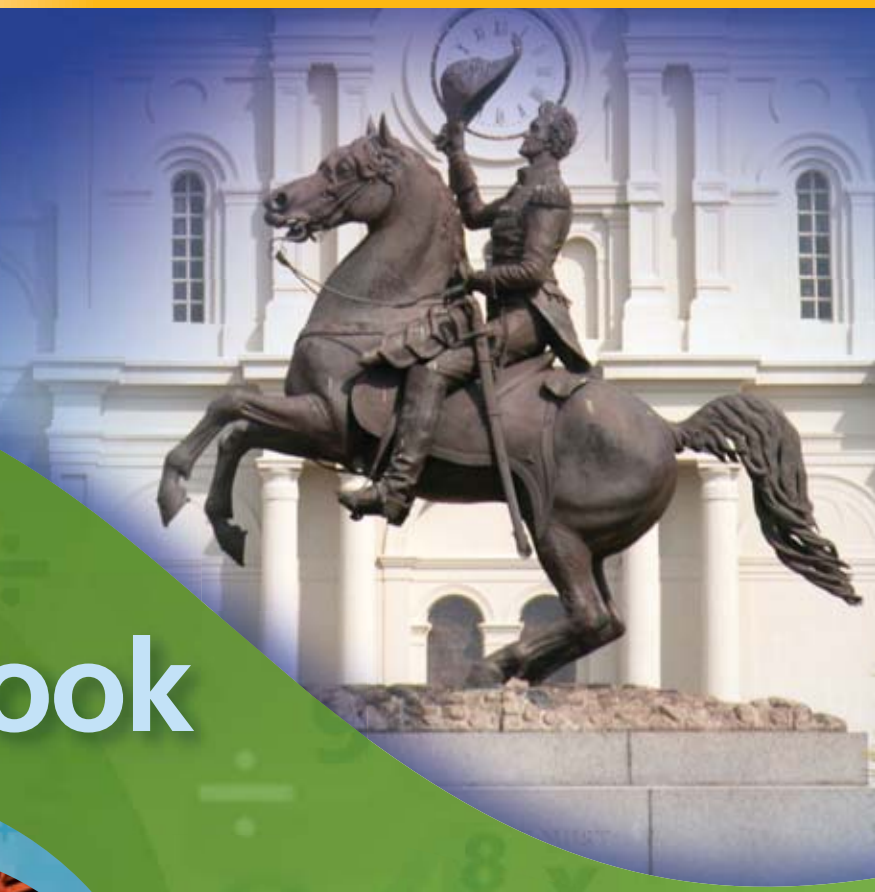
NCTM
NATIONAL COUNCIL OF TEACHERS OF MATHEMATICS

THE NATION'S PREMIER MATH EDUCATION EVENT

2014 NCTM ANNUAL MEETING & EXPOSITION

April 9–12 • New Orleans



Program Book

See Valuable COUPONS beginning page 205

www.nctm.org/neworleans

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2014 NCTM ANNUAL MEETING & EXPOSITION
April 9–12 • New Orleans

HOST
Louisiana Association of Teachers of Mathematics

MEETING FACILITY
All Annual Meeting presentations will be held at the Ernest N. Morial Convention Center and the Hilton New Orleans Riverside. See pages 166–171 for floor plans.

REGISTRATION (Convention Center)

Wednesday	8:00 a.m.	–	7:00 p.m.
Thursday	7:00 a.m.	–	4:00 p.m.
Friday	7:00 a.m.	–	4:00 p.m.
Saturday	7:00 a.m.	–	10:00 a.m.

EXHIBITS (Convention Center)

Thursday	8:00 a.m.	–	5:00 p.m.
Friday	8:00 a.m.	–	6:00 p.m.
Saturday	8:00 a.m.	–	Noon

BOOKSTORE (Convention Center)

Wednesday	10:00 a.m.	–	7:00 p.m.
Thursday	8:00 a.m.	–	5:00 p.m.
Friday	8:00 a.m.	–	6:00 p.m.
Saturday	8:00 a.m.	–	Noon

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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; Web www.nctm.org

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Welcome to New Orleans!

©PHOTO CREDIT NEW ORLEANS CVB

Welcome to New Orleans for the NCTM 2014 Annual Meeting & Exposition. You are one of the classroom teachers, mathematics educators, mathematicians, researchers, and more who are part of the world's largest annual meeting for mathematics education. You have many opportunities here to learn new ideas and approaches so you can help provide more and better mathematics for all students. We hope you will meet colleagues—both new and familiar—share ideas, and learn new information. The sessions, workshops, Bursts, and networking are only part of the experiences that will reignite your energy and send you back home anxious to start again. Our goal is for you to have the best professional development experience possible and for you to bring back many new ideas to share with all your colleagues.

Our theme for the New Orleans meeting is "Number and Operations: Be Radical and Get Real!" This is an extension of the Principles and Standards for School Mathematics, as well as a part of NCTM's commitment to making reasoning and sense making a part of all mathematics education. The Program Committee has been working for two years to make this a fantastic program with more than 700 presentations covering a wide range of areas. There are special sessions about teaching computational fluency, addressing social justice, using small-scale tasks in your classroom, creating your own learning community, and using technology. Additionally, the Benjamin Banneker Association, TODOS: Mathematics for ALL, and Women in Mathematics Education have created an Equity strand of sessions.

For those of you attending your first NCTM annual meeting, be ready for a professional experience unlike any other. Be sure to attend one of the First Timers' sessions to get you oriented. If you are in your first years of teaching, there is a special New Teacher strand for you, though those informative sessions will be of interest to everyone.

For those of you who are veterans of NCTM annual meetings and regional conferences, you know that you will have much to do. The changes started in Denver last year were so successful that they are continuing here. You can attend the new Burst sessions, be part of the Gallery Workshops, and more.

While in New Orleans be sure to find time to enjoy this historic city. When the conference day is over, join your colleagues and experience the Big Easy. You are close to the French Quarter and its unique mix of food, music, and entertainment. You may stop by the Preservation Hall to hear jazz or tour the National World War II Museum or visit the Metairie Cemetery (which has a Sphinx tomb!). You can even sample beignets and po'boys.

On behalf of the NCTM Board of Directors, the Program Committee, the NCTM staff, and the many volunteers who have worked countless hours making this conference a reality, Enjoy the Conference!

Linda M. Gojak
President, National Council of Teachers of Mathematics; John Carroll University, University Heights, Ohio

Fred Dillon
Program Committee Chair, Strongville City Schools, Ohio, Retired

Bob Doucette
Executive Director, National Council of Teachers of Mathematics

Beth Smith
Host Affiliate Liaison, Louisiana Association of Teachers of Mathematics

The NCTM 2014 Annual Meeting & Exposition officially begins with the Opening Session, starting at 5:30 p.m. on Wednesday, April 9, in the Great Hall of the Ernest N. Morial Convention Center. Presentations on Thursday, Friday, and Saturday begin at 8:00 a.m. each day and are scheduled concurrently throughout the day.

We have made every attempt to offer adequate seating for participants at the Annual Meeting & Exposition. The room capacity for each presentation is listed on all meeting room signs. For your safety and because of fire regulations, only those with seats will be allowed 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.

Learn↔Reflect Strand LCR

NUMBER AND OPERATIONS: BE RADICAL AND GET REAL!

THURSDAY, APRIL 10

Plan one full day for the Focus of the Year topic, Number and Operations: Be Radical and Get Real! The strand begins with a morning Kickoff session and concludes with an end-of-the-day Reflection session. In between, choose from a variety of presentations covering the topic, all marked with the icon LCR. Immerse yourself in the topic, and collaborate with leaders and colleagues. Throughout the 2013–2014 Learn↔Reflect strand, participants should reflect on the questions listed below. At the end of the strand, during the Reflection session, they will engage in a discussion based on the questions.

1. What is number sense, and how can you promote the development of number sense in your students? How are fluency and understanding related in the context of number and operations?

2. How can instructional decisions facilitate the development of strategies that are meaningful and transferable for operations on all numbers?

3. How are equity and diversity promoted by developing conceptual understanding of number?

4. How can the Standards for Mathematical Practice support the development of number sense and computational fluency?

5. How are you thinking differently about your learning and teaching of number and operations as a result of participating in the Learn↔Reflect sessions?

New Teacher Strand NT

THURSDAY, APRIL 10 AND FRIDAY, APRIL 11

The New Teacher strand offers sessions and gallery workshops targeting the questions and concerns of new teachers and those training to become teachers. Presentations are grade-band specific and include topics from management and motivation, to engaging struggling students, to a celebration of those entering and just beginning their teaching careers. Learn, network with other new teachers, and get your questions answered. The strand targets early-career teachers and those working on certification; all are welcome.

Look for the icon NT for presentations within the strand. Start early with the New Teacher Kickoff (#255) on Thursday at 2:45 p.m. and finish with the New Teacher Celebration (#565) on Friday at 4:45 p.m. for more fun. Visit **www.nctm.org/newteacher/** for more information, or request to join **www.facebook.com/groups/nctmnewteachers**.

Social Justice Strand SJ

The Social Justice strand focuses on mathematics education in areas that are traditionally marginalized, underrepresented, or "mis"-understood. One goal of this strand is to show how to use mathematics to teach and learn about issues of social and economic justice. Sessions may also address the concept that the development of mathematical literacy is itself an incredibly important social justice issue.

Teaching Computational Fluency with Understanding Strand CF

The Teaching Computational Fluency With Understanding strand presentations will examine effective pedagogical strategies for teaching traditional algorithms and/or alternative strategies which promote a deep understanding of number and operations and assist students in being able to compute both accurately and efficiently. Look for the icon CF for Teaching Computational Fluency with Understanding presentations.

10-Minute Tasks Strand 10

The 10-Minute Tasks strand focuses on short tasks that are rich in mathematics learning opportunities and that help teachers diagnose and meet the needs of their students. In these sessions, you will have an opportunity to consider how to enact quality mathematics tasks to influence classroom discourse around the task, make the task accessible to all kids, and provide opportunities for formative assessment.

Program Information

Principles to Actions: Ensuring Mathematical Success for All PtA

Principles to Actions is the new publication from NCTM that outlines and describes the specific teaching practices that are essential for high-quality mathematics education for all students. Learn more from the authors, who are presenting conference sessions, about the publication's focus on teaching and learning, and how to engage students in mathematical thinking.

Teachers Leveraging Technology Strand LT

Sessions in the Teachers Leveraging Technology strand cover everything from creating your own online professional learning community (PLC) to using technology in your classes.

NCTM Committee Strand

NCTM committee presentations are identified by the icon .
For a list of all NCTM committees, please visit **www.nctm.org/**.

Equity Strand

The Equity strand features presentations given by the Benjamin Banneker Association, TODOS: Mathematics for ALL, and Women and Mathematics Education. Presentations are scheduled on Friday and Saturday.

Mathematical Association Presidents' Series

The Presidents' Series is a feature of the NCTM Annual Meeting program that highlights connections within the mathematical community at different levels. Presentations are scheduled throughout the conference.

New Members and First Timers' Orientation

New to NCTM, or a first-time attendee? Hear about maximizing your NCTM member experience and get takeaways full of classroom-ready activities with the New Members and First Timers' Orientation. Plus, the sessions will discuss the conference's format and help you make the most of your experience. Our attendees represent the United States, Canada, and many international locations.

Wednesday
Presentation #1
4:00 p.m.–4:30 p.m.
Great Hall B/C (Convention Center)

Thursday
Presentation #3
7:15 a.m.–7:45 a.m.
Grand Ballroom A (Hilton)

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) represent a common format in which the speaker relates his or her ideas to an audience. The speaker may use audiovisual equipment, technology, and handouts, and sessions may include audience participation. Rooms are set theatre style and vary in size.

Research Sessions (60 minutes) emphasize the connection between research and practice, presented in a common format in which the speaker relates his or her ideas to an audience. The speaker may use audiovisual equipment, technology, and handouts, and sessions may include audience participation. Rooms are set theatre style and vary in size.

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

Bursts (30 minutes) are concise presentations that focus on a specific topic or idea. The goal is information sharing, conveyed quickly and succinctly. Bursts are not appropriate for hands-on activities, group work, or lengthy topics.

Exhibitor Workshops (60 minutes) are set theatre style for at least 120 people. Exhibitors showcase their products and services away from the Exhibit Hall. Look for the icon EW indicating exhibitor workshops in the program book.

Grade Bands

To help you find appropriate presentations to attend, each presentation lists the presentation's target grade band audience:

- **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**—applicable to all grades and audiences

On-Site *Daily News*

Start each morning with the NCTM *Daily News*, which will include late-breaking news about the NCTM 2014 Annual Meeting & Exposition, as well as program changes and cancellations. The *Daily News* will be distributed in the lobby of the Ernest N. Morial Convention Center and available in the Hilton New Orleans Riverside.

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Wednesday

ideas & inspiration

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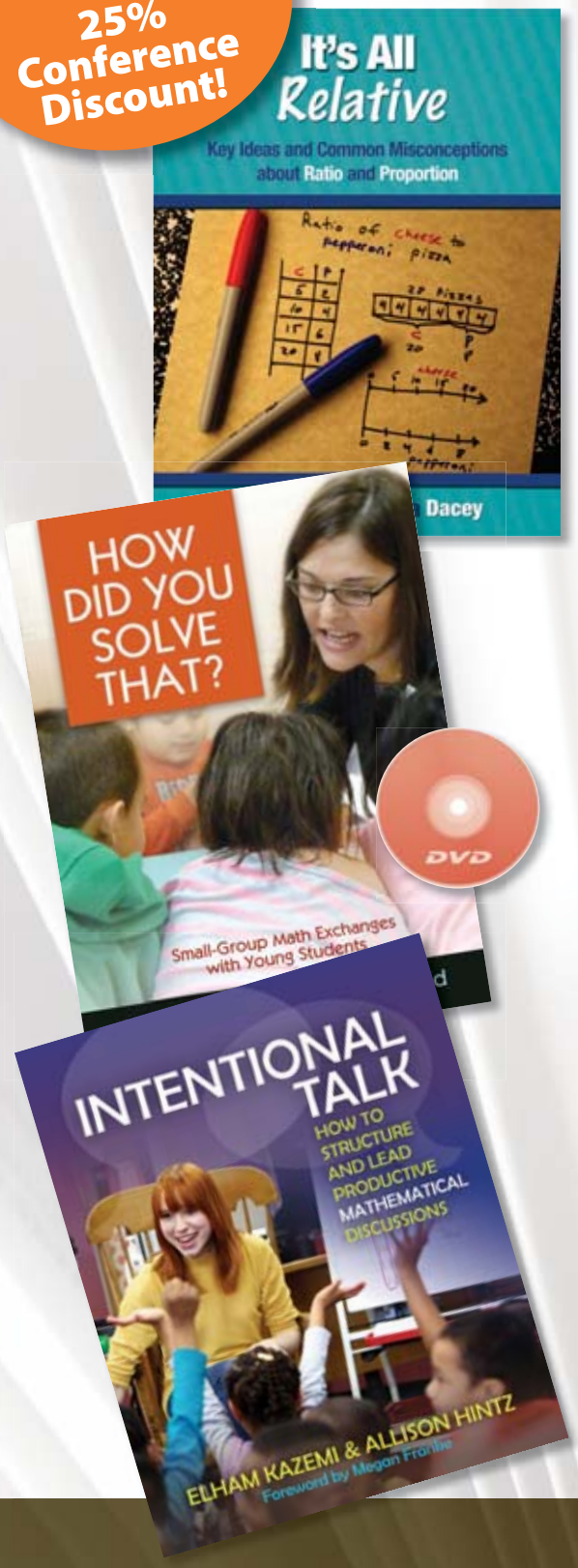

It's All Relative

Key Ideas and Common Misconceptions About Ratio and Proportion

Anne Collins & Linda Dacey

It's All Relative will help you provide students with the conceptual understanding of ratios and proportional thinking that is essential for solving real-world problems and achieving success in higher-level mathematics. Each of the thirty modules, which are aligned to specific Common Core State Standards, addresses specific mathematical practices and common misconceptions, features timely classroom examples, includes ready-to-use activities, and provides ideas for adapting activities to meet the needs of individual learners.

