers despise but feel is a necessary evil. But is it necessary? We will discuss the good reasons we use to justify why we give homework and the better reasons that should make us shift our focus and stop assigning it.

**Tony Alteparmakian**

California State University, Bakersfield

**362 BCEF (GEORGE R. BROWN CONVENTION CENTER)**

**207 MAJ**

## What Preservice Elementary Teachers Need to Learn about Fractions

(Preservice and In-Service) Session

Principles to Actions

New elementary teachers need to be prepared to teach fractions as presented in new standards documents, a presentation that is different from how they learned. In this session, we will investigate multiple representations of fractions as numbers that can strengthen preservice elementary teachers' understanding of this critical content.

**Jane F. Schielack**

Texas A&M University, College Station

**332 AD (GEORGE R. BROWN CONVENTION CENTER)**

**207.1 ew**

## Unleash the Power of Games-Based Math with Mangahigh.com

(General Interest) Exhibitor Workshop

Mangahigh has revolutionized the way we engage students in our math classrooms. With interactive games and clever adaptive quizzes, all mapped to the curriculum for K–grade 10, Mangahigh brings dramatic improvements in students' attitudes towards learning math. Attend to claim your free 60-day trial of [www.mangahigh.com](http://www.mangahigh.com)!

**Mangahigh.com**

London, England, UK

**320 CF (GEORGE R. BROWN CONVENTION CENTER)**

**207.2 ew**

## Supplementing with Singapore Math® Materials to Enhance Classroom Lessons

(Pre-K–5) Exhibitor Workshop

Come learn how Singapore Math® strategies help students build mental math skills, understand place value, and become better problem solvers. As a supplement to any curriculum, these powerful strategies help students gain a conceptual understanding of critical foundational skills in elementary mathematics.

**Singapore Math® Professional Development Provider**

Baton Rouge, Louisiana

**320 BE (GEORGE R. BROWN CONVENTION CENTER)**

**207.3 ew**

## Pearson High School Math and MathXL for School

(9–12) Exhibitor Workshop

Learn how this blended print and digital curriculum not only engages students but also ensures all learners acquire the critical knowledge and skills necessary to succeed in college and in their careers—with an assist by MathXL for School, Pearson's award-winning online homework, tutorial, and assessment program.

**Pearson**

Boston, Massachusetts

**310 CF (GEORGE R. BROWN CONVENTION CENTER)**



## 208 **Pocketful of Coins**

(Pre–K–2) Burst

What does financial literacy mean? How do we begin teaching young children about money? What is the mathematics behind financial literacy for young children? Through children's literature and games, we will connect early number sense and counting money, using a modified 100 chart. Take away classroom-ready, classroom-tested materials.

**Mary Alice Hatchett**

Texas Council of Teachers of Mathematics, Austin

**330 (GEORGE R. BROWN CONVENTION CENTER)**

## 209 **Primary Math: Learning the Hands-On Way!**

(Pre–K–2) Burst

This session will identify math objectives that are taught in the primary grades, showing how they connect across grade levels. The session will include examples of how to teach some of these concepts using small group instruction, games, and tub work.

**Stephanie Gibson**

Frazier Elementary, Cypress Fairbanks ISD, Houston, Texas

**Rebecca Pulliam**

Holbrook Elementary, Cypress Fairbanks ISD, Houston, Texas

**362 AD (GEORGE R. BROWN CONVENTION CENTER)**

## 210 **Generalizing Rules for Multiplying and Dividing by Powers of 10**

(3–5) Burst

Help your students understand multiplying and dividing with powers of 10. First, discover an exploration that pushes your students to generalize rules for multiplying and dividing by 10 and 100 (and that takes only two minutes a day!). Then, work with base-ten blocks to highlight the “why” for students in multiplying and dividing values by 10.

**Greta Anderson**

FirstLine Schools, New Orleans, Louisiana

**361 BE (GEORGE R. BROWN CONVENTION CENTER)**

## 211 **Intervening with Math**

(3–5) Burst

Utilize technology to introduce students to many new ways of discovering math. Math can be fun and exciting if made interesting for students, and through the use of iPad, computers, and SMART boards teachers can make math very fun. Technology can also be used to create an intervention system for struggling students.

**Chris Gammon**

Idabel Public Schools, Oklahoma

**332 BECF (GEORGE R. BROWN CONVENTION CENTER)**

## 212 **Using MTMS in the Classroom**

(6–8) Burst

Highlighted Presentations

NCTM's journal *Mathematics Teaching in the Middle School (MTMS)* offers many opportunities to enhance the teaching and learning of mathematics in grades 5–9. This session will engage participants in learning how to effectively use the variety of articles, activities, and resources in each issue of *MTMS* in their classroom.

**Jane Porath**

Traverse City Area Public Schools, Michigan

**310 AD (GEORGE R. BROWN CONVENTION CENTER)**

## 213 **Using Language Functions as Scaffold for Understanding Mathematics Concepts**

(6–12, Research) Burst

We will discuss the challenge we have been working on with a group of teachers at Fremont High School in Oakland, California: how to provide a coherent mathematics learning experience—access to conceptual understanding and opportunities to produce language to communicate their mathematical reasoning—for students in high school new to the U.S.

**Harold Asturias**

Lawrence Hall of Science, University of California, Berkeley

**351 AD (GEORGE R. BROWN CONVENTION CENTER)**

## 214 Student Discourse, Student Engagement, Teaching for Success!

(6–12) Burst

Teachers need clear strategies to maximize student learning. There are models that prove useful grade level after grade level. Learn them! There are organizational tools that grow with the student. Continue them! There are techniques that energize students, empower learner groups, and force great communication. Use them!

Jacqueline M. Weilmuenster  
University of Texas at Arlington

351 BE (GEORGE R. BROWN CONVENTION CENTER)

## 215 Considering Mathematically Talented High School Students

(9–12) Burst

This session explores ideas for keeping mathematically talented high school students engaged and interested in pursuing further study in STEM fields.

Rebecca Judith Quander  
University of Houston-Downtown, Texas

351 CF (GEORGE R. BROWN CONVENTION CENTER)

## 216 The Cure for the Common Core

(9–12) Burst

Over the past year, a small group of teachers and curriculum developers from Illustrative Mathematics, High Tech High, and Mathalicious have teamed up to create high school course plans and unit blueprints. This resource details a pathway for translating the Common Core into a sequence of classroom experiences.

Patrick Callahan  
University of California, Los Angeles  
Kate Nowak  
Mathalicious, Charlottesville, Virginia

342 BECF (GEORGE R. BROWN CONVENTION CENTER)

## 217 The Effects of Visual Statistics Software on Undergraduate Statistics Achievement

(Higher Education) Burst

The purpose of the proposed study discussed in this session is to examine the effects of using a visual statistics software program on undergraduate students' statistics achievement and the association between cognitive and noncognitive factors and achievement.

Kori Lloyd Hugh Maxwell  
Georgia State University, Atlanta

320 AD (GEORGE R. BROWN CONVENTION CENTER)

## 218 Transitioning from Practicing Teacher to Teacher Leader: A Case Study

(Higher Education) Burst

This session describes the results from an exploratory case study of an elementary mathematics teacher as she transitioned from teacher to Common Core Mathematics Coach. Results of this teacher's transition will be shared along with lessons that serve to inform other emerging teacher leaders.

Natasha E. Gerstenschlager  
Middle Tennessee State University, Murfreesboro  
Angela T. Barlow  
Middle Tennessee State University, Murfreesboro

361 AD (GEORGE R. BROWN CONVENTION CENTER)

## 219 MAJ Using "Fun" in the Statistics Classroom: Research and Recommendations

(Higher Education, Research) Burst

Fun, engaging pedagogies are called for (e.g., in the American Statistical Association's GAISE Reports), but does research support this? Drawing from quantitative and qualitative studies (including our March 2013 *Journal of Statistics Education* paper and newer NSF-funded work), we discuss fun modalities, motivations, hesitations, resources, and emerging evidence of effectiveness.

Lawrence M. Lesser  
University of Texas at El Paso

340 (GEORGE R. BROWN CONVENTION CENTER)

12:30 P.M.–1:00 P.M.

**220**

### **Defining the Role of Campus-Level Mathematics Instructional Leaders**

(General Interest) Burst

What are the responsibilities of a campus-level mathematics instructional leader? How does the instructional leader support the district and campus goals? I will share the year-long process we used to answer these questions by forming cohorts to research, visit classrooms, and collaborate to design a product aligned with our Learning Framework.

Mary Elizabeth Kemper  
Coppell ISD, Texas

**342 BECF (GEORGE R. BROWN CONVENTION CENTER)**

**221**

### **Trigonometry: Measuring the World in Small Groups**

(General Interest) Burst

College students typically view two concepts with disdain: group work and real-world explorations. These are, however, areas that students will often confront in their future careers, and so it is imperative they be exposed to both. How do students react when thrust into a real-world challenge with a group of strangers? They thrive!

David S. DeLong  
Kaplan University, Fort Lauderdale, Florida

**361 AD (GEORGE R. BROWN CONVENTION CENTER)**

**222**

### **Understanding Low Performance on the National Assessment of Educational Progress**

(General Interest) Burst

What do we know about the lowest performing students on the National Assessment of Educational Progress (NAEP)? What is their background? What do we know about their schools and teachers? This talk describes the lowest performing students as a group on the NAEP based upon information collected from student, teacher, and school questionnaires.

Zachary Rutledge  
Independent Researcher, Salem, Oregon

**332 BECF (GEORGE R. BROWN CONVENTION CENTER)**

**223**

### **Buttons, Buttons, Buttons**

(Pre-K–2) Burst

We will explore the use of buttons to teach concepts including cardinal and ordinal numbers, classification by attributes, addition, and subtraction.

Eileen Faulkenberry  
Tarleton State University, Stephenville, Texas

**351 BE (GEORGE R. BROWN CONVENTION CENTER)**

**224**

### **Create, Publish, Critique: Teach Math with Student-Generated Content at Shooloo.org**

(3–8) Burst

Make word problems relevant to students' own lives. Empower them to create math stories of their own. Engage them through peer feedback. Teach them to pay attention to precision. We will share tips and resources on how to teach Common Core mathematical practices with student-generated content. Leave with ideas that are immediately actionable.

Robin Yang  
Shooloo.org, New York, New York

Jeanne Shannon  
Saint Elizabeth Catholic Academy, Ozone Park, New York

**320 AD (GEORGE R. BROWN CONVENTION CENTER)**

**225**

### **Free, Friendly, and More Than a Number!**

(3–8) Burst

Come to learn how educators can improve students' mathematical achievement levels with actionable data that evaluate and inform student readiness to learn. The Quantile® Framework for Mathematics offers a research-based common scale that measures the difficulty of the mathematics skills and concepts as well as the student's level of proficiency.

Ruth R. Price  
MetaMetrics, Inc., Durham, North Carolina

**351 AD (GEORGE R. BROWN CONVENTION CENTER)**

Friday

## 226

### Design & Build Your Dream House

(6–8) Burst

Principles to Actions

Design & Build Your Dream House is a hands-on teaching strategy that incorporates an abundance of geometry skills and learning objectives. The strategy allows students to create their dream house using concepts learned in the classroom. Students are enthusiastically engaged in learning geometry from design to construction.

**Amy K. Crawford**

Summit Academy Secondary, Youngstown, Ohio

361 BE (GEORGE R. BROWN CONVENTION CENTER)

## 227

### College—How Prepared Are Your Students?

(9–12) Burst

This session focuses briefly on the math skills that students will need, and goes more in-depth on the nuts-and-bolts of college readiness: SAT scores, applications, financial aid, degree plans, selecting a college, etc. A full handout (in electronic form) will be provided.

**Kathleen Hart-Abel**

Pearland Independent School District, Texas

351 CF (GEORGE R. BROWN CONVENTION CENTER)

## 228

### Using Robots to Teach Math

(9–12) Burst

Principles to Actions

Using robots to teach math and science classes can help engage students in learning content material and brings a “wow” factor to class. Come to this workshop to see how Manor ISD is using robots in classes and experience some learning opportunities for yourself as well!