Grades 6–7 | 978-1-57110-982-8 | $18.00 flipchart

How Did You Solve That?

Small-Group Math Exchanges with Young Students

Kassia Omohundro Wedekind

Look into two classrooms as teachers Kassia Omohundro Wedekind, author of the popular book *Math Exchanges*, and Rachel Knieling facilitate small-group math meetings with their kindergarten and second-grade students and plan, teach, and reflect on these math conferences. *How Did You Solve That?* addresses issues such as assessing students' mathematical understandings, grouping students for math exchanges, encouraging student talk, choosing problems and numbers, and more.

Grades K–3 | 978-1-57110-983-5 | $150.00 DVD

Intentional Talk

How to Structure and Lead Productive Mathematical Discussions

Elham Kazemi and Allison Hintz; Foreword by Megan Franke

Not all mathematics discussions are alike. According to Elham Kazemi and Allison Hintz, the critical first step is to identify a discussion's goal and then understand how to structure and facilitate the conversation to meet that goal. Through detailed vignettes from both primary and upper elementary classrooms, the authors provide a window into what teachers are thinking and examine students' roles as both listeners and talkers. Planning templates help teachers apply the right structure to discussions in their own classrooms.

Grades K–5 | 978-1-57110-976-7 | $20.00 paper

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Highlights

New Members and First Timers' Orientation (Presentation 1)

Opening Session: The Joy of *x* (Presentation 2)

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Twitter

Want to stay informed? Follow us!
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#NCTMNOLA

Registration Hours

8:00 a.m.–7:00 p.m.

Member Showcase Hours

10:00 a.m.–7:00 p.m.

Bookstore Hours

10:00 a.m.–7:00 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.

Regional Caucuses for Delegates and Alternates

2:30 p.m.–4:30 p.m.
Ernest N. Morial Convention Center
Room: 225/226/227
(Excluding the Western Caucus)

Western Caucus
7:30 p.m.–9:00 p.m.
Ernest N. Morial Convention Center
Room: 228/229

CAUCUS	PRESIDERS
Affiliates-at-Large	Florence Glanfield, University of Alberta, Edmonton, Canada
Canadian	Maureen MacInnis, Charles P. Allen High School, Bedford, Nova Scotia
Central	Janet Herrelko, University of Dayton, Ohio David Ebert, Oregon High School, Wisconsin
Eastern	Shawn Towle, Falmouth Middle School, Maine Janie Zimmer, Research-Based Education, Reading, Pennsylvania
Southern	Cathy Shelton (Retired), W. T. Woodson High School, Fairfax, Virginia E. Jean Ware (Retired), Caddo Parish School District, Shreveport, Louisiana
Western	Denise Trakas, Washoe County School District, Reno, Nevada Nancy Terman, University of California Santa Barbara

Stop by the NCTM Member Showcase!

INSPIRING TEACHERS. ENGAGING STUDENTS. BUILDING THE FUTURE.

There are many reasons to visit the NCTM Member Showcase…

- We have **mathematics tools and resources to help** make your job easier
- **Activities and lessons**...we'll show you how to gain access to 1,000s
- Learn how to **get the most of your NCTM membership**…not a member, learn how to become one
- **Join or renew** your membership on site **and receive a free Boston T-shirt**

Located in the NCTM BuzzHub of the exhibit hall.
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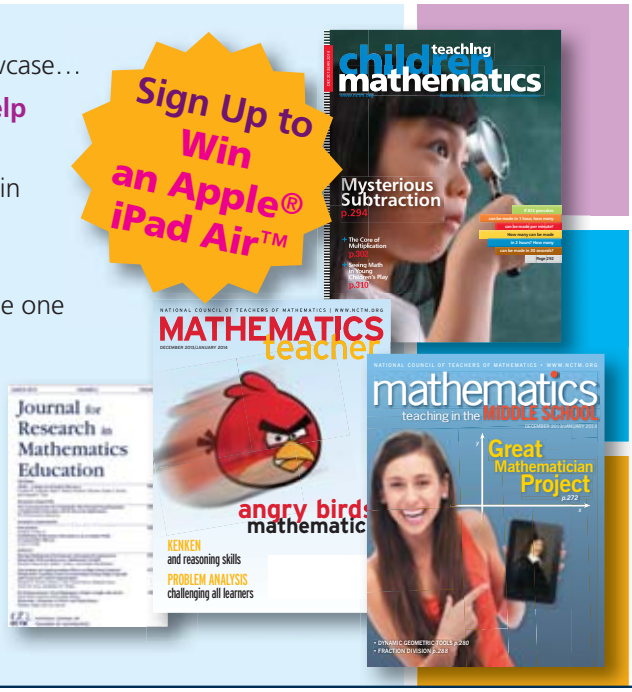

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(800) 235-7566 | WWW.NCTM.ORG

4:00 P.M.-4:30 P.M.

1

New Members and First Timers' Orientation

(General Interest) Session

New to NCTM? Join members of the NCTM Board of Directors to learn how to maximize your membership experience. From journals, online lessons, tools, and activities to networking and career-advancement opportunities, discover all that NCTM has to offer you. First-time attendees, learn how to make the most of your time at the conference.

Board of Directors, National Council of Teachers of Mathematics
National Council of Teachers of Mathematics, Reston, Virginia

GREAT HALL B/C (CONVENTION CENTER)

5:30 P.M.–7:00 P.M.

2

The Joy of *x*

Opening Session by Steven Strogatz

Remarks by NCTM President Linda M. Gojak

In the spring of 2010, Steven Strogatz wrote a 15-part series on the elements of math for the *New York Times*. To his surprise, each piece climbed the most emailed list and elicited hundreds of appreciative comments. In this talk he'll describe his adventures in bringing math to the masses, including what worked … and what didn't.

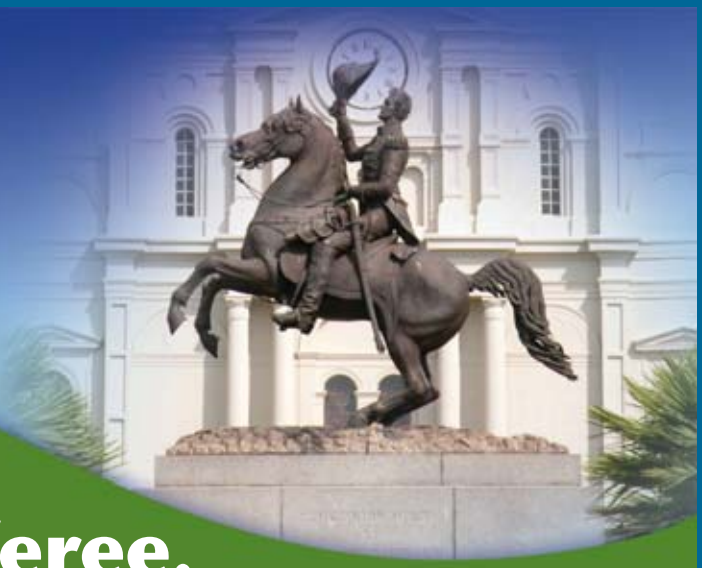
Steven Strogatz is the Jacob Gould Schurman Professor of Applied Mathematics at Cornell University. His books include *Sync: The Emerging Science of Spontaneous Order, The Calculus of Friendship*, and *The Joy of x*. His work has been featured in *Nature* magazine, the *New York Times*, *U.S. News and World Report*, *Discover*, and *Newsweek*, as well as on National Public Radio, CBS News, and BBC Radio. The awards he has received for his research, teaching, and public service include a Presidential Young Investigator Award from the National Science Foundation; MIT's E.M. Baker Award for Excellence in Undergraduate Teaching; and the Communications Award from the Joint Policy Board for Mathematics, a lifetime achievement award for the communication of mathematics to the general public.

Steven Strogatz
Cornell University, Ithaca, New York

GREAT HALL (CONVENTION CENTER)

2014 NCTM ANNUAL MEETING & EXPOSITION

April 9–12 • New Orleans



Get Published!
Be a Journal Referee.
Avoid Common Writing Pitfalls!

Find out how at the **BuzzHub Networking Lounge** located in the Exhibit Hall.

The journal editors from *Teaching Children Mathematics*, *Mathematics Teaching in the Middle School*, and *Mathematics Teacher* will be giving a series of mini-sessions to help you write or referee for one of NCTM's school journals. Inside of 15 minutes, you'll discover how to submit your ideas for publication, volunteer as a referee, or polish an existing manuscript. The editors will explain the peer-review process, answer your questions, point you in the right direction, and allay any fears you may have about getting started. All for a price that can't be beat—free!

Here's what's going on:

Get Published

Discover how simple it is to turn your ideas into articles.

Presented by Sara-Lynn Gopalkrishna, MTMS editor

Thursday, April 10:
10:30–10:45 a.m. and
1:30–1:45 p.m.

Friday, April 11:
11:00–11:15 a.m. and
2:00–2:15 p.m.

Saturday, April 12:
10:30–10:45 a.m.

Be a Journal Referee

Find out how critiquing manuscripts can help your career.

Presented by Tara Slesar, MT editor

Thursday, April 10:
11:00–11:15 a.m. and
2:00–2:15 p.m.

Friday, April 11:
10:30–10:45 a.m. and
1:30–1:45 p.m.

Saturday, April 12:
11:00–11:15 a.m.

Avoid Writing Pitfalls

Learn hints on steering clear of those pesky manuscript potholes.

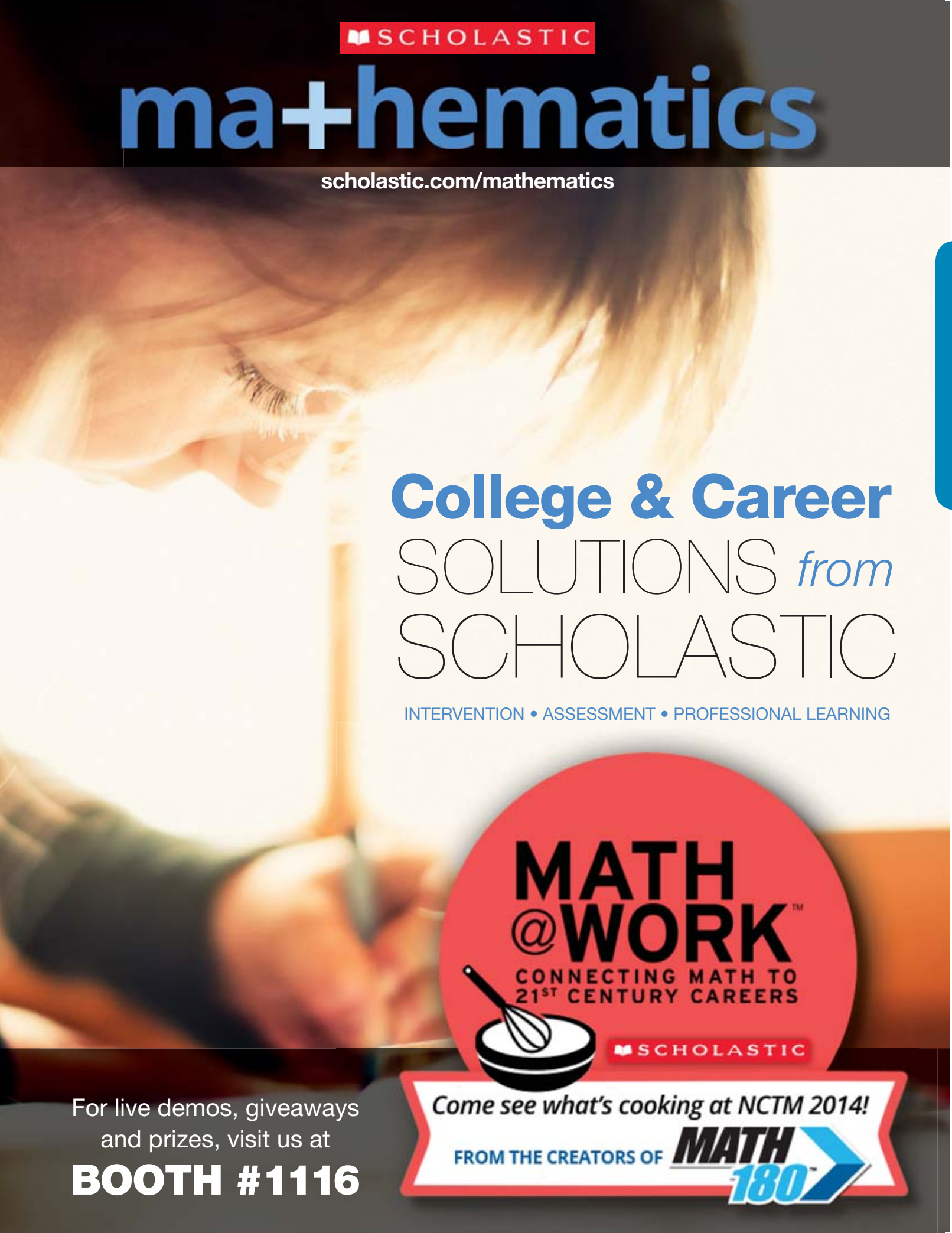
Presented by Beth Skipper, TCM editor

Thursday, April 10:
1:00–1:15 p.m. and
2:30–2:45 p.m.

Friday, April 11:
1:00–1:15 p.m. and
2:30–2:45 p.m.

Saturday, April 12:
10:00–10:15 a.m.

MATHEMATICS teacher | mathematics teaching in the MIDDLE SCHOOL | teaching children mathematics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MARILYN BURNS

THURSDAY
APRIL 10TH • 2-3 pm
GREAT HALL B/C

DAILY GIVEAWAY!

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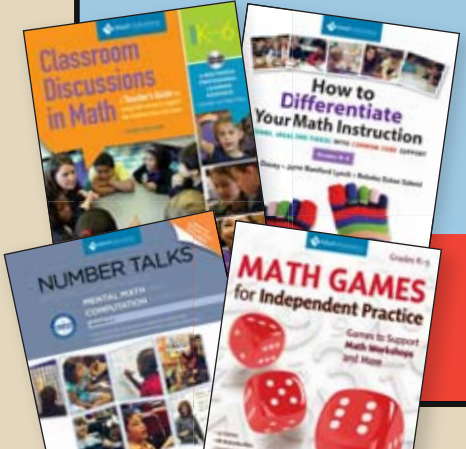
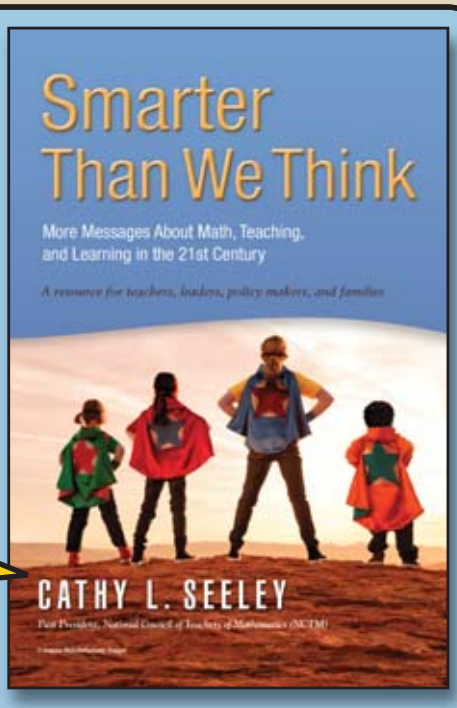


Author Meet & Greet
Featuring Cathy Seeley!
APRIL 10TH at 3 pm



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The BuzzHub

Network at the BuzzHub!
See page 162 for more details.

Facebook

Check out the problem of the day!
www.nctm.org/facebook

Twitter

Want to stay informed? Follow us!
www.twitter.com/nctm
#NCTMNOLA

Registration Hours

7:00 a.m.–4:00 p.m.

Exhibit and BuzzHub Hours

8:00 a.m.–5:00 p.m.

Bookstore Hours

8:00 a.m.–5:00 p.m.

Fire Codes

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7:15 A.M.–7:45 A.M.

3
New Members and First Timers' Orientation

(General Interest) Session

New to NCTM? Join members of the NCTM Board of Directors to learn how to maximize your membership experience. From journals, online lessons, tools, and activities to networking and career-advancement opportunities, discover all that NCTM has to offer you. First-time attendees, learn how to make the most of your time at the conference.

NCTM Board of Directors
National Council of Teachers of Mathematics, Reston, Virginia

GRAND BALLROOM A (HILTON)

7:30 A.M.–9:00 A.M.

4
Sixty-Fifth Annual Delegate Assembly

(General Interest) Session

This session is a forum for delegates and designated leaders of NCTM Affiliates to make recommendations to the NCTM Board of Directors concerning activities and policies of NCTM and mathematics education.

NCTM Affiliate Services Committee
National Council of Teachers of Mathematics, Reston, Virginia

JEFFERSON BALLROOM (HILTON)

8:00 A.M.–9:00 A.M.

5
"Apps"-o-lutely

(General Interest) Session

There are many lists suggesting the "top ten apps for educators." However, none of these lists include what procedure or criteria, if any, was used to determine their selection. This workshop will present the systematic approach used for STEM app review, including a vast topic list and connections to the Next Generation Science Standards (NGSS) and the Common Core State Standards for Mathematics (CCSSM).

Dorothy Varygiannes
Monmouth University, West Long Branch, New Jersey
Judith Bazler
Monmouth University, West Long Branch, New Jersey
Letty Graybill
Monmouth University, West Long Branch, New Jersey

ROSEDOWN (HILTON)

6
Argumentation in Mathematics: The Case of English Language Learners

(General Interest) Session

This presentation draws on multiple examples of Latina/o students engaging in argumentation in mathematics to highlight some of the features that promote this engagement. These features underscore the importance of teacher moves that build on the students' linguistic and cultural backgrounds.

Marta Civil
University of North Carolina at Chapel Hill

225/226/227 (CONVENTION CENTER)

7
Doctorates in Mathematics Education: Jobs Available in Higher Education Institutions

(General Interest) Session

Speakers will discuss the shortage of doctorates in mathematics education and report results from research on job opportunities in institutions of higher education. Suggestions about choosing a doctoral program, and the challenges of K–12 classroom teachers becoming graduate students and transitioning into a career in higher education, will be discussed.

Robert Reys
University of Missouri, Columbia
Bob Glasgow
Southwest Baptist University, Bolivar, Missouri
Christa Jackson
University of Kentucky, Lexington

243 (CONVENTION CENTER)

8
Unsilence Students' Voices

(General Interest) Session

Picture a classroom. The teacher presents a problem and initiates discussion. Some students look attentive, but are quiet. A few students have hands raised, posed to talk. At least one or two students seem disengaged. Every classroom has silenced voices. Why? Activities and handouts will be shared to help meet the CCSSM Practices, particularly #1 and #3.

Suzanne Alejandre
The Math Forum @ Drexel, Philadelphia, Pennsylvania

GRAND BALLROOM A (HILTON)

8:00 A.M.–9:00 A.M.

9
Smarter Than We Think

(General Interest) Session

Who are the smart kids, and how do we know? Today we know more than ever about learning and teaching mathematics and about measuring what students know. Let's explore what we can do to help every student learn the kind of deep, focused, and connected mathematical knowledge, thinking, and reasoning called for in today's standards and reflected in new state and national tests.

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

GREAT HALL B/C (CONVENTION CENTER)

10
The Mathematical Practices of Finding Structure and Making Connections

(General Interest) Session

Often mathematics met in different contexts is the "same," but this connection is not seen. I will engage participants with many such examples across topics and at all grade levels. Such connections express the unity of mathematics, and leverage mathematical understanding by holding mathematical diversity within unifying structures.

Hyman Bass
University of Michigan, Ann Arbor

R03 (CONVENTION CENTER)

11
Inside TeachFest: How Technology Supports LearnZillion's Professional Learning Communities

(General Interest) Session

Come learn how LearnZillion develops Common Core teacher-leaders dedicated to "scaling their impact." Teachers use technology to engage in supportive Professional Learning Communities that result in high quality Common Core math video lessons and tasks.

Eric D. Westendorf
LearnZillion, Washington, D.C.

GRAND SALON 3–6 (HILTON)

12
The Secret to Great Computational Skills

(General Interest) Session

Is there a systematic approach to teaching multiplication, division, fractions, place value, and even measurement that improves both student understanding and computational speed? Join us and learn how a single strategy can be the universal key to developing great computational skills across the curriculum and for every child.

Greg Tang
Staff Development Educators, Peterborough, New Hampshire

GREAT HALL A/D (CONVENTION CENTER)

13
Storytelling and Guided Math: Using Narrative to Strengthen Problem Solving

(Pre-K–2) Session

Come learn about the important role of narrative and talk in building mathematical communities that help young mathematicians develop a strong understanding of problem solving. Videos of guided math will deepen participants' understanding of how to implement these informative math sessions in their own classrooms.

Kassia J. Omohundro Wedekind
Fairfax County Public Schools, Falls Church, Virginia

230 (CONVENTION CENTER)

15
Math > Computation: Teaching Algorithms for Deeper Understanding

(Pre-K–5) Session

Arithmetic algorithms can be taught for more than precision. By seeing how algorithms work, students can deepen understanding of place value and develop number sense—knowledge that remains vital even when calculators perform computations.

Frances L. Stern
Mathematics Education Consultant, New York, New York

245 (CONVENTION CENTER)

8:00 A.M.–9:00 A.M.

16
Modeling with Manipulatives: A Closer Look at K–5 Mathematical Proficiency

(Pre-K–5) Session

Manipulatives have been a mainstay of elementary math instruction, but the adoption of the Common Core State Standards Mathematical Practices has generated a new discussion about ways to maximize their effectiveness. Watch selected videotapes of students developing a deeper understanding of number sense by constructing and explaining their mathematical models.

Anne Nesbitt
Westport Public Schools, Westport, Connecticut
Allison Moran
Westport Public Schools, Westport, Connecticut

ELMWOOD (HILTON)

17
The RtI Mastery Learning Loop for CCSS Teaching

(Pre-K–5) Session

The Common Core State Standards (CCSS) put students on a trajectory towards success in mathematizing their world. But children must have timely intervention if they are to be ready and continue to learn at the current grade level. We will examine a mastery learning loop that builds interventions for Tier 2 readiness standards on effective teaching of Tier 1 core standards.

Robyn Seifert
Ottawa Area Intermediate School District, Holland, Michigan

GRAND SALON 13–16 (HILTON)

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10 10-Minute Tasks · EW Exhibitor Workshop · L↔R Learn↔Reflect · NCTM Committee · NT New Teacher · PtA Principles to Actions · SJ Social Justice · CF Teaching Computational Fluency

8:00 A.M.–9:00 A.M.

18
Using Rich Problems and Mathematical Practices to Develop Number Sense

(3–5) Session

Inspired by highly successful strategies in Tufts University's Early Algebra Project, this session details how teachers can improve student understanding of number sense. Come engage in unit plans that align with the Common Core's Standards for Mathematical Practices by implementing inquiry-based problem solving. Number sense will be developed via rich algebraic problems.

Randy A. Yates
Shaker Heights City Schools, Ohio
Sheri Jarvi
Shaker Heights City Schools, Ohio

214 (CONVENTION CENTER)

19
Analyzing Student Mathematics Assessment

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

We investigate what it means to assess math on multiple levels: computational, methodological, and conceptual. With the Conceptual Understanding Weighting System (CUWS) framework, we analyze assessment questions in fifth-grade mathematics textbooks. We found and will describe differences between the assessment items in each of the textbooks.

Emily Elizabeth Mazzoni
Rockhurst University, Kansas City, Missouri
Andrea Hart
Rockhurst University, Kansas City, Missouri
Sarah Hicks
Rockhurst University, Kansas City, Missouri

223 (CONVENTION CENTER)

Participate in the **Learn↔Reflect Strand** on Thursday

20
Developing Perseverance, Critical Thinking, and Communication Using Nonstandard Problems

(6–8) Session

Explore how using nonstandard problems in a structured format can develop the skills described in the Common Core's Mathematical Practices as well as other important learning traits such as perseverance, accountable math talk, critical thinking, and the ability to identify and connect to the underlying big ideas.

Lisa T. Pilgrim
Halton District School Board, Burlington, Ontario, Canada
Bridget V. Goodwin
Halton District School Board, Burlington, Ontario, Canada

R07 (CONVENTION CENTER)

21
Understanding Work and Rate Problems

(6–8) Session

Work and rate problems confound students. We will look at multiple approaches to solve these problems, along with ways to encourage students to make sense of the problem that build on their own intuitive ideas. We will analyze common errors, and we will also explore connections among work problems, rate problems, and ordinary average problems.

Matthew G. Jones
California State University, Dominguez Hills, Carson

R05 (CONVENTION CENTER)

22
Because of Math: Why Storytelling Makes Math More Exciting

(6–12) Session

Have you ever wondered about zero? Or what's important about Fermat's last theorem? Why do we care about rational numbers? Entice your students with stories that capture the excitement of mathematics and connect these stories to concepts they need to know. Participants will leave with several stories as well as sources to help in creating their own.

Kira Jeanne Donnelly
Great River School, St. Paul, Minnesota

GRAND BALLROOM C (HILTON)

8:00 A.M.–9:00 A.M.

23
Bringing Statistics to Life with Census at School

(6–12) Session

Looking for activities to enhance your math or statistics class? Try using the international classroom project Census at School! Get students involved in asking and answering statistical questions by collecting data, entering data into a database, and analyzing random samples of data entered by students from around the world. Sources of classroom-ready activities will be provided.

Stephen J. Miller
Winchester Thurston School, Pittsburgh, Pennsylvania

206 (CONVENTION CENTER)

24
Math Anxiety and Girls: Is It All in Her Head?

(6–12) Session

New research on the biopsychological response to stress provides an explanation for why test and math anxiety are more often reported by girls. Understanding the process is key for teachers to help their students. Specific strategies will be presented to help teachers and students at all levels deal with this issue.

Abigail Norfleet James
University of Virginia, Charlottesville

GRAND SALON 9–12 (HILTON)

25
Using Dynamic Software for All the Right Reasons

(6–12) Session

In this session, GeoGebra applications from geometry, transformations, functions (algebra to calculus), and data analysis will serve to illustrate the benefits of using dynamic computer applications. Discussion will focus on the use of GeoGebra to build interactive applets, as a teacher-productivity tool, and to model or demonstrate mathematics concepts.

Chuck Friesen
University of Nebraska–Lincoln

R09 (CONVENTION CENTER)

26
Do It Again!: Using Iteration and Sequences to Solve Equations

(9–12) Session

We will examine how the simple idea of doing something over and over again (iteration) can be used to find roots of equations with astonishing ease. This method can be used to introduce students to recursive sequences and the sequence mode on a graphing calculator. It can also provide students with practice at performing algebraic manipulations.

Laurie Bass
Author, Prentice Hall; Teacher, Ethical Culture Fieldston School, Bronx, New York

GRAND SALON 21–24 (HILTON)

27
"When Am I Ever Going to Use This Math?"

(9–12, Higher Education, Research) Session

AEGIS is a Research Experience for Teachers project supported by the National Science Foundation. Through signal and image processing applications, AEGIS engages students in real-world applications, connects math curriculum to technology, and uses MATLAB® to deepen understanding of math concepts per the Common Core standards.

Georgios C. Anagnostopoulos
Florida Institute of Technology, Melbourne
Susan Lee
Timber Creek High School, Orlando, Florida
J. Rebecca Dowell
Titusville High School, Florida

JASPERWOOD (HILTON)

29
Improve Student Understanding through Math Topic Study

(Preservice and In-Service) Session

Learn how a group of teachers gained a deeper understanding of elementary math concepts by completing a curriculum topic study. Research of common student misconceptions, research-based instructional strategies, and other methods can be used to increase student understanding of core math concepts. Discover how topic study focused on specific areas of math can be an effective Project Learning Tree (PLT) or preservice activity.

Jennifer Pothast
Wartburg College, Waverly, Iowa

235/236 (CONVENTION CENTER)

8:00 A.M.–9:00 A.M.

29.1 EW
Improving Math Intervention with Individualized Learning Paths and Analytics

(General Interest) Exhibitor Workshop

Personal Math Trainer offers a new way to deliver personalized learning for today's students. Explore the benefits of adaptive learning for math intervention and how personalized course trajectories can improve learning outcomes. Discussion will focus on best practices for the effective use of teacher reporting to address student needs.

Houghton Mifflin Harcourt
Austin, Texas

208 (CONVENTION CENTER)

29.2 EW
Singapore Math: Common Core Connections

(General Interest) Exhibitor Workshop

Problem solving is central to Singapore's mathematics education. The first Common Core Standard for Mathematical Practice states: "Make sense of problems and persevere in solving them." This talk addresses connections between the Common Core and Singapore Math, with focus on the standards for mathematical practice and numbers and operations.

Marshall Cavendish
Worcester, Massachusetts

FOUNTAIN ROOM (HILTON)

29.3 EW
enVisionMATH Common Core: Realize Results

(PreK–5) Exhibitor Workshop

Experience how enVisionMATH Common Core, Realize Edition helps students develop conceptual understanding, procedural skill and fluency, and application in the new Learning Management System, PearsonRealize.

Pearson
Upper Saddle River, New Jersey

219 (CONVENTION CENTER)

29.4 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 grades 6–algebra 2 (option for high school Integrated I–III.) Receive free copies of CPM's entire Core Connections series.

CPM Educational Program
Sacramento, California

218 (CONVENTION CENTER)

29.5 EW
A Calculus eText from Hogwarts?

(9–12) Exhibitor Workshop

Just as textbooks used by Harry Potter and his friends teemed with moving images, a new Briggs/Cochran/Schulz AP Calculus eText comes to life with hundreds of Interactive Figures. How will this new text change how students learn? And what can this new type of text mean for you as a teacher? We'll explore the possibilities together with Eric Schulz!

Pearson
Upper Saddle River, New Jersey

209 (CONVENTION CENTER)

30
Core Values: Connecting the Number Core and the Common Core

(Pre-K–2) Gallery Workshop

What is the Number Core? How does it relate to the Common Core? Learn how the Common Core State Standards for Mathematics support the development of quantity, counting, and cardinality. Explore activities that provide children with opportunities to understand numbers and explore the progression of early number concepts by engaging in K–2 mathematical tasks.

Pamela R. Williams
Jefferson County Board of Education, Birmingham, Alabama
Shelia Patterson
Alabama Department of Education, Montgomery

210 (CONVENTION CENTER)

8:00 A.M.–9:15 A.M.