**David A. Surdovel**

Manor ISD, Texas

340 (GEORGE R. BROWN CONVENTION CENTER)

## 229

### A Statewide Project to Provide Mathematics Professional Development Resources

(Preservice and In-Service) Burst

Principles to Actions

The presentation will describe a statewide project to develop and deliver high-quality mathematics professional development. Resources will be described and previewed, and participants will learn how to access these resources.

**Linda K. Griffith**

University of Central Arkansas, Conway

362 AD (GEORGE R. BROWN CONVENTION CENTER)

## 230

### Increase Math Talk to Increase Engagement and Student Achievement!

(General Interest, Research) Burst

Principles to Actions

One of the high-leverage instructional practices described in NCTM’s *Principles to Actions* is for teachers to facilitate meaningful mathematical discourse. The research supporting this recommendation will be reviewed and specific strategies to increase meaningful discourse in the classroom will be shared.

**Matthew R. Larson**

Lincoln Public Schools, Nebraska

310 AD (GEORGE R. BROWN CONVENTION CENTER)

## 231

### Narrowing the Gap between Typical Practice and Research-Affirmed Practice

(General Interest, Research) Burst

This example-laden presentation will briefly describe typical instructional practice as seen in the vast majority of mathematics lessons and then compare and contrast the typical with a range of often ignored research-informed practices that maximize access, motivation, and learning.

**Steven Leinwand**

American Institutes for Research, Washington, D.C.

330 (GEORGE R. BROWN CONVENTION CENTER)

**232****Formative Assessment: A Beyond “Checking for Understanding” Classroom Process!**

(General Interest) Session

In this motivational session, discover the difference between checking for understanding in class and the deeper formative assessment process and work of your students. We will explore the six essential elements of formative feedback as part of a lesson design that leads to significant improvement in student learning. Come join the discussion!

**Timothy D. Kanold**

Loyola University, Chicago, Illinois

**GRAND BALLROOM B (GEORGE R. BROWN CONVENTION CENTER)****233****Mathematically Yours—All the Math Culture Complete!**

(General Interest) Session

*Mathematically Yours* is a newspaper whose first issue (available online) is a tribute to Chicago. You will discover Chicago through math, as we write about mathematicians, arts, jobs, people, movies, etc. Its editors are students, teachers, or just people passionate about math. Consider working on an issue for your own city!

**Frederic Mahieu**

French International School, Chicago, Illinois

**352 DEF (GEORGE R. BROWN CONVENTION CENTER)****234****Realistic Mathematics Education (RME) and Visualization in Collaborative Settings**

(General Interest) Session

The RME framework is used to enact activities for learners to conceptualize important mathematics through intuitively accessible contexts. See how urban elementary students collaboratively develop visualization skills; and how Giant Triangles activities for a wide age/ ability range move rapidly from intuitively simple constructs into abstraction.

**Jacqueline Sack**

University of Houston-Downtown, Texas

**361 CF (GEORGE R. BROWN CONVENTION CENTER)****235****Using Student Growth Data to Improve Math Instruction**

(General Interest) Session

Principles to Actions

Making every student better gets at the core of why we are in education: to help students grow. This presentation focuses on how educators can choose or create quality assessment sets of mirrored form, content, and cognitive demand; get useful student growth data; and easily make that data drive your instructional choices.

**Anne F. Weerda**

Winnebago School District, Illinois

**GRAND BALLROOM C (GEORGE R. BROWN CONVENTION CENTER)****236****Algebraic Strategies for Enhancing Visual Discrimination and Numeracy in Children**

(Pre-K–2) Session

Explore a variety of easy-to-learn techniques for introducing algebra to children in early grades. Learn strategies for using algebraic symbol manipulation and matching exercises to enhance visual discrimination and strengthen addition, subtraction, multiplication, and division in young children. Participants will leave with handouts.

**Suzy Koontz**

National Math Foundation, Ithaca, New York

**360 ABC (GEORGE R. BROWN CONVENTION CENTER)****237** **RN****Supporting the Learning of Foundational Fraction Ideas and the Mathematical Practices**

(3–5) Session

This session addresses the teaching and learning of fractions, a challenging topic in the upper elementary curriculum, and the Common Core mathematical practice of constructing viable arguments and critiquing the reasoning of others. Attention will be paid to common patterns of student thinking and instructional strategies for supporting students' learning.

**Meghan M. Shaughnessy**

University of Michigan, Ann Arbor

**GRAND BALLROOM A (GEORGE R. BROWN CONVENTION CENTER)**



**238****The Area Model, through the Years!**

(3–8) Session

**Principles to Actions**

The focus of this session will be on the operations of multiplication and division. Participants will discover how the area model can be used to help build fluency and conceptual understanding. Participants will take part in hands-on demonstrations of how the area model can be implemented from grade 3 all the way to algebra 1.

**Mark Schmit**

ETA hand2mind, Vernon Hills, Illinois

**332 AD (GEORGE R. BROWN CONVENTION CENTER)****239****Using Social Media to Support the Flipped Classroom**

(6–8) Session

The flipped classroom is an innovative way of delivering instruction online and moving homework into the classroom. This session describes tools necessary to implement a flipped classroom for any math topic and includes a focus on progress monitoring using Edmodo. Participants will receive a list of resources that can be immediately implemented.

**Andy L. Nguyen**

Anaheim Union High School District, Anaheim, California

**Marvin E. Soto**

Norwalk-La Mirada Unified School District, California

**362 BCEF (GEORGE R. BROWN CONVENTION CENTER)****240****Engage All Students in Problem-Solving Tasks**

(6-12) Session

This presenter from an urban high school will show how he increases students' interest and ability in problem solving and reasoning through three tasks. Make math meaningful through percent, fraction, and measurement conversions. Create lessons quickly using the Internet and the world that surrounds you.

**Richard Quiroz**

Loara High School, Anaheim, California

**310 BE (GEORGE R. BROWN CONVENTION CENTER)****241****A Potpourri of Conic Section Construction Techniques**

(9–12) Session

Few topics connect with as many branches of mathematics as conic sections. Congruency, similarity, the Pythagorean theorem, and trigonometry all play a role in investigating ellipses, parabolas, and hyperbolas. This session provides an interactive tour of the many physical models that draw conics, as well as their counterparts built with Sketchpad.

**Daniel Scher**

KCP Technologies, New York, New York

**Scott Steketee**

KCP Technologies, Philadelphia, Pennsylvania

**350 DEF (GEORGE R. BROWN CONVENTION CENTER)****242** **PS****Ruling Out Chance**

(9–12) Session

Drawing conclusions from data is a central idea in the CCSSM statistics standards and in AP Statistics. A “significant difference” is one that is unlikely to have occurred by chance, so assessing significance involves ruling out chance as a possible explanation. This session includes simulation activities that illustrate “ruling out chance.”

**Roxy Peck**

California Polytechnic State University, San Luis Obispo

**360 DEF (GEORGE R. BROWN CONVENTION CENTER)****243****Integrating Ethnomathematical Ideas from Indigenous Cultures in Mathematics Teaching**

(Preservice and In-Service) Session

This presentation highlights in-service teachers' investigations in ethnomathematics through immersion in indigenous cultures. In this talk we will share mathematical ideas that transpired in out-of-school settings and lessons that teachers developed during their study-abroad experiences.

**Iman C. Chahine**

Georgia State University, Atlanta

**342 AD (GEORGE R. BROWN CONVENTION CENTER)**

12:30 P.M.–1:30 P.M.

**243.1** ew**Mastery Ed: Tier 2 and 3 Intensive Math Interventions**

(3–8) Exhibitor Workshop

Research indicates that the use of visual representations of mathematical ideas is critical to building understanding in students and teachers. This workshop will demonstrate targeted interventions for tier 2 and 3 students. Attendees will receive samples of the visual tools and hands-on instruction to teach addition/subtraction and multiplication/division.

**Mastery Educational Services**

Fallbrook, California

**320 BE (GEORGE R. BROWN CONVENTION CENTER)****243.2** ew**Math Navigator: Helping Kids Fix Misconceptions about Math**

(3–8) Exhibitor Workshop

Why do some students struggle with basic math concepts? Pearson's Math Navigator intervention program targets misconceptions that prevent students from mastering the foundational concepts which result in poor performance. Learn how the Math Navigator Screener quickly diagnoses specific weaknesses, and makes recommendations among the 26 skills modules.

**Pearson Education**

Glenview, Illinois

**310 CF (GEORGE R. BROWN CONVENTION CENTER)****243.3** ew**Lunch & Learn with Author Dr. Ed Burger**

(9–12) Exhibitor Workshop

Join author Dr. Ed Burger to find out what Texas high-school math teachers are raving about! Session includes an overview of Houghton Mifflin Harcourt's Texas high school math programs: Algebra 1, Geometry, and Algebra 2. These brand new programs are a comprehensive system of math instruction ensuring mastery of the TEKS. Designed for a blended learning approach, the series provides a robust digital student experience, a powerful adaptive learning system and unparalleled teacher support.

**Houghton Mifflin Harcourt**

Boston, Massachusetts

**320 CF (GEORGE R. BROWN CONVENTION CENTER)**

1:30 P.M.–2:45 P.M.

**244****Board Hot Topic: Assessing Your Assessment Practices: Do They Measure Up to Support Student Learning?**

(General Interest) Session

Principles to Actions

Do your assessments measure conceptual understanding, mathematical processes and practices, and procedural skills? How can results best support students' learning? How can released tasks, including PARCC and SBAC prototypes, be used as instructional tools? Join us to learn research-informed, practical ways to increase the quality of your assessments, as described in NCTM's *Principles to Actions: Ensuring Mathematical Success for All*.

**Ruth Harbin Miles**

Mary Baldwin College/Falmouth Elementary School, Staunton/Stafford, Virginia

**Jane Porath**

Traverse City Area Public Schools, Michigan

**Diane J. Briars**

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

**332 BECF (GEORGE R. BROWN CONVENTION CENTER)****245** MAJ**Beyond ABAB Patterns: Focusing on Mathematical Structure and Repeated Reasoning**

(Pre–K–2) Gallery Workshop

Patterns are more than just colors ordered in a predictable ABAB sequence. Suppose Goldilocks found bicycles inside the Three Bears' garage? Whose bicycle would she see first, second, and third? Do you notice a pattern? This workshop explores the concept of structure in terms of its mathematical significance and its connection to literature and science.

**Brian Mowry**

Austin Independent School District, Texas

**342 BECF (GEORGE R. BROWN CONVENTION CENTER)**

**246**

**Show Me the Money! Financial Literacy Lessons in the Primary Classrooms**

(Pre-K–2) Gallery Workshop

Incorporating money with needs and wants can be hard for younger minds to understand. In this session, participants will learn how to incorporate financial literacy into their existing money lessons. In addition to learning the value of coins, a number of real world simulations available through private sites online and thematic units will be shared. Children learn best when they are in control of their learning decisions and experience math.

**Amelia Hicks**

Lake Travis Elementary, Lake Travis Independent School District, Austin, Texas

**Irma Alvarado**

Lake Travis Elementary, Lake Travis Independent School District, Austin, Texas

**Marla Retano**

Lake Travis Elementary, Lake Travis Independent School District, Austin, Texas

**361 AD (GEORGE R. BROWN CONVENTION CENTER)**

**247**

**Work Stations 101**

(Pre-K–5) Gallery Workshop

Principles to Actions

Are you ready to incorporate work stations into your instruction? Are you looking for ideas about the types of activities that could be used in work stations? Are you wondering how to set up or arrange work stations in your classroom? Join us as we explore the “basics” for incorporating work stations into mathematics instruction.

**Janet E. Dodd**

Pasadena Independent School District, Texas

**362 AD (GEORGE R. BROWN CONVENTION CENTER)**

**248**

**Fractions: Choosing the Best Model to Develop a Concept**

(3–5) Gallery Workshop

Principles to Actions

Elementary students need experiences with multiple models of fractions in order to gain a deep understanding of the concept and proficiency with skills such as finding equivalence. This workshop will explore the benefits of each model to help you transform your teaching of fractions.

**Peter Michael Stowasser**

ORIGO Education, Brisbane, Australia

**340 (GEORGE R. BROWN CONVENTION CENTER)**

**249**

**Fraction Tasks across Grades: Learning Trajectory Approach to Implementing CCSSM**

(3–8) Gallery Workshop

Using a learning trajectory (LT) framework, teachers will learn to design/adapt/select/evaluate tasks that promote conceptual development of fractions for learners with diverse abilities and across grade levels, while aligning with CCSSM. Participants will examine fraction tasks (grades 3–6) to identify critical features of LT-based tasks.

**Dicky N. Ng**

Friday Institute, North Carolina State University, Raleigh

**Alan P. Maloney**

North Carolina State University, Raleigh

**310 AD (GEORGE R. BROWN CONVENTION CENTER)**

**250**

**Math and Architecture Student Exploration Program**

(3–8) Gallery Workshop

We will examine a project-based learning program that I created for students in grades 6 to 8 that connects mathematics and architecture. We will examine an activity from the program that makes use of maps and photographs from Boston and that provides students with an opportunity to study ratio and proportion.

**Jin Lee**

Milton Academy, Massachusetts

**330 (GEORGE R. BROWN CONVENTION CENTER)**

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



1:30 P.M.–2:45 P.M.

**251**

### Seeing Is Believing! Using Concrete Manipulatives to Model Fraction Division

(3–8) Gallery Workshop

Why “multiply by the reciprocal” when dividing fractions? During this session, you will explore hands-on activities that support meaningful use and understanding of common algorithms. You will leave with instructional strategies that promote student understanding of fraction division and a set of rigorous and engaging tasks that support student success.

**Marsha C. McCrary**  
University of Georgia, Athens

**320 AD (GEORGE R. BROWN CONVENTION CENTER)**

**252** MAJ

### The Language of Math: Rigor Goes beyond Computation

(3–8) Gallery Workshop

Discover how to help all students, including English language learners and special needs students, tackle the complex language of math with clear expectations, higher-order thinking, and supportive scaffolds. Examine key elements of close reading and strategies that address English proficiency within the TEKS and Common Core mathematics standards.

**Ivette Gonzalez**  
Gonzalez Educational Consulting Services, Chicago, Illinois

**351 CF (GEORGE R. BROWN CONVENTION CENTER)**

**253**

### Polygon Potpourri: Investigations in Geometry

(9–12) Gallery Workshop

Donut polygons, star polygons, concave polygons, cyclic polygons, and more. If any of these are new to you, come join us as we explore and make conjectures about some interesting and very cool polygon investigations.

**Michael Serra**  
Consultant, San Francisco, California

**361 BE (GEORGE R. BROWN CONVENTION CENTER)**

**254**

### Geometric Modeling of Various Methods of Factoring

(9–12, Preservice and In-Service) Gallery Workshop

Learn methods for teaching and remediating factoring meaningfully through the use of geometric modeling. Algebra tiles and other area/volume models will be used to demonstrate removing common factors, factoring of trinomials ( $a=1$  and  $a\neq 1$ ), factoring of differences of squares, and factoring of differences and sums of cubes.

**Rachel M. Bachman**  
Weber State University, Ogden, Utah

**351 BE (GEORGE R. BROWN CONVENTION CENTER)**

**255**

### Investigating Released AP Calculus Questions for Grades 6 through 10

(9–12, Preservice and In-Service) Gallery Workshop

Principles to Actions

Participants will investigate released AP Calculus test questions and learn how middle school and high school students can correctly answer them, using mathematics they already know. We will use estimation and Riemann sums to solve with definite integrals, and we will use rates of change to solve problems that calculus students solve with derivatives.

**Terry Walsh**  
Retired, Carbon Valley High School, Loveland, Colorado

**351 AD (GEORGE R. BROWN CONVENTION CENTER)**

2:00 P.M.–3:00 P.M.

**256** RN

### Building Powerful Numeracy: Fractions and Ratios

(General Interest) Session

What is a unit fraction,  $1/a$ , and why is it important? How do multiplicative thinking and equivalence influence fraction operations? We'll discuss the standards for teaching fractions and ratios across grades, with lesson examples consistent with the mathematical practices to develop deep understanding, and we'll discuss the effects on higher math.

**Pamela Weber Harris**  
University of Texas, Austin

**GRAND BALLROOM B (GEORGE R. BROWN CONVENTION CENTER)**

**257****Line Plot**

(Pre-K–2) Session

In the activity presented in this session, students will use square-inch paper to write their name. They will collect data from the class on the number of letters in a name or the measurement of each name in inches. They will create a large line plot with adding machine tape and post it to analyze. Students will then connect the correlation between the number of letters and the measurement.

**Natalie Guzzetta Davis**

Vermilion Parish School Board, Abbeville, Louisiana

**310 BE (GEORGE R. BROWN CONVENTION CENTER)****258****Sequencing CGI Word Problems: Using Student Thinking to Drive Instruction**

(Pre-K–2, Higher Education) Session

Teaching through problem solving allows students' mathematical thinking to be illuminated. But how does the classroom teacher both organize that rich information in a manageable way and decide what problems to pose next in order to meet learning goals? The collaborative effort between a first-grade teacher and university researcher will be shared.

**Luz A. Maldonado**

Texas State University, San Marcos

**Erika Hassay**

Round Rock ISD, Texas

**362 BCEF (GEORGE R. BROWN CONVENTION CENTER)****259****Thinking Tools for Doing Mathematics: Concrete, Pictorial, and Abstract Representations**

(3–5) Session

Mathematics can be taught effectively through a progression of thinking tools: starting with manipulatives, then with pictures, and ending with an abstract procedure. These are the thinking tools that students can use to answer the Common Core's call for students to make viable arguments, critique the reasoning of others, and to defend, show, explain, and reason.

**Hoover Herrera**

Houghton Mifflin Harcourt, Boston, Massachusetts

**350 DEF (GEORGE R. BROWN CONVENTION CENTER)****260****Use Engaging Problem-Solving Tasks and Math Projects**

(3–5) Session

Encourage students to collaborate using a variety of math problems and tasks. Have students listen to each other and share their understanding of math problems. We'll share strategies for asking good questions that promote critical thinking. Realistic application problems and creative projects for students in grades 3–5 will be shared.

**Edna F. Bazik**

National Louis University, Chicago, Illinois

**360 DEF (GEORGE R. BROWN CONVENTION CENTER)****261****How Singapore's Visual Models Enable All Students to Develop Algebraic Thinking**

(6–8) Session

This session will focus on visual models and visualization used in the highly successful Singapore curriculum that provide students with entry points to complex problems and enable them to develop deep understanding of topics such as operations with fractions, ratio, and algebraic manipulation. Examples of rich problems will also be shown.

**Andy Clark**

Retired, Portland Public Schools, Oregon

**352 DEF (GEORGE R. BROWN CONVENTION CENTER)****262****News Flash: Students Are Eager to Solve Rigorous Math Problems!**

(6–8) Session

Attendees will learn how to determine the cognitive demand of mathematical tasks to teach mathematical content *through* problem solving. Ideas to engage students so they persevere in solving rigorous problems and examples of student work will be shared.

**Annette Ricks Leitze**

Ball State University, Muncie, Indiana

**Paula Keesling**

Nettle Creek School Corporation, Hagerstown, Indiana

**360 ABC (GEORGE R. BROWN CONVENTION CENTER)**



**263****The Harmonic Mean: Overlooked, Undervalued, Yet Way Cool!**

(6–12) Session

High school math students are expected to know about the arithmetic and geometric means, but the harmonic mean is studied—usually—“if there’s time.” This session will investigate the derivation of the harmonic mean formula and how it can be applied to the study of number, geometry, finance and more (if there’s time). Lots of problems on numerous handouts.

**Steve Yurek**

Lesley University, Cambridge, Massachusetts

**342 AD (GEORGE R. BROWN CONVENTION CENTER)****264** MAJ**Questioning in the High School Mathematics Classroom**

(9–12) Session

Questioning is a powerful tool that should not be ignored. Asking the right questions measurably increases student learning. Using the goal of the lesson, learn how to design questions to assess students’ knowledge as well as push their thinking.

**Cindi Beenken Carroll**

Bowie High School, Austin ISD, Texas

**GRAND BALLROOM A (GEORGE R. BROWN CONVENTION CENTER)****265** MAJ**The 4Cs of Mathematics Instruction: Collaborate, Create, Communicate, and Critique**

(9–12) Session

Teaching students the 21st-century skills of collaboration, creativity, communication, and critical thinking requires lesson design and instruction focused on these areas. In classrooms devoted to reasoning and sense making, students engage in tasks to develop these skills. This presentation focuses on the development and use of such tasks.

**John A. Carter**

Westlake High School, Austin, Texas

**GRAND BALLROOM C (GEORGE R. BROWN CONVENTION CENTER)****266****CAS: Ten Years On**

(9–12, Higher Education, Research) Session

2002 was the first year that Year 12 students in Victoria, Australia, sat Mathematical Methods external examinations for which CAS (computer algebra system) was permitted. Ten years on, all students studying mathematical methods are using CAS in examinations. This session will present a case study from one school reflecting on their decade of experience.

**Sue M. Garner**

Ballarat Grammar, Australia

**361 CF (GEORGE R. BROWN CONVENTION CENTER)****267** MAJ**Understanding Theorems in Calculus Using Active Learning Strategies and Technology**

(9–12, Higher Education) Session

Research suggests that inquiry-based methods enhance student learning. What active learning strategies can you use to make sense of important theorems in calculus? What is the role of technology in bridging this understanding? Come learn and discover ways to partner with students on a journey to uncover important results in calculus.

**James A. Mendoza Epperson**

University of Texas at Arlington

**332 AD (GEORGE R. BROWN CONVENTION CENTER)****267.1** ew**Mathspace: Why You’ll Never Grade Math Assignments Again. Seriously!**

(6–12) Exhibitor Workshop

You’ve seen it all, right? Adaptive learning? Check. Handwriting recognition? Hmm... Every math question graded step-by-step? Wait, that’s new! Imagine: automatic grading, so you focus on teaching; students writing fully worked answers, with real-time feedback; and no more multiple choice! Come see why Mathspace is like nothing you’ve ever seen!

**Mathspace**

New York, New York

**320 BE (GEORGE R. BROWN CONVENTION CENTER)**

2:00 P.M.—3:00 P.M.

**267.2**  **Effectively Teaching Content through Process—What Does That Look Like?**

(9–12) Exhibitor Workshop

Different strategies help students solve the problems encountered in college, career, and life. Teaching content with effective questioning helps focus instruction/assessment of the Texas Mathematical Process Standards, reasoning, and sense making. Effective questioning gives info about students' thinking, providing insights for further investigation.

**Pearson**  
Boston, Massachusetts

**310 CF (GEORGE R. BROWN CONVENTION CENTER)**

**267.3**  **Desserts and Dip into TX High School Math with Dr. Ron Larson**

(9–12) Exhibitor Workshop

Join author Dr. Ron Larson to find out what Texas high school math teachers are craving! Session includes an overview of *Big Ideas Math® TX Edition: Algebra 1, Geometry, and Algebra 2*. This new program is a focused and coherent curriculum with a rigorous and balanced approach. Extensive print resources and dynamic technology for 21st-century classrooms provide students and teachers the tools for mastering the TEKS.

**Houghton Mifflin Harcourt**  
Boston, Massachusetts

**320 CF (GEORGE R. BROWN CONVENTION CENTER)**

3:15 P.M.—4:30 P.M.

**268** **Addition and Subtraction: Building a Strong Foundation**

(Pre-K–2) Gallery Workshop

Explore instructional strategies for joining, separating, and comparing as we learn how to build a strong foundation for our youngest learners. In this interactive session we will use various manipulatives and math mats to accelerate student understanding and conceptual development. We will address student misconceptions as well as differentiation.