31
Games That Make You Think

(Pre-K–2) Gallery Workshop

Play newly developed games that target CCSSM number sense concepts and computational skills. Help students develop powerful mental math strategies and master skills while they play fun games with built-in differentiation. Use discussion questions to engage participants in the CCSS Mathematical Practices. Walk away with ideas and game pieces.

Ann McMahon
Teacher to Teacher, Lake Oswego, Oregon
Kathleen Barta
Teacher to Teacher, Lake Oswego, Oregon
Gail E. Gerdemann
Oregon State University, Albany

238/239 (CONVENTION CENTER)

32
Number Talks: Developing Fluency through Conceptual Understanding and Mathematical Practices

(Pre-K–2) Gallery Workshop

Number Talks are a powerful tool fundamental in developing students computational fluencies with conceptual understanding. Ten frames, dot images, and number lines add rigor to any curriculum to support the Common Core State Standards for Mathematics. Number Talks offer the opportunity to meet each child where he or she is developmentally and support the Mathematical Practices in the classroom.

Kristin N. Gray
Cape Henlopen School District, Lewes, Delaware
Nancy L. Thornburg
Cape Henlopen School District, Lewes, Delaware

211/212 (CONVENTION CENTER)

Pick up a copy of the on-site *Daily News* for up-to-date conference information

33
Problem Solving, Equity, and the Common Core

(Pre-K–2) Gallery Workshop

Participants will analyze video of children engaged in problem solving to identify the implementation of standards for mathematical practices that support equitable classroom participation. Participants can identify structures to be implemented in their classroom to provide greater access for students from diverse backgrounds and ability groups.

Mary Q. Foote
Queens College, City University of New York, New York
Anita A. Wager
University of Wisconsin–Madison

OAK ALLEY (HILTON)

34
Routines for Building Number Sense

(Pre-K–2) Gallery Workshop

Meet the Common Core State Standards for Mathematics through quick, engaging, daily number routines and workstation activities using 5 and 10 frames, dot cards, Rekenreks, and other DIY materials for composing and decomposing numbers. Session includes materials that can be used in your classroom tomorrow!

Donna Boucher
Katy Independent School District, Texas

244 (CONVENTION CENTER)

35
Explore Graphing with Sir Cumference and Lady Di of Ameter

(Pre-K–5) Gallery Workshop

Come join us as we create a variety of graphs using the children's literature book *Sir Cumference and the Off-the-Charts Dessert.* Participants will create graphs such as picture graphs, bar graphs, line plots, and pie charts. The book's author, Cindy Neuschwander, will share readings from it, and handouts will be provided.

Betty B. Long
Appalachian State University, Boone, North Carolina
Cindy Neuschwander
Dublin Unified School District, California
Deborah A. Crocker
Appalachian State University, Boone, North Carolina

221/222 (CONVENTION CENTER)

8:00 A.M.–9:15 A.M.

36
Fonts and Symmetry

(3–5) Gallery Workshop

Using fonts as a context, we will analyze symmetry of figures. Different letters and numbers will be measured, and participants will describe items that possess vertical, horizontal, and rotational symmetry. Our discussion and activity will focus on the mathematics of fonts and the presence and absence of symmetry in their design.

Ryan Andrew Nivens
East Tennessee State University, Johnson City

207 (CONVENTION CENTER)

37
Measure Up! New Ways of Thinking about Measurement and Geometry

(3–5) Gallery Workshop

Engage in new methods and strategies for length, area, volume, and geometry. As they explore and trade, students in grades 2–6 will be able to understand and remember the value of each unit. They will solve a variety of real-world problems involving the application and conversions of units. All related materials will be available for download.

Mary Kay Bacallao
Mercer University, Macon, Georgia

GRAND BALLROOM B (HILTON)

38
Engaging Teachers in Statistics and Probability through STEM

(3–8) Gallery Workshop

Engage in math and science interactive activities for grade 3–8 teachers. Participate in an analysis of tasks that connect the Common Core Standards for Mathematical Practice and the Next Generation Science Practices through data analysis, number sense, and life science.

Jane M. Metty
Mercer University, McDonough, Georgia
Clemmie B. Whatley
Mercer University, Atlanta, Georgia

R04 (CONVENTION CENTER)

39
Unpacking Geometry Problems from Boxes You Make

(3–8) Gallery Workshop

Participants will transform used greeting cards into boxes as a method for delivering an in-depth understanding of the relationships among perimeter, area, and volume. Give your students better understanding of geometry terms and the nuances of definitions involved with polygons, especially quadrilaterals. Ratios and proportions will also be explored.

Nicholas J. Restivo
Retired, Mineola Union Free School District, New York

R06 (CONVENTION CENTER)

40
From Paper Constructions to Technology: Investigating Parallel Lines and Angles

(6–8) Gallery Workshop

This workshop will feature explorations of angles formed in parallel lines utilizing paper constructions and technology. After we dive into paper-construction methods for investigating the properties of angles, we will transition into GeoGebra and develop visuals to show how and why this process works.

Bhesh R. Mainali
University of Central Florida, Orlando
Janet B. Andreasen
University of Central Florida, Orlando
Edward M. Knote
University of Central Florida, Orlando

240/241 (CONVENTION CENTER)

41
Make Real Connections between Proportional Reasoning and Algebraic Thinking

(6–8) Gallery Workshop

Understanding multiplicative relationships and reasoning proportionally is essential to students' success in algebra. Participants will engage in hands-on activities designed to develop proportional reasoning at a concrete level and make explicit connections to algebraic thinking. TI-Nspire technology will be used to explore these connections.

Gloria R. Beswick
Partnership Institute for Mathematics and Science Education Reform (PIMSER), Louisville, Kentucky

VERSAILLES (HILTON)

8:00 A.M.–9:15 A.M.

42
Practice Makes Better, but Another Boring Worksheet? No Way!

(6–8) Gallery Workshop

We all know that students need to practice math skills in order to get better at using them. However, practice does not need to be just one more boring worksheet or page out of a book. Join us in some classroom-tested activities where students enjoy practicing essential skills. Be prepared to get up and move, work with others, and play a game or two.

Sally Wood
Estacada Junior High, Oregon
Elizabeth Warren
Estacada Junior High, Oregon

MAGNOLIA (HILTON)

42.1
ScafFOLDing Interactive Student Notebooks for Math Literacy

(6–12) Gallery Workshop

Recharge your students' notebooks and turn on the motivation factor via 3-D graphic organizers. Discover how to scafFOLD their math journals into dimensional, individualized, and brain-smart tools. Depart with a mini-composition book filled with immediately usable ideas sure to foster math literacy—even in your most reluctant learners.

Jami Humphrey
Highlands College of Montana Tech, Butte
Nancy Wisker
Dinah Zike Academy, Comfort, Texas

NAPOLEON BALLROOM (HILTON)

2015 Annual Meeting & Exposition proposal deadline is May 1, 2014. Go to www.nctm.org/speak to submit your proposal!

43
Algebraic Thinking, Modeling, and the Common Core

(6–12) Gallery Workshop

Come see how to use manipulatives, motion detectors, TI-Nspire handhelds, Internet resources, software, and TI-Navigator to investigate patterns and relationships that lead to understanding of algebraic concepts. We will show ways to engage all learners by using manipulatives and technology for instruction and assessment.

Ruth Casey
Teachers Teaching with Technology, Frankfort, Kentucky
Margaret A. Bambrick
Volusia County Schools, Orange City, Florida

R08 (CONVENTION CENTER)

44
Creating a Classroom of Collaborative Problem Solving and Persistence

(6–12) Gallery Workshop

How do I get my students to collaborate? To persist in problem solving? To justify their arguments and critique the reasoning of others? Come participate in this interactive workshop that will showcase specific, classroom-ready strategies that can help your classroom become a place of inquiry, discussion, and rich mathematical thinking.

Eyal Wallenberg
Urban Assembly School for Law and Justice, Brooklyn, New York
Melanie Smith
Urban Assembly School for Law and Justice, Brooklyn, New York
David Baiz
Global Technology Preparatory Middle School, New York, New York

GRAND SALON 4–7–10 (HILTON)

45
Further beyond Sudoku: Using Logic Puzzles to Develop Mathematical Reasoning

(6–12) Gallery Workshop

Logic puzzles are an engaging and accessible way to introduce students to deductive reasoning. Participants will break down the process of proof writing, connect the rules of logic puzzles to axiomatic proof systems, make conjectures, write "because statements," and develop their ideas into simple proofs, modeling how to use these ideas with students.

Breedeen Murray
The Bay School of San Francisco, California

203/204/205 (CONVENTION CENTER)

8:00 A.M.–9:15 A.M.

46
How High Can You Go? Increasing Cognitive Demand of Mathematics

(6–12) Gallery Workshop

Want to expand your knowledge of cognitive demand in mathematics? Learn how increasing the demand of tasks yields a stronger understanding of mathematics for students. Participants will evaluate high- and low-level tasks at varied levels and remodel existing tasks to increase students' depth of knowledge. Walk away with classroom-ready tasks!

Kate Wolling
Fairfax County Public Schools, Fairfax, Virginia

GRAND BALLROOM D (HILTON)

47 SJ
Looking beyond Skills: Supporting Students Who Struggle

(6–12) Gallery Workshop

The use of skill-based assessments often does not give enough information to determine what instruction and content students need in order to move forward. This session will provide examples of conceptual and skill-based assessments for use in middle and secondary classrooms with a focus on interpreting students' needs from their responses.

Anne Foegen
Iowa State University, Ames
Barbara J. Dougherty
University of Missouri, Columbia

215/216 (CONVENTION CENTER)

48
UbD²: Understanding by Desmos Drawing

(6–12) Gallery Workshop

UbD² combines Understanding by Design with Desmos, an online graphing calculator. Concepts are explored through mathematically enriched drawing that embraces Common Core standards. As a result, students are motivated to learn the mathematics and mathematically draw their understanding. The proof is in the picture!

Luke T. Walsh
Catawba Valley Community College, Hickory, North Carolina

R02 (CONVENTION CENTER)

49
You Want Me to Factor Every Quadratic? Get Real!

(9–12) Gallery Workshop

In this session, participants will explore how choosing which form of a quadratic equation to use depends on what you want to know. Having students choose from the vertex, general, and factored form of quadratic equations helps develop the ways of thinking inherent in the Common Core's Mathematical Practices.

Eric Kamischke
Michigan Technological University, Houghton
Ellen Kamischke
Michigan Technological University, Houghton

228/229 (CONVENTION CENTER)

50
Be the Square, Become a Parallelogram: Enacting Linear Transformations

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

This session will explore linear transformations. Participants will be actively engaged as human vertices in enacting transformations and exploring their properties using materials developed for geometry courses for preservice and in-service teachers. Come be a square!

Karen Graham
Board of Directors, National Council of Teachers of Mathematics; University of New Hampshire, Durham
Neil J. Portnoy
University of New Hampshire, Durham

GRAND SALON 15–18 (HILTON)

51
What's Your Domain? Get the Facts!

(Preservice and In-Service) Gallery Workshop

Getting a handle on number theory takes time and effort. Participants in this session learn how Montana teachers discovered unexpected relationships among the greatest common factor, least common multiple, and basic facts. Using NCTM articles and Illuminations, this hands-on session explores a variety of models including number lines, area models, and an interactive game.

Georgia Cobbs
University of Montana, Missoula
Lisa Scott
Math Education Consulting, Billings, Montana
Brian Lindaman
California State University, Chico

217 (CONVENTION CENTER)

9:30 A.M.–10:30 A.M.

52
Assessing Understanding and Advancing Rigorous Thinking of the Common Core through Questioning

(General Interest) Session

To create an environment in which students explain their reasoning (Standard for Mathematical Practice #2), and construct arguments (#3), teachers must ask questions that prompt explanations and push thinking forward, without making assumptions or feeding answers. Learn how questioning can formatively assess content and practices, as well as push for rigor for all students.

Laurie B. Speranzo
Institute for Learning, University of Pittsburgh, Pennsylvania
Sandra Campo
Institute for Learning, University of Pittsburgh, Pennsylvania

GRAND SALON 9–12 (HILTON)

53 SJ
The Mathematics Education of Black Children: Sixty Years Post-Brown

(General Interest) Session

This presentation examines the mathematics education of black students since the 1954 Brown v. Board of Education decision. Additionally, a counternarrative that portraits the schooling and mathematics experiences of a four-generation African American family will be shared.

Jacqueline Leonard
University of Wyoming, Laramie

R05 (CONVENTION CENTER)

54
"Key Words Help," "Inquiry Won't Work," and Other Myths

(General Interest) Session

Students with special needs are often taught through key words and direct instruction exclusively. Learn why a student with special needs says, "It took a stroke and a coma but now I like math!" and how key words and direct instruction were successfully replaced with teaching for understanding and inquiry in an inclusive environment.

Alexis P. Dixon
Student, Oviedo, Florida
Juli K. Dixon
University of Central Florida, Orlando

GREAT HALL B/C (CONVENTION CENTER)

55 LcR
Number Stories: Then and Now

(General Interest) Session

In 1919, NCTM published David Eugene Smith's *Number Stories of Long Ago*, a classic in mathematics education. The Common Core State Standards for numbers were published in 2010. There are connecting threads over the 91 years. If Smith wrote his book in 2024 and called it *Number Stories of Common Core*, what might we find in it? Come, reflect, and learn.

Johnny Lott
Past President, National Council of Teachers of Mathematics; Retired, University of Montana, Missoula

225/226/227 (CONVENTION CENTER)

56 PtA

Principles to Actions: What's Exciting about NCTM's New Blueprint?

(General Interest) Session

This introduction to NCTM's call to action will describe the context, purpose and hopes for this important, new document. Starting with equity and learning, we'll move to the powerful eight practices of effective teaching, and make the case for how curriculum, tools and technology, assessment and professionalism are the essential systemic supports.

Steve Leinwand is a principal research analyst at the American Institutes for Research (AIR) in Washington, D.C. An author of articles, books, and several mathematics textbooks, Leinwand has overseen the development of the algebra assessment for the ongoing High School Longitudinal Study, has served on the Mathematical Sciences Education Board during the development and publication of Everybody Counts, and has been president of the National Council of Supervisors of Mathematics and a member of the NCTM Board of Directors.

Steven Leinwand
American Insitutes for Research, Washington, D.C.

GREAT HALL A/D (CONVENTION CENTER)

9:30 A.M.–10:30 A.M.

57
Puzzling It Out: Teaching Inductive Reasoning

(General Interest) Session

We will work with Japanese-language independent logic puzzles to determine the goal and the rules for each type. This activity demonstrates ways to teach inductive reasoning strategies and the importance of looking at multiple examples before generalizing. Participants will explore brand-new puzzles in this interactive problem-solving session.

Jeffrey J. Wanko
School of Education, Health, and Society, Oxford, Ohio

JEFFERSON BALLROOM (HILTON)

58
Teaching Geometric Reasoning and Sense Making in the Elementary Grades

(General Interest) Session

NCTM has commissioned a series of three books (pre-K–2, 3–5, and 6–8) that address the Council's emphasis on reasoning and sense making while simultaneously supporting implementation of the Common Core Standards for Mathematical Practice. As editor and author, I will discuss the chapters on geometric reasoning, illustrating principles, and example activities.

Michael T. Battista
The Ohio State University, Columbus

GRAND SALON 3–6 (HILTON)

59
Three Principles of Effective Mathematics Instruction

(General Interest) Session

President's Series presentation

Session participants will learn about three principles of effective mathematics instruction and strategies for designing and implementing mathematics lessons using these principles. The session includes interactive discussions guided by classroom video clips, student work examples, textbook tasks, and research findings.