**Gayle Stahl**  
Independent Mathematics Consultant, Houston, Texas

**351 BE (GEORGE R. BROWN CONVENTION CENTER)**

**269** **Exploring Addition and Subtraction in the Primary Grades**

(Pre-K–2) Gallery Workshop

Explore instructional strategies designed to help develop students' conceptual understanding of addition and subtraction. Explore how to use instructional tools to make connections between the concrete representations and abstract representations of addition and subtraction.

**Stefani Kulhanek**  
Region 4 Education Service Center, Houston, Texas

**340 (GEORGE R. BROWN CONVENTION CENTER)**

**270** **Angling for Understanding**

(3–5) Gallery Workshop

Principles to Actions

If you find yourself fishing for ideas to develop deep understanding about angles, this session may be just what you need. Angle measurement and understanding may be best approached by stepping through a sequence similar to measuring length, area, and volume. This hands-on session provides activities to clarify and strengthen the concept of angle.

**Peter Stowasser**  
ORIGO Education, Earth City

**351 AD (GEORGE R. BROWN CONVENTION CENTER)**

**271** **Folding Your Way to Understanding Fractions**

(3–5) Gallery Workshop

Principles to Actions

Frustrated by fractions? Looking for a novel and engaging way to teach them? This session is for you! Participatory power is high as attendees are guided through the construction of 3-D graphic organizers designed specifically to aid students in comprehending fractions. Depart with a mini composition book filled with immediately usable ideas.

**Nancy Wisker**  
Dinah Zike Academy, Comfort, Texas

**310 AD (GEORGE R. BROWN CONVENTION CENTER)**

**272 RN****Developing Fraction Number Sense Using Benchmarks**

(3–8) Gallery Workshop

Tackling Rational Numbers K–8: Number Relationships from Counting to Ratios

Explore specific benchmark activities that engage children and deepen their understanding of fractions. By watching video clips from a third-, fourth-, and fifth-grade multiyear class, you will see how some of the fraction benchmark activities provided opportunities for student engagement and class discussions.

**Melanie Wenrick**

Fresno State, California

**342 BECF (GEORGE R. BROWN CONVENTION CENTER)****273****Investigating the Geometry around Us**

(3–8) Gallery Workshop

Explore children's literature and engage in hands-on activities and games to discover, enhance, and make connections to geometry and measurement in the world around us. Investigate and construct 3-D solids, challenge your measuring abilities, and seek out shapes in your world. Ready-made classroom activities will be provided.

**Susan Troutman**

Rice University School Mathematics Project, Houston, Texas

**Carolyn L. White**

Rice University School Mathematics Project, Houston, Texas

**332 BECF (GEORGE R. BROWN CONVENTION CENTER)****274****Designed for Learning: Using a Studio Model to Foster Problem Solving**

(6–8) Gallery Workshop

Principles to Actions

Design is everywhere. Like mathematics, it offers a context for developing highly demanded problem-solving traits. Designers approach problems in ways common to math learning. This session will explore a project created to take advantage of this similarity and offers techniques to bring design thinking to your classroom.

**Tyrone Martinez-Black**

Evanston/Skokie Community Consolidated School District 65, Illinois

**361 BE (GEORGE R. BROWN CONVENTION CENTER)****275****Success in High-Needs Schools with Standards for Mathematical Practice**

(6–8) Gallery Workshop

Participants will work on a rich set of problems we've used successfully in high-needs (and other) schools. Each problem will make use of spatial reasoning, encourage organization of data, and lead to generalized solutions. We'll share student work and discuss how this mathematics supports the Common Core Standards for Mathematical Practice.

**James R. Matthews**

Siena College, Loudonville, New York

**Jenny K. Tsankova**

Roger Williams University, Bristol, Rhode Island

**361 AD (GEORGE R. BROWN CONVENTION CENTER)****276****An Innovative, Practical Approach to Formative Assessment Using Student Work**

(6–12) Gallery Workshop

Principles to Actions

Learn how one district is developing teacher capacity to implement and sustain high-quality formative assessment processes in the middle school math classroom, and discover the implications for self-efficacy, motivation, and learning. The session incorporates video and tools from a job-embedded professional development framework using authentic student work.

**Kathleen Dempsey**

Mid-continent Research for Education and Learning - McREL, Denver, Colorado

**Andrea Beesley**

Mid-continent Research for Education and Learning - McREL, Denver, Colorado

**351 CF (GEORGE R. BROWN CONVENTION CENTER)****277****Closure: Making Every Minute Count**

(6–12) Gallery Workshop

Principles to Actions

Making every minute count in a classroom means leaving everyone with a lasting impression of what was learned in class that day. The participants will experience many closure activities using study team/pair strategies as well as individual activities like Power Writing, Ticket Out, and First Out, to name a few.

**Lois M. McCarty**

CPM, Sacramento, California

**330 (GEORGE R. BROWN CONVENTION CENTER)**

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3:15 P.M.—4:30 P.M.

**278**

### **Bicycles and Music: A Mean Connection**

(9–12) Gallery Workshop

There's a reason why it always feels like you're almost always riding uphill on a bicycle trip. In this hands-on session (no, we won't be riding bikes), we'll explore this phenomenon and then tie our findings into an investigation of the arithmetic, geometric, and harmonic means. All of these means tie directly into music, and we'll see how.

**Bob Horton**

Clemson University, South Carolina

**320 AD (GEORGE R. BROWN CONVENTION CENTER)**

**279**

### **Transmute Your Classroom through Transformations**

(9–12, Preservice and In-Service) Gallery Workshop

Transmute your reluctant learners into active participants with transformation activities. Your students will manage your classroom for you as they learn how transformations affect shapes and functions. Easily get students to learn vocabulary. Leave with ready to use management techniques, lesson plans, assessments, activities, and vocabulary!

**Juliann M. Doris**

Del Valle Independent School District, Texas

**362 AD (GEORGE R. BROWN CONVENTION CENTER)**

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3:30 P.M.—4:30 P.M.

**280**

### **Native American–Based Mathematics Materials**

(General Interest) Session

This session presents mathematics materials based in the culture and mathematics of Native American peoples for integration into K–12 or undergraduate courses. These materials—both paper and electronic—are classroom ready and are developed and piloted in consultation with tribes throughout the West.

**Charles P. Funkhouser**

California State University, Fullerton

**Miles R. Pfahl**

Turtle Mountain Community College, Belcourt, North Dakota

**Harriet C. Edwards**

California State University, Fullerton

**342 AD (GEORGE R. BROWN CONVENTION CENTER)**

**281**

### **Project-Based Learning: Engage and Assess Your Students Authentically**

(General Interest) Session

Principles to Actions

This presentation will explore what project-based learning is, how it benefits students, and how to develop it. We will look at examples of projects used in the classroom including kinetic sculptures, design and construction of scale models, jigsaw puzzles, math history/number systems, and independent projects, among others.

**Louis R. Freese**

DeVry University, Westminster, Colorado

**GRAND BALLROOM C (GEORGE R. BROWN CONVENTION CENTER)**

**283**

### **Bring Math to Life**

(Pre-K–2) Session

Learn how to make math come to life by implementing songs to motivate and engage students. Teachers will learn how to get young learners to be successful with problem solving by identifying clue words and facts in a word problem using a highlighter. Learn how to get students to write an explanation and equation while maintaining a math journal too.

**Melissa Salana Collins**

Memphis City Schools, Tennessee

**350 DEF (GEORGE R. BROWN CONVENTION CENTER)**

**284**

### **Engaging Fractions**

(3–5) Session

Students continue to be challenged when working with fractions. This session will engage participants in games designed to help students develop conceptual understanding of fractions.

**Sue Brown**

University of Houston-Clear Lake, Texas

**360 DEF (GEORGE R. BROWN CONVENTION CENTER)**

**285****Fair Is Fair: Meeting the Needs of Your Gifted Students**

(3–8) Session

Principles to Actions

Many teachers are being asked to focus on below-proficient students at the expense of their top achievers. Yet it's important that we meet the needs of students at both ends of the spectrum. This presentation will provide teachers with a set of "Dos and Don'ts" that will help them to better meet the needs of their gifted and high-achieving students.

**Rita H. Barger**

University of Missouri–Kansas City

**352 DEF (GEORGE R. BROWN CONVENTION CENTER)****286****Geometry in the Upper Elementary and Middle Grades**

(3–8) Session

Geometry is important for all grade levels, and especially for the middle grades. Learn how geometry supports big ideas from number and operations to equations and expressions. Let's take a vertical look at how geometry flows from elementary to high school, and use classroom-ready lessons to showcase important teaching and learning strategies.

**Paul D. Gray**

Triumph Learning, Houston, Texas

**GRAND BALLROOM B (GEORGE R. BROWN CONVENTION CENTER)****287****All about Changes: What Every Middle Schooler Should Know**

(6–8) Session

Middle school is all about changes, especially in the context of the Common Core State Standards for Mathematics. Let's investigate ways to utilize technology to better incorporate proportional reasoning through measurement conversions, unit rates, and rates of change in grades 6–8.

**Lorie C. McFee**

North Buncombe High School, Weaverville, North Carolina

**GRAND BALLROOM A (GEORGE R. BROWN CONVENTION CENTER)****288****Connect the Dots (Data Points)**

(6–12) Session

In this session, we will use SMART Board software and other technology (overheads work, too) to focus on making sense out of data. Topics will include dot plots and box plots and connections between them, scatter plots, and functions modeling linear relationships between quantities, interpreting the rate of change, and initial value in terms of the situation it models.

**Linda Treilman**

Mercer County Community College, West Windsor, New Jersey

**360 ABC (GEORGE R. BROWN CONVENTION CENTER)****289****Investigations, Practice, Assessment: Making Tasks Count**

(6–12) Session

Choosing, adapting, and implementing tasks are the essence of what teachers do in their classrooms. How do we choose tasks that get at the important mathematics we need to teach? Are there ways to make the tasks more worthwhile? What are some strategies to get students engaged in meaningful ways? And what does technology have to do with it all?

**Gail Burrill**

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

**332 AD (GEORGE R. BROWN CONVENTION CENTER)****290****Completing the Square**

(9–12) Session

What should instruction look like that prepares all students for success? Explore a classroom-ready lesson that uses completing the square to translate between forms of a quadratic equation using algebra tiles.

**Julie Horn**

Region 4 Education Service Center, Houston, Texas

**362 BCEF (GEORGE R. BROWN CONVENTION CENTER)**



3:30 P.M.–4:30 P.M.

**291**

## Transitioning a Distance College Algebra Course to Online

(Higher Education) Session

Learn about the pedagogical and technological considerations addressed in converting a traditional, print-based college algebra correspondence course to an interactive online learning experience. Examine interactive learning modules developed in Adobe Captivate.

**Theresa L. Jones**

Texas State University, San Marcos, Texas

**361 CF (GEORGE R. BROWN CONVENTION CENTER)**

**292**

## Statue of Liberty to Taj Mahal: Comparing Indian and U.S. Math Education

(Research) Session

Motivated by the idea of adaptation, accommodation, and modification, this study explores salient features of K–8 mathematics curricula of urban schools and sociocultural dynamics in India that might enable culturally and linguistically different (CLD) Indian students to make sense of the mathematics taught in New York City Schools and perform better.