Fran Arbaugh
Pennsylvania State University, University Park

ELMWOOD (HILTON)

60
High-Quality Mathematics Discourse for All Students: Strategies and Moves

(Pre-K–2) Session

Participants will engage in strategies and discourse moves that can be used immediately in the K–2 classroom. These strategies and moves were developed in Project AIM (All Included in Mathematics) to prompt students to construct viable arguments and critique the reasoning of others as recommended in the Common Core State Standards for Mathematics.

Sidney Fox
North Carolina State University, Raleigh

214 (CONVENTION CENTER)

61
Instructional Strategies That Support Struggling Learners

(Pre-K–5, Research) Session

How do teachers reach students with missing math skills? These strategies provide powerful support for lagging learners during whole- and small-group instruction, and they provide teachers with tools for understanding student thinking. Key Common Core concepts underlying number, operations, and algebraic thinking will be emphasized.

Annette Holmstrom
University Place School District, Washington
Jeff Loupas
University Place School District, Washington

242 (CONVENTION CENTER)

62
Mathematics Specialists: Finding Your Rhythm and Supporting the Band

(Pre-K–5) Session

Are you a math specialist or coach? Are you an accomplished teacher who is considering transitioning to or preparing for the position of elementary math specialist or coach? Get practical guidance on how to maximize your effectiveness as a specialist/coach through high-impact coaching practices. Learn about a new NCTM publication to support your work.

Patricia F. Campbell
University of Maryland, College Park
Vickie L. Inge
University of Virginia, Charlottesville
Debbie Delozier
Stafford County Public Schools, Virginia

206 (CONVENTION CENTER)

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9:30 A.M.–10:30 A.M.

63
Rich Mathematical Tasks: Developing the Standards for Mathematical Practice

(Pre-K–5) Session

Engage in task professional development and resources that support student development of the Common Core Content and Practice Standards. We will unpack the content standards, engage and critique mathematically rich tasks, and learn how to facilitate student thinking for effective orchestration of classroom discourse.

Jody Guarino
University of California, Irvine
Cathery Yeh
University of California, Irvine

JASPERWOOD (HILTON)

64
Engaging Activities + Effective Instructional Strategies = Numerically Nimble Students

(3–5) Session

Improve students' numeric competence with strategies that promote greater sense making and participation. Discover effective ways to differentiate instruction and efficiently implement the Common Core, and particularly the Standards for Mathematical Practice. Handouts will be provided with activities that enhance mathematical reasoning as students improve their number sense and computation skills.

Leigh Childs
San Diego County Office of Education, California

GRAND SALON 21–24 (HILTON)

65 10
Engaging Minds to Gauge Learning

(3–8) Session

Formative assessment should be an invisible opportunity for teachers to gauge learning while students are involved in rich mathematical tasks. This session will focus on short tasks that are rich in mathematics learning opportunities and provide valuable information so that teachers can meet the needs of their students.

Diana L. Kasbaum
Wisconsin Department of Public Instruction, Madison

GRAND BALLROOM C (HILTON)

66
Flip It Good! Creating an Interactive Flipped Math Experience

(3–8) Session

In this session, learn how teachers can use educational web pages and interactive iPad apps to turn the traditional flipped classroom model into an interactive social community engaged in process-based, collaborative math instruction.

Lloyd Jonathan Goldberg
Clark County School District, Las Vegas, Nevada
Sara Boucher
Clark County School District, Las Vegas, Nevada
Leslie Oney
Clark County School District, Las Vegas, Nevada

223 (CONVENTION CENTER)

67
High-Impact Techniques for Asperger's in the Classroom

(3–8, Research) Session

Finding high-impact math classroom techniques that enable Asperger's students to succeed with little additional teacher preparation time required is difficult. We will discuss specific techniques gleaned from teacher interviews and targeted manifestations from choosing and executing strategies to explaining and showing work.

Debbie Gochenaur
Shippensburg University, Pennsylvania
Andrew Geesaman
Greencastle-Antrim Middle School, Greencastle, Pennsylvania

MELROSE (HILTON)

68
The Language of Math: Strategies to Support English Language Learners

(3–8) Session

What do math teachers need to know about academic language? What are some strategies that teachers can use to shelter instruction for English language learners in the math class? This session will offer insight into the language features commonly found in the math class, along with strategies, ideas, and activities to take back to your class.

Bonnie Baer-Simahk
Fitchburg Public Schools, Massachusetts
Patricia Aube
Fitchburg Public Schools, Massachusetts

R01 (CONVENTION CENTER)

9:30 A.M.–10:30 A.M.

69
How Can We "Make Use of Structure" (Mathematical Practice #7)?

(6–8) Session

This session will provide examples of ways to integrate the Common Core's Mathematical Practice #7 in our teaching. Structure is present in the connections of algebra and arithmetic, in solving linear equations, and in the types of word problems' solution representations. We need to make structure explicit so that our students achieve not just mastery but flexibility.

Jenny K. Tsankova
Roger Williams University, Bristol, Rhode Island
James R. Matthews
Siena College, Loudonville, New York

235/236 (CONVENTION CENTER)

70
Folding in the Mathematical Practices with Construct-and-Describe (CD) Problems

(6–12) Session

Explore how paper-folding constructions with a description of the process (CD problems) can engage students in making sense of geometric concepts, building their geometric vocabulary, and learning to precisely communicate their thinking. Participants will learn several CD problems and discuss connections to the Common Core's Mathematical Practices.

Juliana Utley
Oklahoma State University, Stillwater
Stacy Reeder
University of Oklahoma, Norman

GRAND SALON 13–16 (HILTON)

71
Incredible Math Tasks! Assessing Mathematical Content and Practices

(6–12) Session

In this hands-on session, we will explore how to use excellent and worthwhile math tasks to assess student learning. We will examine how we use rubrics to measure growth in content and math practices. These processes will prepare students for rigorous national assessments. Leave with resources (200-plus tasks) and ideas you can use on Monday morning.

Bill Barnes
Howard County Public Schools, Maryland
Jenny Novak
Howard County Public Schools, Maryland

R09 (CONVENTION CENTER)

72
Figurate Numbers: What's Your Representation?

(6–8) Session

Middle school teachers search for ways to link computation to algebraic thinking. During this session, participants will explore middle school students' conceptions of figurate numbers and learn ways to develop students' ability to abstract from computation by emphasizing connections across multiple representations.

George J. Roy
University of South Florida St. Petersburg
Farshid Safi
The College of New Jersey, Ewing

245 (CONVENTION CENTER)

73
Using Three-Act Video Tasks and Using Them Well!

(6–12) Session

President's Series presentation

Participants will explore a new format for presenting rich open-ended tasks, the three-act video. They will explore a number of these tasks and learn how to access them online for free. Participants will also consider the learning opportunities these tasks afford students and challenges teachers face using them as part of a coherent curriculum.

Valerie Lynn Mills
Oakland Schools, Waterford, Michigan

R03 (CONVENTION CENTER)

10 10-Minute Tasks · EW Exhibitor Workshop · L↔R Learn↔Reflect · NCTM Committee · NT New Teacher · PtA Principles to Actions · SJ Social Justice · CF Teaching Computational Fluency

9:30 A.M.–10:30 A.M.

74
Making Sense of Inference for Sampling and Experiments

(9–12) Session

Inference makes up about half of most introductory statistics courses, including AP Statistics. In this session, we will explore how the logic of inference differs in sampling and experimental settings. We will also examine a four-step process that can help students construct confidence intervals and perform significance tests successfully.

Daren Starnes
The Lawrenceville School, Lawrenceville, New Jersey

R07 (CONVENTION CENTER)

75
The Conic Sections: From Paper Folding to Sketches to Equations

(9–12) Session

It's great to fold patty paper to make an outline of an ellipse or of the other conic sections, but why do the constructions work? We will connect the paper folds of parabolas, ellipses, and hyperbolas to dynamic sketches based on the definitions of these three figures. From there, we can make sense of the equations for the figures.

Loring Coes
Rocky Hill School, East Greenwich, Rhode Island

243 (CONVENTION CENTER)

76
Partial Credit: Friend or Frankenstein?

(9–12, Higher Education) Session

In what ways is partial credit helpful or harmful to students? What types of partial credit are appropriate for different classes? Attendees will discuss these issues and vote on how many points to award samples of actual student mistakes. Examples will be taken from algebra 1 through calculus.

Anne L. Praderas
Austin Community College, Austin, Texas

BELLE CHASSE (HILTON)

77
How to Teach Geometry . . . without Technology!

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

In the BC (before computer) era of mathematics education, some of the most profound, interactive, and dynamic activities in geometry could be done in the classroom without the use of technology. See how dozens of essential but forgotten manipulatives from yesteryear can be made from common materials like paper, string, rubber bands, and even fingers!

David K. Masunaga
Iolani School, Honolulu, Hawaii

GRAND BALLROOM A (HILTON)

78
Number, Shape, and Symmetry: Ideas to Inspire Teachers and Students

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

Number theory and geometry lay the foundation for mathematics in the middle grade, high school, and university levels. Explore the Four Numbers Game and One's Digit Arithmetic, find the symmetry groups of regular polygons and of infinite patterns, and see how these activities can be used to develop serious mathematical ideas.

Diane L. Herrmann
University of Chicago, Illinois

GRAND SALON 19–22 (HILTON)

79
Look Who's Talking: Using Math Talk to Promote Number Sense

(Higher Education, Preservice and In-Service) Session

Find out how you can use math talk in your methods classroom to help preservice teachers develop children's number sense. We will discuss teaching practices associated with establishing an environment rich in communication and share data that show how math talk supports the development of students' mathematical understanding.

Tracy Y. Hargrove
University of North Carolina Wilmington
Heidi J. Higgins
University of North Carolina Wilmington

ROSEDOWN (HILTON)

9:30 A.M.–10:30 A.M.

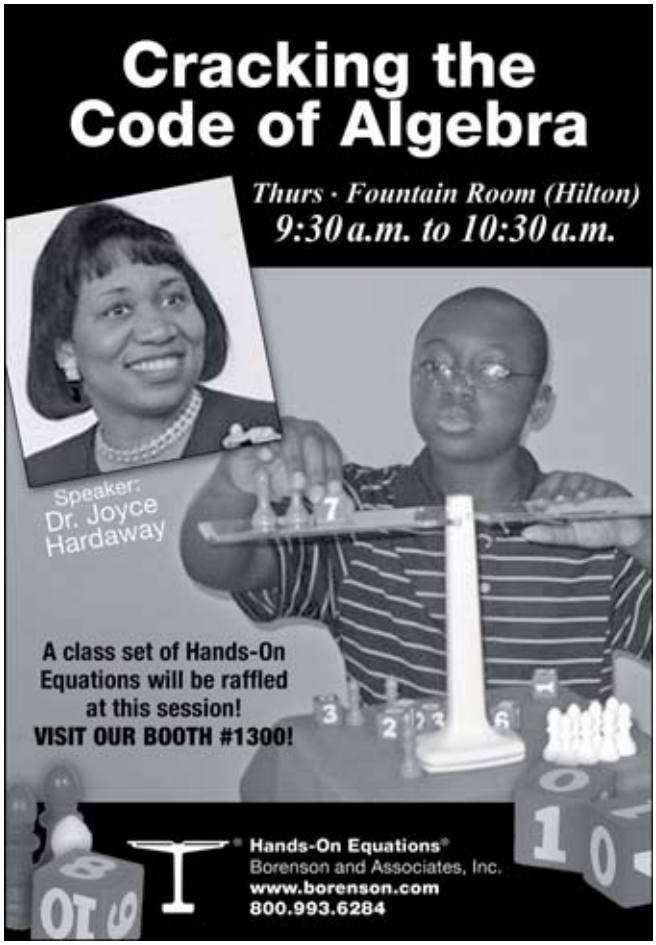
80
Technology Course for Preservice Math Teachers

(Higher Education, Preservice and In-Service) Session

A technology course for preservice mathematics teachers has been developed by South Dakota State faculty to give students opportunities to integrate technology while teaching grades 6–12 mathematics. The use of calculators, iPads, SMART Boards, Promethean boards, Promethean slates, GeoGebra, VoiceThread, Edmodo, Schoology, and Twitter are all explored.

Sharon Vestal
South Dakota State University, Brookings
Christine Lynne Larson
South Dakota State University, Brookings

230 (CONVENTION CENTER)



80.1 EW
Experience Investigations and the Common Core

(Pre-K–5) Exhibitor Workshop

Interactive whiteboard, assessment, and differentiated activities that focus on CCSS Standards for Mathematical Content and embed Standards for Mathematical Practice will be shared for classroom use.

Pearson
Upper Saddle River, New Jersey

219 (CONVENTION CENTER)

80.2 EW
Supplemental Programs to Meet the Needs of All K–5 Students

(Pre-K–5) Exhibitor Workshop

Learn about CCSS-aligned supplements that meet the needs of all students. Whether used with struggling learners for RTI, at-level learners who need additional math practice, or advanced learners who need math challenges, our programs provide teaching and learning strategies along with rigorous content that helps build mathematics achievement.

Kendall Hunt Publishing Company
Dubuque, Iowa

209 (CONVENTION CENTER)

80.3 EW
Differentiation, Flexible Grouping, Intervention … OH MY!

(3–8) Exhibitor Workshop

See how strategies of quality classroom instruction using a Learning Path Teaching-Learning model allow considerable differentiation within whole-class instruction. Learn strategies for assessing and determining needs for grouping students and ideas for learning stations; management tips will be shared.

Houghton Mifflin Harcourt
Austin, Texas

208 (CONVENTION CENTER)

9:30 A.M.–10:30 A.M.

80.4 EW
Cracking the Code of Algebra to Ensure Success for All

(3–8) Exhibitor Workshop

How does Hands-On Equations® enable 80 percent of inner city fourth graders to succeed with such basic equations as $4x + 3 = 3x + 10$ in only three lessons? Come and discover how effective instruction can dramatically shorten the learning process and lead to higher levels of success. If algebra is a foreign language to your students, this session is for you!

Borenson and Associates
Allentown, Pennsylvania

FOUNTAIN ROOM (HILTON)

80.5 EW
Think Through Math: 5 Strategies to Transition to Common Core

(3–8) Exhibitor Workshop

Worried about the lack of readiness across grades for more rigorous standards? Learn how one district is making an effective transition. This presentation includes an overview of Think Through Math, a Web-based intervention solution for grades 3–algebra 1 that provides Common Core instruction and practice to underperforming students.

Think Through Learning Inc.
Pittsburgh, Pennsylvania

218 (CONVENTION CENTER)

9:45 A.M.–11:00 A.M.

81
Building Numerical Fluency through Children's Multicultural Literature

(Pre-K–2) Gallery Workshop

How can we develop numerical fluency with elementary children? Carefully selected multicultural books for children provide an engaging context for building numerical fluency while promoting diversity. In this workshop participants will have the opportunity to experience these hands-on extensions and the potential for using them in the classroom.

Amy K. Corp
Baylor University, Waco, Texas
Sandra D. Cooper
Baylor University, Waco, Texas

GRAND BALLROOM D (HILTON)

82
Playing with the Common Core

(Pre-K–2) Gallery Workshop

Children love to play games. In this workshop, attendees will explore how to use games to address the Common Core State Standards for Mathematics for early elementary grades. The focus will be on the Standards of Mathematical Practice and the content domain of Number and Operations in Base Ten.