**Rupam Saran**

City University of New York, New York

**310 BE (GEORGE R. BROWN CONVENTION CENTER)**



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TEACHERS OF MATHEMATICS

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Charleston | February 6–7, 2015

## Effective Teaching with *Principles to Actions*:

Implementing College- and Career-Readiness Standards

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Friday

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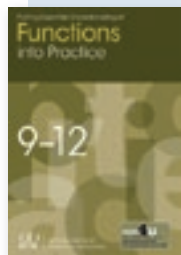
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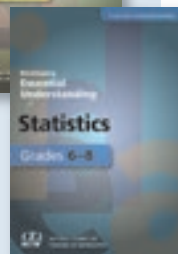
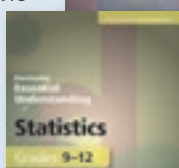
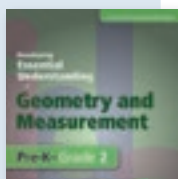
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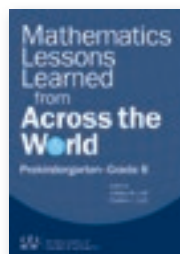
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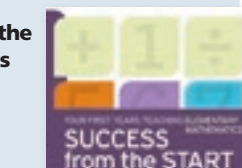
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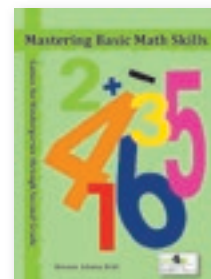
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## MORE NEW BOOKS

**NEW | Mastering Basic Math Skills: Games for Kindergarten through Second Grade**

BY BONNIE BRITT

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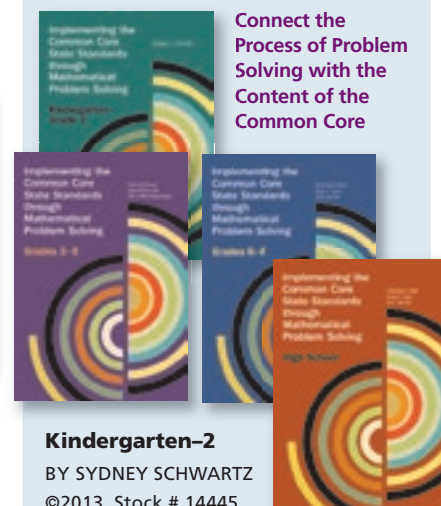


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# NCTM Individual Membership Application

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Primary E-mail\* \_\_\_\_\_

Your grade level interest (check all that apply)\*:  PreK-2  3-5  6-8  9-12  Higher Education

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# Affiliate Membership

## Join an NCTM Affiliate Today!

Once you have joined NCTM, membership in an NCTM Affiliate is a terrific way to round out your professional involvement. Affiliates offer you an opportunity to link with teachers in your state, region, or city for support, professional development opportunities, community outreach, political advocacy, and information sharing.

A list of Partner Affiliates in the conference's region and the Affiliates-at-Large appears below. To join one of these groups, email the Affiliate contact for membership information. NCTM has more than 200 Affiliates throughout the United States and Canada. For a list of all organizations affiliated with NCTM and information on how to join, please see the Affiliate Directory on the NCTM website.

## Affiliate Information

### ALABAMA

#### Alabama Council of Teachers of Mathematics

Sarah Patrick, patrickSEP@aol.com

### ARIZONA

#### Arizona Association of Teachers of Mathematics

Nicole Kooiman, kooiman.nicole@cusd80.com

### ARKANSAS

#### Arkansas Council of Teachers of Mathematics

Aimee Evans, aimee.evans@sbcglobal.net

### COLORADO

#### Colorado Council of Teachers of Mathematics

Laurie Hillman, laurie.hillman@weldre4.k12.co.us

### FLORIDA

#### Florida Association of Mathematics Supervisors

Margaret Bambrick, ndbambrick@att.net

#### Florida Council of Teachers of Mathematics

Diane Gard, gard.diane@brevardschools.org

### KANSAS

#### Kansas Association of Teachers of Mathematics

Betsy Wiens, wienseli@usd437.net

### LOUISIANA

#### Greater New Orleans Teachers of Mathematics (Louisiana)

Amy Liberta, amy.liberta@jppss.k12.la.us

#### Louisiana Association of Teachers of Mathematics

Kathie Rose, kathie.rose@cpsb.org

#### Louisiana Council of Supervisors of Mathematics

DesLey Plaisance, desley.plaisance@nicholls.edu

#### Northwest Louisiana Mathematics Association

Marilyn Bartlett-Jackson, mgbartlett@caddo.k12.la.us

### MISSISSIPPI

#### Mississippi Council of Teachers of Mathematics

Joyce Deer, math@jdeer.com

### NEW MEXICO

#### New Mexico Council of Teachers of Mathematics

Teresa Palmer, tpalmer\_nmctm@comcast.net

### OKLAHOMA

#### Oklahoma Council of Teachers of Mathematics

Karen Strande, thestrandes@sbcglobal.net

### TEXAS

#### Texas Association of Supervisors of Mathematics

Linda Sams, linda.sams@cfsd.net

#### Texas Council of Teachers of Mathematics

Kathy Hale, khale@esc14.net

### UTAH

#### Utah Council of Teachers of Mathematics

Andrew Glaze, aglaze@dmail.net

## About the Host Organizations

Texas Council of Teachers of Mathematics (TCTM) is the Texas state affiliate of NCTM. It has more than 5000 members and co-sponsors an annual conference called the Conference for the Advancement of Mathematics Teaching (CAMT) every summer. It publishes the Texas Mathematics Teacher twice a year with peer-reviewed articles, classroom activities, and other information. We host an all-expense paid retreat for selected teachers and leaders who want to write articles for the Texas Mathematics Teacher. We also offer \$1200 grants for teachers in Texas as well as \$2000 scholarships for preservice teachers. For more information check out our website at [tctmonline.org](http://tctmonline.org).

Central Texas Council of Teachers of Mathematics (CTCTM) is the local NCTM affiliate serving central Texas, including Waco, home of Baylor University; local school districts; and numerous communities in the Fort Hood area. It has approximately 125 members; holds a fall general meeting and a spring conference annually with national, state, and local speakers; and provides a quarterly newsletter to members.

Rio Grande Valley Council of Teachers of Mathematics (RGVCTM) is the largest NCTM local affiliate in the country. It has more than 1000 members and holds an annual conference each November showcasing nationally known speakers alongside home-grown teacher leaders. RGVCTM serves a variety of communities, including McAllen, Harlingen, and Brownsville, along the border with Mexico in the Rio Grande Valley.

## Affiliates-at-Large

### Adult Numeracy Network

Lynda Ginsburg, ginsburg@rci.rutgers.edu

### Association of Mathematics Teacher Educators

Megan Burton, meb0042@auburn.edu

### Association of State Supervisors of Mathematics

Charles Watson, chaswatson@sbcglobal.net

### Benjamin Banneker Association, Inc.

Mylah Deliford, mdliford@hotmail.com

### Council for Technology in Mathematics Education

Stephanie Cooperman, scooperman@chatham-nj.org

### Council of Presidential Awardees in Mathematics

Jennifer Rising, jmrising@me.com

### National Council of Supervisors of Mathematics

Sharon Rendon, sharon.rendon@k12.sd.us

### North American Study Group on Ethnomathematics

Julie Herron, juherron@calpoly.edu

### Society of Elementary Presidential Awardees

Martha Short, mshort@ltd.net

### TODOS: Mathematics for ALL

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Andria Disney, andriadisney@live.com

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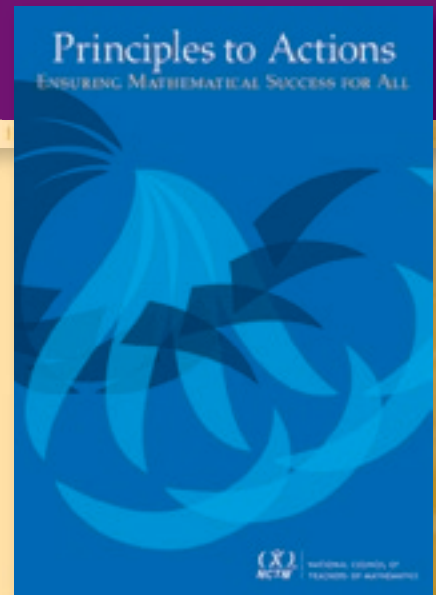
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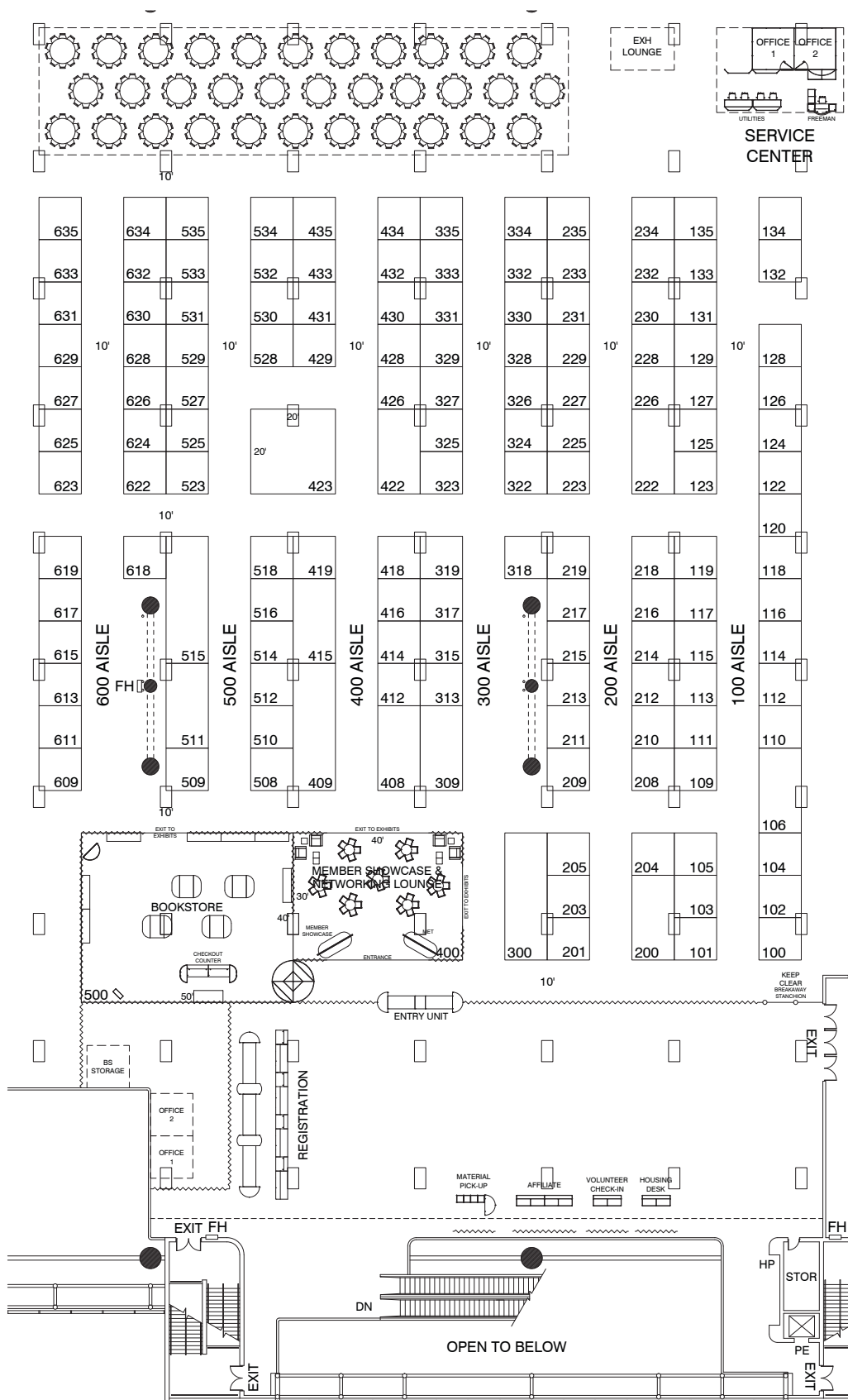
# Floor Plans

George R. Brown  
Convention Center

Third floor



# Exhibit Hall Floor Plan



## 3P Learning Mathletics

**Booth: 211**

New York, New York

PH: 866-387-9139

[www.3plearning.com](http://www.3plearning.com)

Mathletics is a K–12 online resource for teachers and students designed to motivate, inspire, and help students learn new math concepts. Mathletics is accessible at home, in school, on iPads, and tablets. Schools select TEKS or Common Core Courses as needed. Teachers use videos, interactives, and animated support within the adaptive activities to teach and enhance learning. Live Mathletics strengthens computational fluency as students love to engage in real time global or class challenges!

## A

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**Booth: 508**

Orange, Texas

PH: 409-543-6755

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

The Algebra Readiness Builder series is a supplement to any curriculum and will enhance students' base understanding of concepts and skills necessary for success on word problems, projects, and test preparation. Our books distribute practice over time allowing for deeper understanding of current and future mathematical concepts. Algebra Readiness Educators, LLC is a company owned and operated by full-time educators. Come by booth 508 for more information.

### Ascend Education

**Booth: 115**

Shreveport, Louisiana

PH: 318-865-8232

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

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## B

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New York, New York

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### Big Ideas Learning, LLC

**Booth: 222**

Erie, Pennsylvania

PH: 877-552-7766

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

The Big Ideas Math program provides both middle and high school students a balanced approach to instruction. Its combination of print and online materials is aligned to the Common Core State Standards and Progressions documents and incorporates the Mathematical Practices within each lesson. Using engaging activities followed by rich, direct instruction lessons, Big Ideas Math offers opportunities for students to reason and incorporate real-life math scenarios in a classroom environment.

### Borenson and Associates, Inc.

**Booth: 208**

Allentown, Pennsylvania

PH: 610-398-6908

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

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### Box Cars & One-Eyed Jacks Inc

**Booth: 218**

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PH: 780-440-6284

[boxcarsandoneeyedjacks.com](http://boxcarsandoneeyedjacks.com)

Box Cars and One-Eyed Jacks is the leader when it comes to math games. All of our award-winning K–10 resources are correlated to the Common Core standards and are used across the country. We are one of the leading suppliers of dice, cards, dominoes, and other math manipulatives. The Box Cars consulting team provides the best hands-on training in the country when it comes to games as a teaching strategy. We offer half, full, and intensive school-wide trainings.

### Britannica Digital Learning

**Booth: 116**

Chicago, Illinois

PH: 800-621-3900

[mathincontext.eb.com](http://mathincontext.eb.com)

Aligned to state standards and the Common Core, Mathematics in Context (MiC) is a modular middle grades series. MiC consists of real-world mathematical tasks designed to stimulate mathematical thinking and the use of math models, to promote discussion among students, and to develop mathematically proficient students. It is used in schools around the country as a whole curriculum, a supplemental series, a resource for advanced fifth graders, and remediation for struggling algebra students.



## C

### Casio America, Inc.

#### Booth: 511

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

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### CPM Educational Program

#### Booth: 322

Elk Grove, California  
PH: 209-745-2055  
[www.cpm.org](http://www.cpm.org)

CPM offers grades 6–12 mathematics textbooks that use problem-based learning in student-centered classrooms and supports it with funded professional development. The Core Connections series is 100% aligned with CCSS content and practices. High school books offer both traditional and integrated pathways.

### Creative Mathematics

#### Booth: 518

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

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### Dinah-Might Adventures, LP

#### Booth: 408

San Antonio, Texas  
PH: 210-698-0123  
[www.dinah.com](http://www.dinah.com)

Dinah-Might Adventures is an educational publishing and consulting company owned by Dinah Zike, Author/Speaker. Her books are known for their innovative ways to use Foldables® in teaching all subjects and grade levels. She also offers professional development at the Dinah Zike Academy, a unique trainer of trainers facility in Texas.

## E

### EAI Education

#### Booth: 201

Oakland, New Jersey  
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[www.eaieducation.com](http://www.eaieducation.com)

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### Educators Outlet, Inc.

#### Booth: 315

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

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### ExploreLearning

#### Booth: 205

Charlottesville, Virginia  
PH: 866-882-4141 ext. 224  
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## F

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#### Booth: 217

Hemet, California  
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**Booth: 111**

Portsmouth, New Hampshire

PH: 603-431-7894

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

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## Hewlett-Packard

**Booth: 109**

San Diego, California

PH: 619-677-8049

[www.hp.com/calculators](http://www.hp.com/calculators)

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**Booth: 209**

Austin, Texas

PH: 512-721-7161

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

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## It's A Hoot!

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**Booth: 103**

San Mateo, California

PH: 855-255-8800

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

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## K

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**Booth: 215**

Saco, Maine

PH: 207-283-4852

[www.k8resources.com](http://www.k8resources.com)

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## L

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**Booth: 104**

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PH: 888-844-9022

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

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**Booth: 204**

Huntsville, Ontario, Canada  
PH: 705-789-8912

[thelearningcarpet.com](http://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.

### Learning Wrap-Ups

**Booth: 418**

Layton, Utah  
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 more than 30 years and have been called the "best learning center products" available.

### Lone Star Learning

**Booth: 414**

Lubbock, Texas  
806-281-1424

[lonestarlearning.com](http://lonestarlearning.com)

Lone Star Learning is a curriculum development company offering unique, easy-to-use visuals and interactive bulletin boards that give students the specific practice needed to achieve mastery in math, science, and language arts. Lone Star Learning is the proud winner of Learning magazine's Teachers' Choice Award for three years running. We strive to increase student success while decreasing teacher effort with our innovative products! We hope to become an integral part of your classroom!

## M

### Mangahigh.com

**Booth: 122**

London, England, UK  
PH: 877-626-4244

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

Learn about this K–10 games-based math resource. Mangahigh's new approach to online math uses behaviorist techniques from the social games world to generate incredible student engagement. Adaptive technology and personalized learning pathways ensure that students not only master the curriculum, but learn to love math.

### MarkerBoard People

**Booth: 219**

Lansing, Michigan  
PH: 800-379-3727

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

Our student dry erase markerboards and response boards in class sets are great for instant response and instant assessment. And at unbeatable prices! Single- and double-sided available. Perfect for math, science, language arts, graphing, handwriting and more. Long-lasting, non-toxic, ultra-low odor markers too!

### Marshall Cavendish

**Booth: 325**

Tarrytown, New York  
PH: 914-332-8888

[mceducation.us](http://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 13 languages, in more than 50 countries, and are used by 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.

### Mastery Ed

**Booth: 101**

Fallbrook, California  
PH: 800-454-6284

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

Mastery Educational Service (Mastery Ed), authorized representative for the Math-U-See line of products and services for Special Education. Specializing in RtI Tier 2 and 3 level interventions, we help you develop a program that truly is geared to provide unique, individualized instruction for students. If you are looking for a math program that meets the Common Core Standards for Mathematical Practice or training, we can help. Full demo and info at Booth 101, or go to [www.MasteryEd.com](http://www.MasteryEd.com) or call us at 800-454-6284.

### Math Solutions

**Booth: 510**

Sausalito, California  
PH: 415-339-4818

[mathsolutions.com](http://mathsolutions.com)

Math Solutions, founded by Marilyn Burns, has been transforming instruction for 30 years by providing the highest quality professional learning, resources, and coaching to improve mathematics instruction and student proficiency. With partnerships across schools and districts nationwide, Math Solutions offers comprehensive professional learning to transform curriculum and instruction, while preparing students for the rigorous expectations of college and career.

### Math Teachers Press

**Booth: 319**

Minneapolis, Minnesota  
PH: 800-852-2435

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

Our Blended Learning Management System for pre-K–12 provides formative assessment and conceptual-based instruction using manipulatives with research based strategies and proven results. Objectives are correlated to all state and national standards. Instruction integrates the Concrete-Representational-Abstract (CRA) pedagogy with scripted lesson plans to provide embedded PD achievement gains for all students, especially ELL and basic/below basic levels. Includes web-based assessment and e-guides.

## **Mathalicious**

**Booth: 509**

Charlottesville, Virginia

PH: 530-420-5474

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

61 percent of middle schoolers would rather take out the garbage than do math homework. For them, math isn't just a chore . . . it's worse! But it doesn't have to be that way. Mathalicious offers engaging real-world lessons and projects aligned to Common Core Standards for middle and high school. Lessons promote the Common Core Standards for Mathematical Practice by providing opportunities for students to think critically and creatively, develop arguments, and critique the reasoning of others.

## **Mathspace**

**Booth: 216**

New York, New York

PH: 718-510-2582

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

Come see something truly different! Mathspace is the world's only app that allows students to hand-write all their worked solutions step-by-step for every question. Hints, videos, lessons, and next steps support students at every step, with adaptive learning to personalize their math journey. All results are summarized into useful reports for teachers to pinpoint problem areas to focus teaching. So if you always say, "How you got the answer is as important as the final answer," come speak to us!

## **McGraw-Hill Education**

**Booth: 110**

Columbus, Ohio

PH: 614-430-4482

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

McGraw-Hill Education partners around the world with students, educators, administrators, and other professionals to deliver engaging, adaptive and personalized solutions that improve performance and results. We combine proven, research-based content with the best emerging digital technologies to guide assessment, teaching, and learning to achieve the best possible outcome for students, instructors, and institutions.

## **Mentoring Minds**

**Booth: 119**

Tyler, Texas

PH: 800-585-5258

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

Founded more than a decade ago, Mentoring Minds, the Critical Thinking for Life Company, develops affordable, effective learning tools that give students the skills to succeed, not just in the classroom, but in life. Experienced educators create K-12 print and online resources that integrate best practices for instruction, assessment, and learning for students across the nation. For more information about Mentoring Minds and its educational resources, call 800-585-5258 or visit [mentoringminds.com](http://mentoringminds.com).

## **MIND Research Institute**

**Booth: 317**

Irvine, California

PH: 888-751-5443

[www.mindresearch.net](http://www.mindresearch.net)

MIND is a neuroscience and education nonprofit that applies its distinctive visual approach to the development of math instructional software. MIND helps local schools create a blended learning environment to create a culture of critical thinkers for the next generation of STEM leaders. MIND's ST Math® programs reach 630,000 students and 25,000 teachers in 2,050 schools in 35 states. For more information, visit [www.mindresearch.net](http://www.mindresearch.net).

## **N**

### **Nasco**

**Booth: 419**

Fort Atkinson, Wisconsin

PH: 920-563-2446

[eNasco.com](http://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 Common Core 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.

### **National Geographic Learning**

**Booth: 210**

Boston, Massachusetts

PH: 888-915-3276

[www.ngl.cengage.com](http://www.ngl.cengage.com)

National Geographic Learning provides quality pre-K-12, academic, and adult education instructional solutions for reading, writing, science, social studies, ESL/ELD, Spanish/dual language, advanced and electives, career and technical education, and professional development.

## **NCTM Affiliates-at-Large**

**Booth: 113**

Reston, Virginia

PH: 480-894-9347

[bannekermath.org](http://bannekermath.org); [www.todos-math.org](http://www.todos-math.org);

[www.wme-usa.org](http://www.wme-usa.org)

The Benjamin Banneker Association, TODOS Mathematics for ALL, and Women and Mathematics Education are three NCTM Affiliates-at-Large that focus on an equitable mathematics education for groups that have been historically underrepresented in mathematics.

## **Neufeld Learning Systems Inc**

**Booth: 223**

London, Ontario, Canada

PH: 519-657-9334

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

Neufeld Learning Systems provides browser-based technology solutions and customized professional development for reaching all learners and teachers of mathematics. UMATH X "goes deep" to address Common Core content with diagnostic tests for kindergarten to algebra 1. UMATH X provides strand specific assessments and student reports to guide instruction and next steps.

## **NextLesson**

**Booth: 525**

San Francisco, California

PH: 415-968-9655

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

NextLesson is the go-to place for Common Core projects, lessons, and simulations. Our mission is to help teachers prepare students for the real world by offering engaging, rigorous, and relevant content along with cool interactive instructional tools. We are started by parents, guided by teachers, and built for students. We hope to build a better tomorrow by working on one simple, driving question: "How can we prepare students for the real world?"

## **O**

### **Origo Education**

**Booth: 409**

Saint Charles, Missouri

PH: 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 (adopted in Texas) 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 and students. Our diverse selection of products brings a renewed enthusiasm to students' learning experiences.