David Coffey
Grand Valley State University, Allendale, Michigan
Kathryn Coffey
Grand Valley State University, Allendale, Michigan

R02 (CONVENTION CENTER)

83
Putting It Together: Activities for Understanding Number Composition and Decomposition

(Pre-K–2) Gallery Workshop

To compute quickly and accurately in later grades, young children should spend much of their time putting together and pulling apart different numbers. Attendees will leave this session with more than a dozen classroom-ready activities for number partitions, break-apart partners, part-part-whole tasks and more.

Carrie S. Cutler
University of Houston-Downtown, Texas

215/216 (CONVENTION CENTER)

84
¡Mídanlo! (Measure It!): Choosing Manipulatives for Informal Measurement

(Pre-K–5) Gallery Workshop

Participants will investigate the advantages and disadvantages of various manipulatives used to measure length, perimeter, area, and volume. Which manipulatives contribute to student understanding and which manipulatives cause confusion? We will also discuss the measurement terminology that may be challenging for English language learners.

Gwendolyn J. Johnson
University of North Texas at Dallas
Ali Shaqlaih
University of North Texas at Dallas
Marco Shappeck
University of North Texas at Dallas

R06 (CONVENTION CENTER)

9:45 A.M.–11:00 A.M.

85
Differentiating Instruction in Grades 3–5 with Open-Ended Problem Solving

(3–5) Gallery Workshop

Participants will solve, create, and score open-ended problems. We will show how to take traditional textbook problems and transform them into open-ended ones. We will discuss how these types of problems can be used to differentiate mathematics instruction and challenge all learners while meeting the Common Core's Standards for Mathematical Practice.

Nancy L. Smith
Emporia State University, Kansas
Marvin E. Harrell
Emporia State University, Kansas

240/241 (CONVENTION CENTER)

86
When Place Value Isn't in Place: Targeting Interventions

(3–5) Gallery Workshop

Do you have students who struggle with number sense? Come see a classroom-tested diagnostic model, and participate in multiple engaging hands-on intervention activities designed to deepen student understanding of place value with higher numbers.

Barbara Child
Logan City School District, Utah
Arla Westenskow
Utah State University, Logan
Jed Grunig
Logan City School District, Utah

R08 (CONVENTION CENTER)

Do not forget your name badge! Badges are needed to attend presentations and explore the Exhibit Hall.

87
Write Proofs! How the Logic in Games Develops Proof-Like Reasoning

(3–5) Gallery Workshop

Creating viable arguments (a Common Core expectation) is challenging for many students with special needs. In this workshop, we will show how we used games and strategy discussions to develop students' critical thinking and their oral and written communication. We will present students' work to trace the evolution of their writing. Games and lessons will be shared.

Antonia Marie Cameron
Metamorphosis Teaching Learning Communities, New York, New York
Karine Kelley
New York City Department of Education, P.S. 230, New York
Lauren O'Neil
New York City Department of Education, P.S. 230, New York

NAPOLEON BALLROOM (HILTON)

88
Using Student Thinking to Connect Operations and Algebraic Thinking

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

Students often have a variety of strategies for solving multidigit arithmetic problems. What are the generalizations that underlie the various approaches they use? How can models, number lines, and story contexts be used to justify these generalizations? Answering these questions supports us as we connect operations and algebraic thinking.

Nicole R. Rigelman
Portland State University, Oregon

244 (CONVENTION CENTER)

89
Earth by the Numbers

(3–8) Gallery Workshop

In this STEM-based workshop, we will engage in innovative, hands-on activities to help students use their developing math skills to better understand human impacts on the environment. Use real-world data to boost understanding of numbers and operations, measurement, probability, and more. Participants will receive lesson plans on CD-ROM.

Carol Bliese
Population Connection, Washington, D.C.

238/239 (CONVENTION CENTER)

10 10-Minute Tasks · EW Exhibitor Workshop · L↔R Learn↔Reflect · NCTM Committee · NT New Teacher · PtA Principles to Actions · SJ Social Justice · CF Teaching Computational Fluency

9:45 A.M.–11:00 A.M.

90
Deriving the Area of Triangles and Quadrilaterals Using Index Cards

(6–8) Gallery Workshop

This hands-on session will share an activity that engages students in deriving the area formula for right and other triangles and special quadrilaterals. The activity uses index card, markers, and scissors to help students visualize the relationship between and among the figures by composing or decomposing figures.

Gladis Kersaint
Board of Directors, National Council of Teachers of Mathematics; University of South Florida, Tampa

211/212 (CONVENTION CENTER)

91
Problem Solving with Multiples and Factors

(6–8) Gallery Workshop

Engage in rich mathematical tasks while exploring multiples and factors. Use multiple representations while looking for patterns, relationships, and applications.

Kay A. Wohlhuter
University of Minnesota Duluth

228/229 (CONVENTION CENTER)

92
Putting Students on the Fast Track to Better Problem Solving

(6–8) Gallery Workshop

Come and discover how to efficiently and effectively teach students how to solve and model word problems using simple brain-based strategies and bar modeling. These strategies will transform your students into excited, motivated and successful problem-solving pros. You and your students will never see or solve word problems the same again!

Darlyne de Haan
New Jersey Department of Education, Clarksboro

203/204/205 (CONVENTION CENTER)

93
Algebra on My Mind: Tools to Promote Algebraic Reasoning

(6–12) Gallery Workshop

How do we engage students with algebra in ways that are mindful, thought-provoking, and generative? Using various tools and technology, participants will explore ways to support students' algebraic reasoning, insight, and skill. These approaches can be used to translate Common Core State Standards into instruction that is more student centered.

David C. Webb
University of Colorado Boulder

217 (CONVENTION CENTER)

94
Building a Musical Scale . . . By Any "Means" Necessary

(6–12) Gallery Workshop

The authors of the new investigations text *Fostering Mathematics Through Music* will guide participants in using different musical scales to teach a variety of mathematical structures and concepts, including arithmetic/geometric/harmonic means, modular arithmetic, and combinatorics.

Mike J. Reiners
Christ's Household of Faith School, St. Paul, Minnesota
Bob Horton
Clemson University, South Carolina

210 (CONVENTION CENTER)

95
Flipping Out about Math

(6–12) Gallery Workshop

This presentation will introduce or expand your knowledge of the trending instructional strategy called "flipping the classroom." Participants will see how a flipped math classroom is conducted, become familiar with the technology and tools needed to effectively implement this strategy, and discuss results and challenges that may occur.

Shannon Roche
South Fayette High School, McDonald, Pennsylvania
Erin Whitaker
Propel Charter Schools, Pittsburgh, Pennsylvania

GRAND BALLROOM B (HILTON)

9:45 A.M.–11:00 A.M.

96
Inference and Decision Making through Simulations and Re-randomization Experiments

(6–12) Gallery Workshop

This session engages participants in explorations that involve making inferences about populations from random samples and making decisions about possible differences between groups based on re-randomization experiments. The difference between random sampling from populations and random assignment in an experiment is highlighted.

J. Michael Shaughnessy
Past President, National Council of Teachers of Mathematics; Portland State University, Oregon

VERSAILLES (HILTON)

97
Number and Quantity in Middle and High School

(6–12) Gallery Workshop

The Common Core State Standards for Mathematics place a renewed emphasis on number and quantity in the upper grades. This focus includes the rational and complex number systems, vectors, and matrices. This workshop will present several activities and ideas to help participants develop conceptual understanding in these areas for middle and high school students.

Brian P. Beaudrie
Northern Arizona University, Flagstaff
Barbara Boschmans
Northern Arizona University, Flagstaff

207 (CONVENTION CENTER)

Receive a **Free T-shirt**— join or renew your NCTM membership on-site at the NCTM Member Showcase.

98
Systems of Linear Equations: Concrete and Engaging for All Students

(6–12) Gallery Workshop

Join us for conceptual lessons that are focused on solving systems of linear equations via activities such as Police Chase and Sewer Gator, which are designed to engage even the most reluctant of learners. These lessons are embedded with academic language development through purposeful discourse strategies and writing tasks. You can use them in your classroom next week!

Kris Houston
University of California, Irvine
Janna Canzone
University of California, Irvine
Karajean Hyde
University of California, Irvine

MAGNOLIA (HILTON)

99
The Tangram Puzzle: Exploring Real Numbers, Perimeter, and Area

(6–12) Gallery Workshop

Explore various geometric figures while cutting a tangram puzzle. Then focus on measurement and real number lengths exhibited by the puzzle. Find areas and perimeters of various figures that can be created using the tangram pieces. Classroom-ready materials will be available.

Teri Willard
Central Washington University, Ellensburg
Mandy McDaniel
Boise State University, Idaho

221/222 (CONVENTION CENTER)

100
Transformational Geometry: Travel through the Common Core!

(6–12) Gallery Workshop

Investigate transformational geometry and algebra in the Common Core State Standards by delving deeper into the mathematics and applications. Actively participate in tasks, technology, games, interactive conjecturing, and proof. Bring your laptop and a thumb drive to collect some great ideas that you can use on Monday!

Vivian La Ferla
Rhode Island College, Providence

R04 (CONVENTION CENTER)

9:45 A.M.–11:00 A.M.

101
Want to Work for Pixar? Start Here with TI-84 Animations!

(6–12) Gallery Workshop

We will learn to draw pictures and create 2-D and 3-D animations on our TI-84 calculators that we can enlarge or shrink. We will work first with 2-D coordinates and then transform our screens into 3-D by adding a *z*-axis. The goal is to be able to create your own little movies, especially of geometric shapes such as cubes and icosahedra, and learn how to teach your students to do the same.

Patricia Baggett
New Mexico State University, Las Cruces
Andrzej Ehrenfeucht
University of Colorado Boulder

OAK ALLEY (HILTON)

102
Algebra Activities from Automotive, Business, and Construction Topics

(9–12) Gallery Workshop

You will participate in—and receive to bring back to your school—three engaging hands-on classroom activities that highlight Common Core Standards for Mathematical Practice. The activities will span many career paths. The math topics include linear equations, systems of equations, and exponential equations. Join us to see how project-based activities can improve learning and provide relevance.

Tom W. Moore
Thompson School District, Loveland, Colorado

GRAND SALON 15–18 (HILTON)

103
Productive Struggle to Grow Stronger Mathematics Students in K–12

(Preservice and In-Service) Gallery Workshop

Making sense of problems and persevering in solving them is difficult for students not used to thinking and for teachers not used to allowing students time for productive struggle. We will share how Kentucky regional teacher networks use high-level tasks in formative assessment lessons to help teachers create an environment for student thinking.

Debbie Waggoner
Kentucky Department of Education/Central Kentucky Educational Cooperative, Lexington
Jenny Ray
Kentucky Department of Education/Northern Kentucky Cooperative for Educational Services, Cold Spring
Katrina Slone
Kentucky Department of Education/ Kentucky Valley Educational Cooperative, Hazard

GRAND SALON 4–7–10 (HILTON)

11:00 A.M.–12:00 P.M.

104 PtA

Actions to Improve Curriculum and Assessment Practices

(General Interest) Session

This fast-paced session will stimulate participants to think about practical ways to bring about change in their classrooms and districts. One of the authors of NCTM's *Principles to Actions*, Daniel Brahier, will spotlight changes in curricular and assessment practices at the secondary level that can assist with implementation of the Common Core State Standards.

Daniel Brahier is a professor of mathematics education at Bowling Green State University who also teaches junior high mathematics at St. Rose School in Perrysburg, Ohio. He has taught science and mathematics at high school and middle school levels and has served as a school principal and a district curriculum consultant. He is the author of several books on mathematics education, including a methods textbook titled *Teaching Secondary and Middle School Mathematics*, and he recently served as co-author of NCTM's new *Principles to Actions* document.

Daniel J. Brahier
Bowling Green State University, Ohio

JEFFERSON BALLROOM (HILTON)

11:00 A.M.–12:00 P.M.

105
A Smarter Balanced System to Support Mathematics Teaching and Learning

(General Interest) Session

This session describes the progress made and challenges faced as the Smarter Balanced Assessment Consortium works collaboratively with its twenty-six member states on building a shared assessment system.

Shelbi K. Cole
Smarter Balanced Assessment Consortium, Olympia, Washington

GREAT HALL B/C (CONVENTION CENTER)

106
Developing Leaders in Mathematics Education: What Does it Take?

(General Interest) Session

There is an ongoing need for math education leaders as we work to make math accessible and engaging for all students while implementing the Common Core and newly adopted state standards. Engage in activities designed to foster and strengthen leadership in math education. Resources for encouraging and developing leadership will be shared.

NCTM Affiliate Services Committee
National Council of Teachers of Mathematics, Reston, Virginia

245 (CONVENTION CENTER)

107
The National Science Foundation and the Improvement of Mathematics Education

(General Interest) Session

NSF-funded projects have shaped innovation in mathematics education for more than five decades. Come hear highlights and an NSF perspective on the impact of these investments and on some of today's most promising themes. We will explore what the future might hold in a world of big data, citizen science, personalized learning, and new technologies.

Joan Ferrini-Mundy
National Science Foundation, Arlington, Virginia

GRAND BALLROOM A (HILTON)

108
Thirty Years of Mathematics for Social Justice: What Is It?

(General Interest) Session

This session provides a historical and theoretical overview of critical mathematics or, more broadly, teaching mathematics for social justice. This session also outlines the challenges and possibilities of critical, social justice mathematics in K–12 classrooms. Specific examples of what teaching mathematics for social justice might look like are provided.

David W. Stinson
Georgia State University, Atlanta
Anita A. Wager
University of Wisconsin–Madison

ROSEDOWN (HILTON)

109
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

235/236 (CONVENTION CENTER)

110
Differentiate Learning of Number and Addition/Subtraction Facts via Representation

(Pre-K–2) Session

The ways we represent numbers and relationships matters. Explore children's thinking and classroom activities rich in representation; different uses of representation provide a way to differentiate instruction and build children's understanding of number and operation. Explore how representation puts many of the Common Core's Mathematical Practices into practice.

Esther Billings
Grand Valley State University, Allendale, Michigan
Anne Rasch
Child Discovery Center, Grand Rapids, Michigan

R05 (CONVENTION CENTER)

11:00 A.M.–12:00 P.M.

111
Enlist, Engage, and Energize Your Best Partners in Education—Parents

(Pre-K–5) Session

Learn how to help parents understand the Common Core State Standards. Leave with activities that address the CCSS and help parents become math advocates and engage in their child's learning.

Susan D. Rogalski
Self-Employed Consultant, Bedford, Massachusetts
Patsy F. Kanter
PK Consultants, New Orleans, Louisiana

223 (CONVENTION CENTER)

112
Math Conferences for Assessing, Teaching, and Learning

(Pre-K–5) Session

Use student-teacher math conferences to make students' learning visible, offer descriptive feedback, and teach the next steps in learning. These one-on-one conversations encourage students to self-assess their learning and to set goals, while promoting strong mathematical practices. Learn practical strategies for using math conferences in the classroom.

Laney A. Sammons
Independent Mathematics Consultant, Tunbridge, Vermont

BELLE CHASSE (HILTON)

113
Mental Math: Put the Pencil Down

(3–5) Session

Mental math activities = brain power! We will focus on how to implement mental math by intentionally selecting problems that develop flexible thinking, increase classroom discourse, and support the Content and Mathematical Practice standards of the Common Core. The session also includes student samples and tips you can embed into your instruction.

Debby Cruz
Cartwright School District, Phoenix, Arizona
Shannon Rings-Pinnell
Cartwright School District, Phoenix, Arizona

243 (CONVENTION CENTER)

114
Fractions / Common Core = Discourse / Mathematical Practices

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

In this session, we will explore and reveal the role of discourse in the teaching and learning of common fractions in grades 3–5. Fractions and the four basic operations will be modeled using the Square Model for Fractions. Bring paper and pencil to sketch these models for fractions and operations.