## P

### Pearson

**Booth: 515**

Upper Saddle River, New Jersey  
PH: 201-236-6613  
[www.Pearsoned.com](http://www.Pearsoned.com)

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

### Renaissance Learning

**Booth: 300**

Wisconsin Rapids, Wisconsin  
PH: 715-424-3636  
[www.renaissance.com](http://www.renaissance.com)

Accelerated Math™ differentiates dynamic practice of grade-level CCSS or state standards by depth, as current standards recommend. The software automates the assess-teach-learn cycle by integrating STAR Math™ data to place students in instructional groups and automatically scheduling a full year of standards coverage. Assignments can be delivered online or printed.

## S

### Sapling Learning

**Booth: 123**

Austin, Texas  
PH: 855-858-4774  
[www.saplinglearning.com](http://www.saplinglearning.com)

Created and supported by educators, Sapling Learning's online curriculum and homework drive student success and save educators time.

### Scholastic

**Booth: 512**

New York, New York  
PH: 212-343-6100  
[www.scholastic.com](http://www.scholastic.com)

Scholastic is the world's largest publisher and distributor of children's books and is a leader in educational technology. The company creates quality books, print- and technology-based learning materials and programs, classroom magazines, multimedia, and other products that support teachers and help children learn both at school and at home.

### Share My Lesson

**Booth: 118**

Washington, D.C.  
[www.sharemylesson.com](http://www.sharemylesson.com)

Developed by teachers for teachers, Share My Lesson is a FREE website offering more than 300,000 resources covering all subjects and grades. The site also houses the most Common Core resources available for teachers. Come visit our booth to find out how to search for resources and how to share your own resources. Following the motto of "by teachers for teachers," participants will also learn about our unique professional development opportunities where educators from across the country come together to develop or identify resources to share with their colleagues around such topics as Common Core, early childhood education (toddler to pre-K), formative assessment techniques, and more!

### Singapore Math Inc.

**Booth: 309**

Tualatin, Oregon  
PH: 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 1508 to peruse our Singapore Math® books and to learn more about the Singapore approach to teaching and learning mathematics.

### SpringBoard, The College Board

**Booth: 117**

New York, New York  
PH: 212-373-8762  
[collegeboard.org/springboard](http://collegeboard.org/springboard)

SpringBoard is the College Board's college and career readiness program for all students in grades 6–12. Its flexible framework integrates rigorous instruction, performance-based assessment, and exemplary professional development.

### SPROGLIT, LLC

**Booth: 514**

Solana Beach, California  
PH: 858-792-6503  
[www.sproglit.com](http://www.sproglit.com)

Sproglit is unveiling one of the most brilliant innovations since multiplication tables. The Math Arrow matrix conveys number sense to kids, making addition/subtraction more intuitive. Sproglit creates Math Arrow games, posters, and workbooks. A university study found that first graders who play the Kyle Counts app boost addition scores by over 7.5% after an hour of play. Come to our workshop November 20 at 8 a.m., room 320BE, to see former White House advisor Todd Buchholz show the Math Arrow in action.

## T

### TenMarks Education, An Amazon Company

**Booth: 516**

Burlingame, California  
PH: 415-305-7211  
[www.tenmarks.com](http://www.tenmarks.com)

TenMarks is the most comprehensive online solution designed for the new Common Core math standards. With integrated math practice, instruction, intervention, assessments, and differentiation, TenMarks provides teachers with the ability to reinforce what they're teaching in class, with automatic intervention when necessary, and the power to differentiate instruction for students with ease. Designed for grades 1 through algebra and geometry, TenMarks is the program of choice in 25,000+ schools.

### Texas Instruments

**Booth: 423**

Dallas, Texas  
PH: 214-567-6409  
[education.ti.com](http://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, all designed to promote conceptual understanding, and formative assessment tools that gauge student progress. Visit [education.ti.com](http://education.ti.com).



# Exhibitor Directory

## Triumph Learning

**Booth: 225**

New York, New York

PH: 859-552-5765

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

At Triumph Learning our mission is simple: to improve teaching and learning through a powerful blend of supplemental and state-customized solutions. We offer unique student resources and robust teacher support. Triumph imprints and products—Coach, Buckle Down, Options, Readiness for the Common Core, and Mastering the TEKS Online—are recognized for their critically acclaimed student texts and interactive digital tools.

## W

### Western Governors University

**Booth: 203**

Salt Lake City, Utah

PH: 801-290-3636

[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.

## WIRIS math & science

**Booth: 523**

Barcelona, Spain

877-888-7919

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

WIRIS is a suite of tools for mathematics education. We are focused on the integration with web-based platforms, with special emphasis on LMS (learning management systems). Our suite comprises: WIRIS editor, a visual, accessible math formula editor compatible with tablets; WIRIS quizzes, a math engine for online assessment; and WIRIS cas, a next-generation computer algebra system. We are the formula editor in Blackboard Learn, D2L, and a few other big names. We also integrate in open-source platforms like Moodle.

## Woot Math

**Booth: 102**

Boulder, Colorado

PH: 303-449-6284

[wootmath.com](http://wootmath.com)

Woot Math is an award-winning, education technology company focused on helping struggling students master core math concepts. The supplemental software delivers a personalized progression of interleaved video instruction and scaffolded problems to mimic the natural give-and-take between a student and a tutor. Woot Math is designed to engage students with an intuitive and interactive experience supported on iPad, Chromebook (and all other web platforms), and Android devices (including Amplify).

### Program Advertisers (in alphabetical order)

American Printing House for the Blind	8, 10
Big Ideas Learning/Larson	21
Heinemann	15, Inside Back Cover
Mu Alpha Theta	12
Origo Education	COUPON on 93
Singapore Math	Outside Back Cover
Texas Instruments	Inside Front Cover

### NCTM Advertising

#### MEMBERSHIP

NCTM Member Services	42, COUPON on 93
----------------------	------------------

#### PROFESSIONAL DEVELOPMENT

2015 Boston Annual Meeting & Expo	91
2015 Interactive Institutes	71
2015 Regional Conferences & Expos	92

#### PUBLICATIONS

New Books	72
Principles to Actions	77
Bookstore	COUPON on 93

## A

Abington, Josephine . . . . . 167  
 Alteparmakian, Tony . . . . . 206  
 Alvarado, Irma . . . . . 246  
 Anderson, Greta . . . . . 210  
 Ani, Karim . . . . . 107  
 Arrington, Katey . . . . . 171  
 Asturias, Harold . . . . . 58, 213  
 Ayyadhury, Shanthi . . . . . 75

## B

Bachman, Rachel . . . . . 254  
 Balka, Don . . . . . 172  
 Barger, Rita . . . . . 285  
 Barlow, Angela . . . . . 218  
 Barnes, David . . . . . 50, 195  
 Bastable, Virginia . . . . . 188  
 Bay-Williams, Jennifer . . . . . 109  
 Bazik, Edna . . . . . 260  
 Beesley, Andrea . . . . . 276  
 Bennett, Jennie . . . . . 54  
 Berghs, Kara . . . . . 135  
 Beverly, Lesa . . . . . 25  
 Bilir, Cetin Kursat . . . . . 98  
 Bolognese, Chris . . . . . 13  
 Bond, Jennifer . . . . . 202  
 Boswell, Laurie . . . . . 179  
 Bouniaev, Mikhail . . . . . 182  
 Brennan, Sana . . . . . 69  
 Briars, Diane . . . . . 138, 244  
 Brown, Lisa . . . . . 34, 82  
 Brown, Sue . . . . . 284  
 Bruun, Faye . . . . . 92  
 Buckley, Brenda . . . . . 85  
 Burger, Edward . . . . . 173  
 Burnett, James . . . . . 161  
 Burrill, Gail . . . . . 142, 289  
 Burson, Denise . . . . . 183  
 Bynum, Debbie . . . . . 185

## C

Callahan, Patrick . . . . . 216  
 Carpenter, Kara . . . . . 124  
 Carroll, Cindi . . . . . 264  
 Carter, John . . . . . 265  
 Case, Catherine . . . . . 95  
 Castle, Jennifer . . . . . 94  
 Chahine, Iman . . . . . 243  
 Chambers, Mona . . . . . 29  
 Chaney, Robert . . . . . 121  
 Chauvot, Jennifer . . . . . 62  
 Chinderle, Beth . . . . . 186  
 Cho, Hoyun . . . . . 46  
 Choate, Laura . . . . . 139  
 Clark, Andy . . . . . 261  
 Collins, Anne . . . . . 196  
 Collins, Melissa . . . . . 283  
 Condon, Gregory . . . . . 105  
 Coney, Ruth . . . . . 192

Conklin, Melissa . . . . . 184  
 Connell, Michael . . . . . 26  
 Cooper, Sandra . . . . . 67  
 Copley, Juanita . . . . . 6, 66  
 Corbett, Jonathan . . . . . 146  
 Cory, Beth . . . . . 48  
 CPM Educational Program 38.1  
 Crawford, Amy . . . . . 226  
 Creative Mathematics . . . . . 62.2  
 Crocker, Deborah . . . . . 22, 81  
 Crowley, Manuela . . . . . 199  
 Cuello Ventura, Rosanny . . . . . 45  
 Curry, Mary . . . . . 130

## D

Dahlquist, Kristine . . . . . 119  
 Davis, Natalie . . . . . 257  
 DeLong, David . . . . . 221  
 Dempsey, Kathleen . . . . . 276  
 DePaul, Debi . . . . . 18, 53  
 Diehl, John . . . . . 181  
 Dillon, Fred . . . . . 35  
 Dinah-Might Adventures 159.2  
 Dixon, Juli . . . . . 178  
 Dodd, Janet . . . . . 79, 247  
 Doris, Juliann . . . . . 279  
 Dougherty, Barbara . . . . . 9  
 Duarte, Thomas . . . . . 192  
 Dykema, Kevin . . . . . 203

## E

Edwards, Carol . . . . . 76  
 Edwards, Harriet . . . . . 280  
 Ekmekci, Adem . . . . . 65, 86.1  
 Empson, Susan . . . . . 55  
 Epperson, James . . . . . 267  
 Esmonde, Indigo . . . . . 108  
 Essex, Kathryn . . . . . 30

## F

Faulkenberry, Eileen . . . . . 223  
 Felling, Jane . . . . . 125  
 Fennell, Francis (Skip) . . . . . 128  
 Fisher, Alice . . . . . 106  
 Fisher, Gregory . . . . . 180  
 Freese, Louis . . . . . 281  
 Fried, Judy . . . . . 194  
 Funkhouser, Charles . . . . . 280  
 Furse, Garold . . . . . 154

## G

Gallagher, Kelly . . . . . 115  
 Gammon, Chris . . . . . 211  
 Gardella, Francis . . . . . 189  
 Garner, Sue . . . . . 266  
 Gersten, Russell . . . . . 90  
 Gerstenschlager, Natasha . . . . . 218  
 Gibson, Stephanie . . . . . 209  
 Gojak, Linda . . . . . 141

Goldenstein, Donna . . . . . 8  
 Goldstrom, Alexa . . . . . 45  
 Gonzalez, Ivette . . . . . 19, 252  
 Gonzalez, Lidia . . . . . 118  
 Gray, Paul . . . . . 286  
 Green, Rebecca . . . . . 105  
 Griffith, Linda . . . . . 120, 229  
 Grossie, Elizabeth . . . . . 100  
 Gupta, Dittika . . . . . 67

## H

Hackett, Maggie . . . . . 89  
 Haines, Brenna . . . . . 61  
 Hand, Victoria . . . . . 24  
 Handrick, Sandy . . . . . 186  
 Harbin Miles,

Ruth . . . . . 2, 43, 147, 244  
 Harris, Bernard . . . . . 1  
 Harris, Pamela . . . . . 256  
 Hart-Abel, Kathleen . . . . . 227  
 Hassay, Erika . . . . . 258  
 Hatchett, Mary Alice 101, 208  
 Hedges, David . . . . . 91  
 Helser, Susan . . . . . 14, 157  
 Hendershot, Miranda . . . . . 290  
 Herrera, Hoover . . . . . 259  
 Hicks, Amelia . . . . . 246  
 Hill, Wendy . . . . . 99  
 Hilsenbeck, James . . . . . 182  
 Horton, Bob . . . . . 21, 191, 278  
 Horn, Julie . . . . . 290  
 Houghton Mifflin Harcourt 98.2,  
 122.3, 243.3, 267.3  
 Hull, Ted . . . . . 43  
 Humphries, Alexandra . . . . . 198