Lee V. Stiff
Past President, National Council of Teachers of Mathematics; North Carolina State University, Raleigh

GREAT HALL A/D (CONVENTION CENTER)

115
Doing What Works: Problem Solving with Standards for Mathematical Practice

(3–8, Research) Session

The Doing What Works website translates research-based practices into tools to support and improve classroom instruction on topics such as mathematical problem solving, teaching fractions, foundations for algebra, and RtI. This session uses the IES Practice Guide on Improving Mathematical Problem Solving to focus on the Common Core Standards for Mathematical Practice.

Clare Heidema
RMC Research Corporation, Denver, Colorado

214 (CONVENTION CENTER)

116
Mathematics Mentorship Project: Developing Written Communication Skills

(3–8) Session

The Mathematics Mentorship Project was developed to provide ongoing mathematics enrichment for gifted students in grades 5–6. See how this pilot study analyzes written mathematical communication to understand aspects of mathematical communication and to investigate how this communication changes over time and what mentor feedback is useful to students.

Matthew D. Reames
University of Virginia, Charlottesville

230 (CONVENTION CENTER)

11:00 A.M.–12:00 P.M.

117 LCR
Quality Questioning in Number and Operations

(3–8) Session

Want to understand number and operations? What questioning strategies can you use to develop critical thinking and to formatively assess your students as you promote use of the Common Core's Mathematical Practices? Come to this session to find out how you can help your students to be prepared to use number and operations beyond your classroom.

DesLey V. Plaisance
Nicholls State University, Thibodaux, Louisiana

R07 (CONVENTION CENTER)

118 LCR
Rational Number Project: Number Line as a Model for Fractions

(3–8) Session

The number line differs greatly from other models used to build meaning for fractions. Our latest research has led to a better understanding of the role the number line model can play in students' fraction learning, the reasons that students have difficulties with the number line, and instructional strategies for overcoming these obstacles.

Kathleen Cramer
University of Minnesota, Minneapolis
Debra Monson
University of St. Thomas, St. Paul, Minnesota
Elena Gullickson
University of Minnesota, Minneapolis

R09 (CONVENTION CENTER)

119
Academically Productive Talk in the Mathematics Classroom

(6–8) Session

Today's students are being asked to construct viable arguments and critique the reasoning of others. Academic talk reveals both understanding and misunderstanding, promotes deeper understanding, and supports language development. This session explores getting started, norms, and planning lessons that focus on student discourse.

Genni Steele
Math Solutions, Sausalito, California
Le'Vada Gray
Math Solutions, Sausalito, California

206 (CONVENTION CENTER)

120
Help! There's a Ton of Statistical Bricks Falling on Me!

(6–8) Session

The Common Core Statistics standards land like a ton of bricks in grade 6, challenging teachers to establish robust conceptual understanding. Unpack these standards with a learning trajectory, and build the foundations for fundamental topics—variation, distribution, statistical investigation, graphical representations, and numerical measures of data.

Alan P. Maloney
North Carolina State University, Raleigh
Dicky N. Ng
Friday Institute, North Carolina State University, Raleigh

GRAND SALON 21–24 (HILTON)

11:00 A.M.–12:00 P.M.

121
Ratio and Proportion: A Common Core Progression for Grades 6–7

(6–8) Session

This session presents a two-year, flipped sixth- and seventh-grade ratio and proportion unit using instructional videos viewed at home and Common Core lessons in the classroom. Participants will be shown how to effectively use ratio tables and bar models to develop their students' proportional thinking.

Duane Habecker
Pleasanton Unified School District, California
Mary Anne Freitas
Pleasanton Unified School District, California

GRAND SALON 19–22 (HILTON)

122 10
Using Formative Assessment Lessons to Understand Your Students' Thinking

(6–8) Session

The Mathematics Assessment Project (a collaboration between the University of California, Berkeley, and the Shell Center at the University of Nottingham) has developed formative assessment lessons that use short tasks to identify students' knowledge prior to the lesson and then, after the lesson, gather evidence of student learning. This session will explore those lessons as it engages teachers in analyzing proportional relationships.

Diane L. Schaefer
Diane Schaefer Consulting, Cranston, Rhode Island

GRAND SALON 13–16 (HILTON)

123 LCR
Stories, Models, Strategies, and Algorithms: Putting Fractions in Real Contexts

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

Turn your thinking upside down as you explore strategies for understanding fraction division. Expectations from the Common Core State Standards include solving real-world problems using visual fraction models for division. Strategies using visual fraction models will be shared for developing students' fluency with fraction division through word problems.

Susan L. Hillman
Saginaw Valley State University, University Center, Michigan

R03 (CONVENTION CENTER)

124 10
Algebra and the Common Core in Your Classroom

(6–12) Session

This session will focus on classroom-ready mathematical tasks aligned with the Common Core algebra standards. The goal of these tasks is to model ways to help students develop a conceptual understanding of functions—linear, quadratic, exponential, trigonometric, and so on—so that they can apply this understanding to current and future coursework.

Benjamin J. Sinwell
Anderson School District 4, Pendleton, South Carolina

GRAND SALON 9–12 (HILTON)

125 LCR
I See It: Visual Sense Making of Radicals and More

(6–12) Session

"I get it" too often just means one knows what to do to get the answer. Both with technology and without, we'll explore tasks that can engage students to make sense of number concepts and operations (radicals, fractions, and more) through visual representations that then link to symbolic understanding.

Marc Garneau
Education Services, Surrey School District, Surrey, British Columbia, Canada

242 (CONVENTION CENTER)

11:00 A.M.–12:00 P.M.

126 L↔R
Mathematical Perseverance: Instilling a Desire to Struggle in Solving Problems

(6–12) Session

Students show they can persevere in their everyday lives, but when it comes to math problems, all too often they give up. We will discuss strategies to increase stamina, help students discover the value of the problem-solving process, and make students comfortable with not immediately having an answer.

Elisabeth Jaffe
Baruch College Campus High School, New York, New York
Ruth Cogan
Baruch College Campus High School, New York, New York
Ashley Wegener
Baruch College Campus High School, New York, New York

R01 (CONVENTION CENTER)

127 L↔R
Assessing Number and Operations on the SAT

(9–12) Session

How can students demonstrate their ability to work with numbers and operations on the SAT? What skills in number and operations should be assessed, and how can they be assessed in the presence of a calculator? How does the SAT address these skills in the context of the Common Core State Standards? Come hear the answers to these questions and more.

Andrew D. Schwartz
College Board, New York, New York

225/226/227 (CONVENTION CENTER)

128
Modeling Problems That Bring the Common Core to Life

(9–12) Session

Exploring engaging modeling problems can help students delve deeper into both the Common Core content standards and the Mathematical Practices. We will demonstrate how to collect data using TI probes and data-capture from videos. Then we'll use piecewise, quadratic, and exponential functions as models.

Maria L. Hernandez
North Carolina School of Science and Mathematics, Durham

GRAND BALLROOM C (HILTON)

129
The Power of Discourse: Engaging Underprepared Students in Rigorous Algebra

(9–12) Session

A persistent challenge for underprepared students who struggle in algebra is a lack of engagement. Evidence from research suggests that structured discourse provides a powerful pathway toward participation and sense making in algebra. In this session, the facilitation of "discourse communities" that broaden participation in algebraic thinking will be explored.

Timothy M. Stoelinga
Learning Sciences Research Institute, University of Illinois at Chicago
James Lynn
Learning Sciences Research Institute, University of Illinois at Chicago

GRAND SALON 3–6 (HILTON)

130
A Reciprocal Relationship: Lessons Learned from Mentor-Guided Lesson Study

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

Implementing rich, engaging mathematical tasks can be daunting for novice teachers, especially for those who teach students with disabilities. This session will discuss the lessons learned by an experienced algebra 2 teacher and a novice algebra 1 special education teacher through lesson study and video analysis.

Samantha A. Stevens
Grundy County Schools, Coalmont, Tennessee
Candace P. Terry
Middle Tennessee State University, Tullahoma

MELROSE (HILTON)

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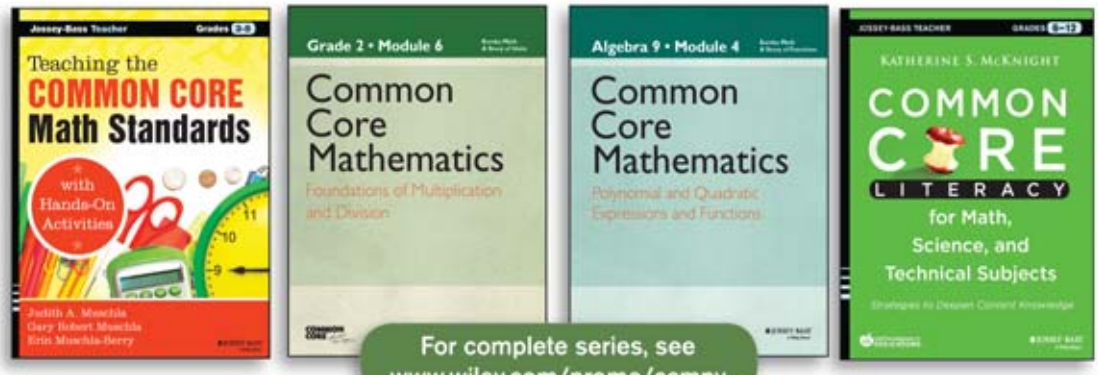

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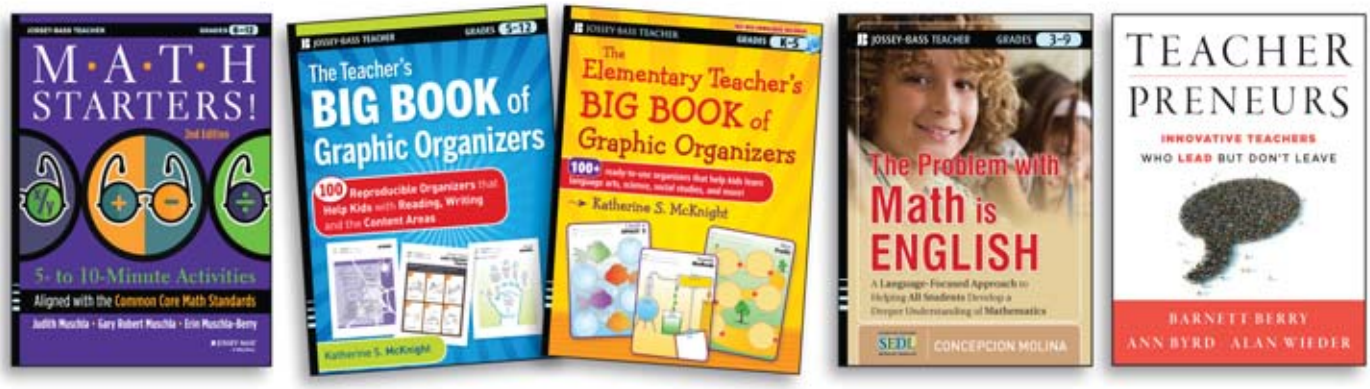

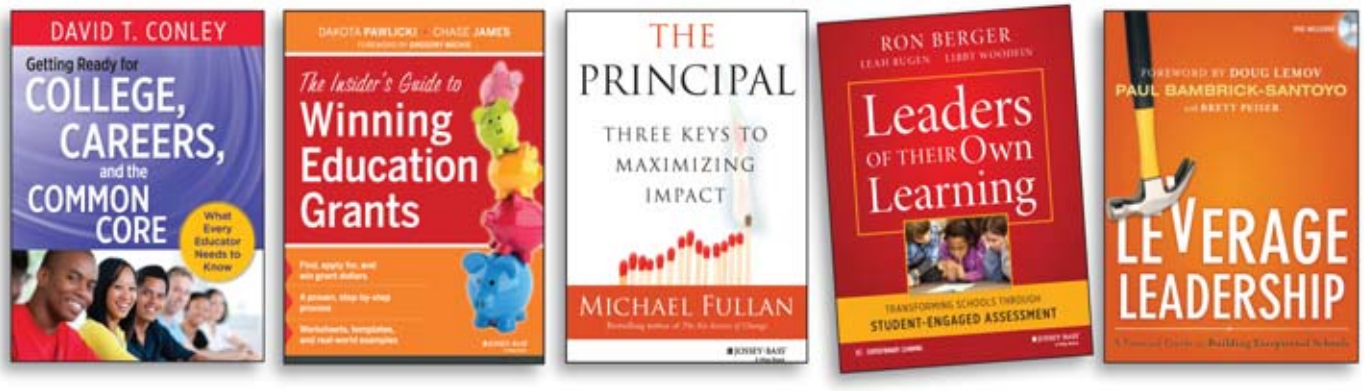

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11:00 A.M.–12:00 P.M.

131
Native American–Based Mathematics Materials for Undergraduate Courses

(Higher Education, Preservice and In-Service) Session

In this session, learn about a project that develops and researches undergraduate mathematics materials based in the culture and mathematics of Native American Peoples for integration into undergraduate courses. These materials are classroom ready. Topics include probability, number theory, transformational geometry, elementary and secondary education.

Miles R. Pfahl
Turtle Mountain Community College, Belcourt, North Dakota
Charles P. Funkhouser
California State University, Fullerton

JASPERWOOD (HILTON)

131.1 EW
Engaging Daily Discussion That Incorporates CCSS Math Practices

(Pre-K–5) Exhibitor Workshop

Concerned about how you're going to make sure your students meet CCSS? Learn how using Every Day Counts Calendar Math for 10–15 minutes a day can deepen students' number sense and reinforce critical thinking and conceptual learning. Learn ways to develop more successful discussion, good questions and other tips from author Patsy Kanter.

Houghton Mifflin Harcourt
Austin, Texas

208 (CONVENTION CENTER)

131.2 EW
Integrating Gaming into Your Common Core Curriculum

(Pre-K–5) Exhibitor Workshop

Explore gaming as a way to not only engage students in conceptual understanding and fluency, but as a way to develop the habits of mind associated with the Standards for Mathematical Practice. Walk away with examples and lesson plans for classroom use.

Pearson
Upper Saddle River, New Jersey

219 (CONVENTION CENTER)

131.3 EW
Get K–5 Content in the Right Format for Your Classroom

(Pre-K–5) Exhibitor Workshop

The new edition of Math Trailblazers provides dynamic delivery of rich and cohesive mathematical content that is written to the Common Core State Standards. Explore its digital and print formats and learn how this research-based program will help you meet the CCSS mathematical practice and content standards and prepare for Common Core assessments.

Kendall Hunt Publishing Company
Dubuque, Iowa

209 (CONVENTION CENTER)

131.4 EW
It's Here! Singapore Math® Presents Primary Mathematics Common Core Edition!

(Pre-K–5) Exhibitor Workshop

We will introduce our newest Singapore Math® program, Primary Mathematics Common Core Edition! Learn about the highly successful Singapore Math® elementary math series and the recent changes that have been made for the CCSS. This will be beneficial to those currently using Primary Mathematics and those considering implementing it for the first time.

Singapore Math Inc
Tualatin, Oregon

218 (CONVENTION CENTER)

131.5 EW
Do Word Problems Scare the Daylights Out of Your Students?

(3–8) Exhibitor Workshop

For many students, word problems set off a panic button: how does one translate an abstract word problem into an even more abstract algebraic equation? Attend this session to learn how Hands-On Equations® enables students to represent and solve word problems visually using game pieces, including age and consecutive number problems.