## I

IXL Learning . . . . . 159.1

## J

Jackson, Bernadette . . . . . 85  
 Jacobs, Victoria . . . . . 55  
 Jasper, Bill . . . . . 11  
 Johnson Rock, Monica . . . . . 151  
 Jones, Dacia . . . . . 32  
 Jones, Dustin . . . . . 33  
 Jones, Lisa . . . . . 163  
 Jones, Theresa . . . . . 291  
 Jones Frank, Toya . . . . . 73  
 Jutras, Rob . . . . . 168

## K

Kader, Gary . . . . . 20  
 Kajitani, Alex . . . . . 68  
 Kanold, Timothy . . . . . 232  
 Karp, Karen . . . . . 9  
 Keesling, Paula . . . . . 262  
 Kemper, Mary . . . . . 220  
 Kent, Laura . . . . . 166

Kepner, Henry . . . . . 148  
 Kilday, Connie . . . . . 143  
 King, Helen . . . . . 94  
 Kiteala, Lori . . . . . 122  
 Klemm, Rebecca . . . . . 7, 78  
 Knoell, Donna . . . . . 41  
 Knudsen, Julie . . . . . 39  
 Kobett, Beth . . . . . 128  
 Kong, Ann . . . . . 134  
 Kontos, Susan . . . . . 93  
 Koontz, Suzy . . . . . 88, 236  
 Kulhanek, Stefani . . . . . 269  
 Kuntz, Marti . . . . . 40  
 Kurtz, Heather . . . . . 126  
 Kutach, Kelly . . . . . 23

## L

Labrecque, Rachael . . . . . 124  
 Lane, Matt . . . . . 107  
 Langer-Osuna, Jennifer . . . . . 201  
 Larocco, James . . . . . 135  
 Larson, Matthew . . . . . 4, 230  
 Lawrence, Gary . . . . . 46  
 Lee, Jin . . . . . 250  
 Legacy, Michael . . . . . 156  
 Leinwand, Steven . . . . . 87, 231  
 Leitze, Annette . . . . . 262  
 Lesser, Lawrence . . . . . 158, 219  
 Leveille, Nancy . . . . . 86  
 Long, Betty . . . . . 22, 81  
 Long, Jane . . . . . 25  
 Lowman, Christina . . . . . 198  
 Lusto, Chris . . . . . 107

## M

Mahieu, Frederic . . . . . 233  
 Maldonado, Luz . . . . . 258  
 Mallam, Winifred . . . . . 175  
 Maloney, Alan . . . . . 249  
 Mangahigh.com . . . . . 207.1  
 Marshall Cavendish . . . . . 146.1  
 Martinez-Black, Tyrone . . . . . 274  
 Mastery Educational  
 Services . . . . . 243.1  
 Math Teachers Press . . . . . 183.1  
 Mathspace . . . . . 14.3, 267.1  
 Matthews, James . . . . . 132, 275  
 Maxwell, Kori . . . . . 217  
 Mayfield, Amy . . . . . 103  
 McCarty, Lois . . . . . 277  
 McCrary, Marsha . . . . . 251  
 McFee, Lorie . . . . . 170, 287  
 McGraw-Hill  
 Education . . . . . 14.2, 146.2  
 McLaughlin, Ryan . . . . . 70  
 McManus, Laurie . . . . . 111  
 Meyer, Dan . . . . . 112  
 Mikles, Christine . . . . . 47  
 Milou, Eric . . . . . 155  
 Mitchell, Jennifer . . . . . 80

# Speaker Index

Mogilski, Jerzy . . . . . 182  
 Monck, Donna . . . . . 44  
 Moore, Carolyn . . . . . 52  
 Moore, Sara . . . . . 15, 42  
 Moore-Luchin, Beatrice . . . 204  
 Morton, Crystal . . . . . 3  
 Mostofo, Jim . . . . . 159  
 Mowry, Brian . . . . . 77, 245  
 Mukhopadhyay, Swapna . . . 28  
 Muller, Gretchen . . . . . 57  
 Murphy, Stuart . . . . . 31

## N

Neagoy, Monica . . . . . 102  
 Ng, Dicky . . . . . 249  
 Nguyen, Andy . . . . . 239  
 Nickerson, Rob . . . . . 17  
 Nielsen, Lynne . . . . . 116  
 Nite, Sandra . . . . . 12  
 North Morris, Jennifer . . . 190  
 Nowak, Kate . . . . . 216

## O

Oehrtman, Michael . . . . . 48  
 Ogbomo, Queen . . . . . 129  
 Oliver, Scott . . . . . 59  
 Olson, Heather . . . . . 10  
 ORIGO Education . . . . . 122.2  
 O'Sullivan, Jennifer . . . . . 176

## P

Palacios, Lisa . . . . . 114  
 Papakonstantinou, Anne . . 133  
 Parks, Amy . . . . . 16  
 Parr, Richard . . . . . 49  
 Pearson 38.2, 62.1, 98.1, 183.2,  
 207.3, 243.2, 267.2  
 Peck, Roxy . . . . . 242  
 Perez, Erick . . . . . 45

Peters, Susan . . . . . 117  
 Pettross, Vicki . . . . . 199  
 Pfahl, Miles . . . . . 280  
 Pham, Kien . . . . . 38  
 Phelps, Katherine . . . . . 198  
 Pilgrim, Mary . . . . . 110  
 Podleski, Ann . . . . . 146  
 Porath,  
 Jane . . . 2, 131, 147, 212, 244  
 Price, Ruth . . . . . 225  
 Pulliam, Rebecca . . . . . 209

## Q

Quander, Rebecca . . . . . 86, 215  
 Quiroz, Richard . . . . . 240

## R

Rangel-Lafuente, Gabriela . 290  
 Rappaport, Rebecca . . . . . 126  
 Reardon, Tom . . . . . 23  
 Relles, Marlon . . . . . 84  
 Restivo, Nicholas . . . . . 152  
 Retano, Marla . . . . . 246  
 Reynolds, Diane . . . . . 103  
 Roman, Ann . . . . . 123  
 Rose, William . . . . . 36  
 Rule, Lynn . . . . . 160  
 Rutledge, Zachary . . . . . 222

## S

Sack, Jacqueline . . . . . 26, 234  
 Sahu, Atma . . . . . 74  
 Sammons, Laney . . . . . 150  
 Saran, Rupam . . . . . 174, 292  
 Saylak, Diana . . . . . 162  
 Scarbrough, Kim . . . . . 205

Scher, Daniel . . . . . 72, 241  
 Schielack, Jane . . . . . 207  
 Schmit, Mark . . . . . 238  
 Scott, Jan . . . . . 126, 136, 153  
 Seeley, Cathy . . . . . 51  
 Sencibaugh, Joseph . . . . . 202  
 Serra, Michael . . . . . 253  
 Sgroi, Richard . . . . . 145  
 Shannon, Jeanne . . . . . 224  
 Share My Lesson . . . . . 122.1  
 Sharon, Valerie . . . . . 104  
 Shaughnessy, Meghan . . . . 237  
 Sherrod, Sonya . . . . . 75  
 Sinclair, Dan . . . . . 202  
 Singapore Math . . . . . 207.2  
 Skinner, Charlotte . . . . . 83  
 Skowron, Aniceta . . . . . 169  
 Snow, Karen . . . . . 194  
 Soto, Marvin . . . . . 239  
 Sproglit . . . . . 14.1  
 St. Jacques, Gail . . . . . 113  
 Stahl, Gayle . . . . . 268  
 Starnes, Daren . . . . . 193  
 Steffe, Leslie . . . . . 27  
 Steketeer, Scott . . . . . 72, 241  
 Stillman, Siegrid . . . . . 56  
 Stowasser, Peter . . . . . 248, 270  
 Suiter, Marilyn . . . . . 64  
 Surdovel, David . . . . . 60, 228  
 Sutton, Kim . . . . . 149  
 Swarthout, Mary . . . . . 104  
 Swim, Edward . . . . . 48

## T

Tabor, Glenna . . . . . 127  
 Tabor, Josh . . . . . 96  
 Tang, Greg . . . . . 164  
 Taylor-Cox, Jennifer . . . . . 177  
 Texas Instruments . . 38.3, 183.3

Thomas, Frederick . . . . . 121  
 Thompson, Fred . . . . . 180  
 Tienda, Monica . . . . . 187  
 Tondevold, Christina . 140, 160  
 Treilman, Linda . . . . . 288  
 Trevino, Emma . . . . . 144  
 Troutman, Susan . 106, 165, 273  
 Tsankova, Jenny . . . . . 275

## U

Ulrich, Katy . . . . . 27

## W

Walcott, Crystal . . . . . 30  
 Walsh, Terry . . . . . 71, 255  
 Wapner, Leonard . . . . . 37  
 Ward, Barbara . . . . . 5  
 Washington, Delaina . . . . . 163  
 Weerda, Anne . . . . . 235  
 Weilmuenster, Jacqueline . . 214  
 Wenrick, Melanie . . . . . 272  
 White, Carolyn . . . . . 165, 273  
 Wilkerson, Trena . . . . . 67, 97  
 Wisker, Nancy . . . . . 271  
 Wootton, Karen . . . . . 47  
 Worcester Tang, Tammy . . 200  
 Wray, Jon . . . . . 128

## Y

Yang, Robin . . . . . 224  
 Yepes-Baraya, Mario . . . . . 136  
 Yesbeck, Diana . . . . . 137  
 Yurek, Steve . . . . . 263

## Z

Zbiek, Rose . . . . . 197

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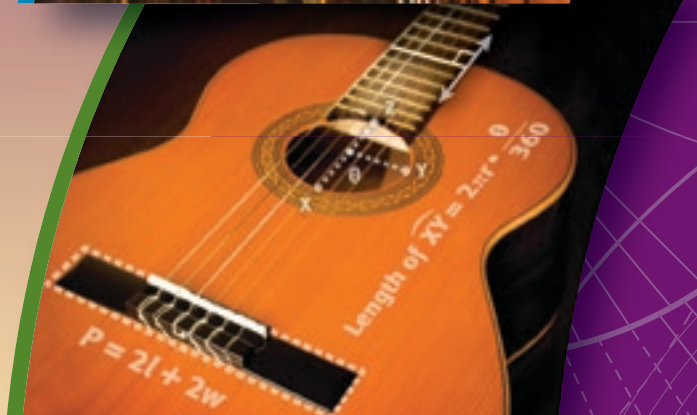
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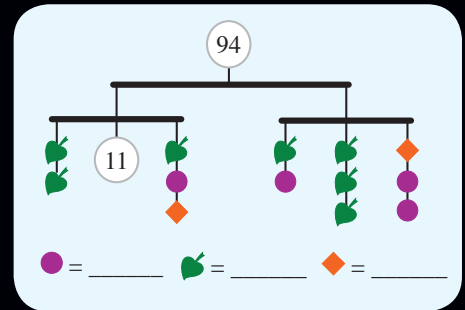
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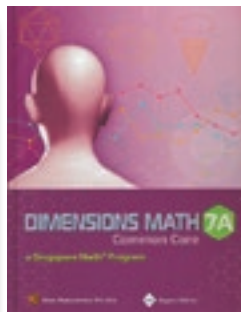
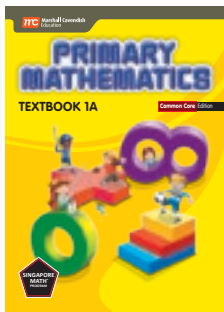
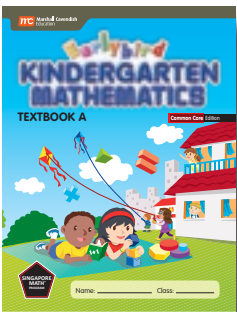
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