Borenson and Associates
Allentown, Pennsylvania

FOUNTAIN ROOM (HILTON)

11:30 A.M.–12:00 P.M.

132
Defining STEM

(General Interest) Burst

What precisely do we educators mean by STEM? Is it the latest buzzword for integrated math and science? Is it an umbrella term for four distinct subjects or is it a unique discipline unto itself? Must we define it at all? We will look at competing definitions and introduce a model for developing a personal or institutional definition of STEM.

Patrick N. Foster
Central Connecticut State University, New Britain

244 (CONVENTION CENTER)

133
Egyptians and Engineering: *Elementary* We Say!

(General Interest) Burst

Experience how engineering becomes elementary with this multidisciplinary inquiry-based project that builds interest in STEM. An ancient method of pyramid construction will come alive for students when matched with modern-day engineering.

Charyl Kerns Hills
Council Rock School District, Newtown, Pennsylvania
Mary Petetti Doherty
Council Rock School District, Newtown, Pennsylvania

NAPOLEON BALLROOM (HILTON)

134
iLearn Math: Exploring iOS Apps for Mathematics Education

(General Interest) Burst

As iOS devices such as iPads, iPhones, and iPod Touches proliferate in schools, teachers have access to a growing library of mathematics apps that provide unique opportunities for students. Learn how to evaluate and integrate these apps for your classroom. Receive access to a wiki filled with iOS resources and ideas to improve student learning.

Lucy Bush
Mercer University, Atlanta, Georgia
Jeffrey S. Hall
Mercer University, Atlanta, Georgia

VERSAILLES (HILTON)

135
Math Problems That Make Beautiful Graphs

(General Interest) Burst

Some elegant math problems naturally generate beautiful graphs that excite both sides of the brain. We will consider the Euler line, the Four Turtles problem, and the segments that halve the area of a triangle, which generate hyperbolas. Halving the triangle is appropriate for elementary school, and the Euler line and Four Turtles are appropriate for algebra courses.

John Bradford Burkman
Louisiana School for Math, Science, and the Arts, Natchitoches

GRAND BALLROOM B (HILTON)

136
MET Grants and Scholarships: What They Are, How to Apply

(General Interest) Burst

NCTM's Mathematics Education Trust (MET) supports teachers with funds for materials, development of lessons, conferences, courses, professional development and in-service, and action research. Learn what's available and how to apply. You'll also hear tips for choosing the most appropriate award for you and enhancing your chances to win it.

Mathematics Education Trust
National Council of Teachers of Mathematics, Reston, Virginia

203/204/205 (CONVENTION CENTER)

137
Teachers Supporting Teachers' Understanding of Numbers: A Professional Development Experiment

(General Interest) Burst

Can teachers support other teachers' learning of number sense? How can professional development opportunities help teachers develop and grow? This presentation will examine how one school addressed these questions through a professional development experiment. The professional development model, activities materials, and outcomes will be shared.

Mercedes Tichenor
Stetson University, DeLand, Florida
Doug MacIssac
Stetson University, DeLand, Florida

210 (CONVENTION CENTER)

11:30 A.M.–12:00 P.M.

138
Novice Teachers Face Urban Classroom Realities

(General Interest) Burst

We describe how a novice teacher used the strategy of student error analysis to lead her urban students to believe in the power of incorrect answers and to increase their motivation to learn mathematics. Students discover their errors and question other students' reasoning, making the class a stage of student-centered instruction.

Serigne Mbaye Gningue
Lehman College/City University of New York, New York
Julissa Y. Soriano
New York City Board of Education, New York

228/229 (CONVENTION CENTER)

139
Building Place-Value Understanding Using Calendar Time Enhancements

(Pre-K–2) Burst

Learn how minor adaptations in counting and recording the "Days in School" can significantly increase children's place-value understanding. The speaker will describe a research study examining the impact of introducing Digi-Blocks® and other supportive materials during calendar time. Early data show gains in K–2 children's ten-structured thinking.

Judith L. Fraivillig
Rider University, Lawrenceville, New Jersey

217 (CONVENTION CENTER)

140
Integrating Student-Generated Video, Audio, and Images into Math Discussions

(Pre-K–2) Burst

How were iPads, inquiry, math, and Five Practices for Math Discussions connected? This session will share the challenges and successes of this project that integrated iPad minis to help kindergarteners and first graders to capture their work and thinking so they could share it and build off of it during mathematical discussions.

Megan E. Balong
University of Northern Iowa, Cedar Falls
Katherine Decker
Dr. Walter Cunningham School for Excellence, Waterloo Community Schools, Iowa

GRAND SALON 15–18 (HILTON)

141
Are You Lost? A Road Map to Problem Solving

(Pre-K–5) Burst

Are your students having trouble navigating the winding road through problem solving? You will learn story problem routines and a protocol for creating rich tasks. We will unpack our suitcase of problem-solving tools to help students reach their mathematical destination. Walk away with routines and tasks to bring the Common Core Mathematical Practices to life!

Devin Anderson
Gahanna-Jefferson Public Schools, Gahanna, Ohio
Renee Snyder
Gahanna-Jefferson Public Schools, Gahanna, Ohio
Susan M. Signet
Gahanna-Jefferson Public Schools, Gahanna, Ohio

R06 (CONVENTION CENTER)

2014 Regional Conferences:

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11:30 A.M.–12:00 P.M.

143
Helping Students Master Basic Multiplication Facts

(3–5) Burst

Mastering basic multiplication facts is essential and accessible to all students. Various games and student-invented strategies will be shared to show how partial products can help students make mathematical connections that support number sense and algebraic thinking as they master basic multiplication facts.

Kimberly K. Hartweg
Western Illinois University, Macomb
Bob Mann
Western Illinois University, Macomb

GRAND SALON 4–7–10 (HILTON)

144
Visual Vocabulary: Are They Getting the Picture?

(3–5) Burst

Your students seem to understand math concepts during hands-on activities, but they don't test well. Is vocabulary the problem? Math terms with multiple meanings could be muddying the waters. Learn how using powerful visuals, mnemonics, and easy strategies to intentionally focus on vocabulary during math instruction can make a huge difference!

Theresa Tefertiller
Retired Teacher, Klien Independent School District, Texas

238/239 (CONVENTION CENTER)

145
Caution: Venn Diagrams Ahead!

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

Venn diagrams are often used differently in mathematics and language arts, which creates a potential for confusion. Examples from the elementary school curriculum for mathematics and language arts will be provided, along with suggestions for avoiding this confusion. Student work and thinking about Venn diagrams in these two domains will be featured.

Dovie Kimmins
Middle Tennessee State University, Murfreesboro
Jeremy J. Winters
Middle Tennessee State University, Murfreesboro

215/216 (CONVENTION CENTER)

146
Promoting Mathematical Discourse: Mystery Bags, Speed Dating, and Cultural Context

(6–12) Burst

You will see, hear, and experience activities that engage diverse students in authentic mathematical discourse. Mystery Bags, Math Speed Dating, and Culturally Relevant Contexts have motivated students to "talk math" and deepen their understanding. You will learn about resources to get you started with implementing these effective strategies.

Mark W. Ellis
Board of Directors, National Council of Teachers of Mathematics; California State University, Fullerton
Susanna Meza
Valadez Middle School Academy, Placentia, California
Ruth H. Yopp
California State University, Fullerton

R02 (CONVENTION CENTER)

147
Real Math + Students = Engagement

(6–12) Burst

Finding ways to make math real can help students answer the question, "When am I ever going to use this?" Applications in careers can engage students in the study of mathematics. Get resources and the assignment that changed my teaching and my students' perspectives.

Nancy Norem Powell
Retired, Bloomington High School, Illinois

GRAND BALLROOM D (HILTON)

11:30 A.M.–12:00 P.M.

148
Using Virtual Manipulatives in an Algebra Class

(6–12) Burst

Students often struggle with algebra topics such as solving equations and polynomials. Learn how virtual manipulatives may be used to eliminate the frustration or anxiety involved when performing such tasks. Analyze creative solutions made possible by the dynamic nature of virtual manipulatives and how this can lead to teaching for understanding.

Martha Tapia
Berry College, Rome, Georgia

R04 (CONVENTION CENTER)

149
Doing Statistics with Real Biology Experimental Data

(9–12) Burst

In the interdisciplinary lesson presented in this session, statistics students collaborate with biology students to collect real data from a controlled experiment. See how students can do one-variable statistics with data collected from plants and also use a chi-squared test to analyze the distribution of certain plant traits.

Luke W. Wilcox
Kentwood Public Schools, Michigan

228/229 (CONVENTION CENTER)

150
Addressing the Mathematical Practices in Calculus

(9–12, Higher Education) Burst

The Standards for Mathematical Practice (SMP) in the Common Core align well with the goals of a calculus course. This talk will discuss the SMPs within the context of a college calculus 1 course and present the qualitative results from implementing a calculus activity that was designed with the SMPs in mind.

Mary E. Pilgrim
Colorado State University, Fort Collins

207 (CONVENTION CENTER)

151
Are They There Yet? Exploring the Standards for Mathematical Practice in the Written Curriculum

(Higher Education, Preservice and In-Service) Burst

We will provide an overview of data analysis conducted on one cluster of the content standards for mathematics at the kindergarten and first-grade levels to determine the presence of the Standards for Mathematical Practice (SMP). This information will help educators become more familiar with the SMPs and putting these into practice.

Katie Arndt
University of South Florida, Tampa
Lori Rakes
Florida Southern College, Lakeland
Jennifer Ward
University of South Florida, Tampa

211/212 (CONVENTION CENTER)

152
Blazing a Trail through the Common Core

(Higher Education, Preservice and In-Service) Burst

Explore how creating a math trail can support preservice teachers' understanding of the Common Core and its many connections to other content areas and the mathematical nature of our world. We will share examples of student-created math trails, reflection journals, and details of how this assignment was used in an elementary math methods course.

Heidi J. Higgins
University of North Carolina Wilmington
Tracy Y. Hargrove
University of North Carolina Wilmington

MAGNOLIA (HILTON)

11:30 A.M.–12:00 P.M.

153
iPad Quests for Functional Relations with Dynagraph

(Preservice and In-Service) Burst

Dynamic mapping through technology-based dynagraphs enables students to investigate functional relationships between numbers in domain (input variable) and numbers in range (output variable). This presentation demonstrates how teachers design and construct several types of dynagraphs for iPad and how they can implement questioning strategies.

Taehoon Choi
University of Iowa, Iowa City
Jihyun Hwang
University of Iowa, Iowa City
Laurentius A. Susadya
University of Iowa, Iowa City

240/241 (CONVENTION CENTER)

12:30 P.M.–1:30 P.M.

154
A Second Look at Mathematics and Science in Feature Films

(General Interest) Session

President's Series presentation

Feature films can engage students in topics related to science and mathematics in an entertaining way. However, some of the physics and mathematics involved in the action-adventure genre are not scientifically valid. This presentation will investigate problems in impulse, friction, magnetism, and electricity.

John C. Park
Baylor University, Waco, Texas

JEFFERSON BALLROOM (HILTON)

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155
Coaching Tips and Tools: Leading for Mathematical Proficiency

(General Interest) Session

Math coaching includes planning for professional learning. We will share coaching tips and tools to support this work! You will receive a set of tools related to (1) planning for professional development, (2) working with a range of teachers, and (3) working with professional learning communities. Participants will learn and rehearse several coaching skills.

Maggie B. McGatha
University of Louisville, Kentucky
Jennifer M. Bay-Williams
University of Louisville, Kentucky
Beth Kobett
Stevenson University, Baltimore, Maryland

GRAND BALLROOM C (HILTON)

156 PtA
Principles to Actions: Effective Teaching

(General Interest) Session

Since the release of the Professional Standards for Teaching Mathematics (1991) much has been learned about specific teaching practices that support students' learning of mathematics. This session will focus on describing a set of effective teaching practices and engaging participants in a discussion of how to help teachers learn to use them.

Margaret Smith
University of Pittsburgh, Pennsylvania

GREAT HALL B/C (CONVENTION CENTER)

157
Zombies, Vampires, Ghosts, and Other Problem-Solving Thrillers

(General Interest) Session

The Big Easy is famous for its mysteries, voodoo, cemeteries, and haunted history. Come, if you dare, and have fun with some engaging ghoulish adventures in problem solving. We'll also discuss some not-so-scary standards for mathematical practice along the way.

Nathan A. Borchelt
Western Carolina University, Cullowhee, North Carolina

245 (CONVENTION CENTER)

12:30 P.M.–1:30 P.M.

158
Using Number Talks to Develop Computational Fluency with Fractions

(General Interest) Session

The use of number talks to develop efficient, accurate, and flexible computation strategies with fractions will be explored. We will look at common student-invented strategies based on the Common Core State Standards and the use of the Mathematical Practices.

Sherry D. Parrish
University of Alabama at Birmingham
Ann M. Dominick
University of Alabama at Birmingham

GREAT HALL A/D (CONVENTION CENTER)

159 SJ
Promoting Equity through Teaching for a Growth Mindset

(General Interest) Session

Students' beliefs about mindset (as described in Carol Dweck's work) are hugely significant for mathematics learning and for the pursuit of equity and social justice. In this presentation, I will show the ways mathematics teachers, of any grade level, can teach for a growth mindset, including attention to pedagogical structures, tasks, assessment, grouping, and praise.

Jo Boaler
Stanford University, California

225/226/227 (CONVENTION CENTER)

160
Enhancing Mathematics Instruction with iPad Apps Aligned to CCSS

(Pre-K–2) Session

Come explore pre-K-2 mathematics apps. Learn how to identify iPad apps that enhance mathematics instruction and are aligned to the Common Core State Standards. Alignment tools will be identified as well as already evaluated math apps. Participants will be provided with the evaluation template as well as examples of apps previously aligned.

Selma Powell
University of Central Florida, Orlando

R03 (CONVENTION CENTER)

161
K–2 Pathway to Fractions: Coaches, Teachers, and Principals Changing Instruction Together

(Pre-K–2) Session

Learn how coaches, teachers, and principals agree on what students must know along the K–2 fraction pathway to understand third-grade Common Core fraction standards. Tools, resources, and activities are provided that explicitly show the opportunities students have in the K–2 learning progression to develop meaning for fraction concepts.

Janice Bradley
New Mexico State University, Las Cruces

MELROSE (HILTON)

162 LCR
Representing and Modeling Math Stories: Problem Solving with Young Children

(Pre-K–2) Session

Children love to solve problems *and* they love to create stories. In this session, the eleven different types of addition and subtraction stories will be introduced (e.g., part-part-whole, missing part or adding to, start unknown) through stories. Video clips of pre-K–2 classroom situations will be shown, as well as children's work samples.

Juanita V. Copley
University of Houston, Texas

R07 (CONVENTION CENTER)

163 LCR
Tiers, Not Tears, for Early Numeracy Support

(Pre-K–2) Session

Through the use of problem-solving situations, visual models, and genuine questioning, participants will learn how to meet the Common Core State Standards' Mathematical Practices and Content Standards in a Tier 2 and 3 setting with primary (or elementary) students. Come focus on numeracy development, progress monitoring, and Tier intervention time. No more tears!

Laurie Kilts
Natrona County School District #1, Casper, Wyoming
Pia M. Hansen
Math Learning Center, Salem, Oregon

214 (CONVENTION CENTER)

12:30 P.M.–1:30 P.M.

164
Creating Cultural Relevance in Teaching and Learning Mathematics

(Pre-K–5) Session

Good mathematics instruction makes connections to the real-world experiences of children. This session examines tasks, assessments, and discourse patterns that connect classroom mathematics to students' out-of-school practices. Come engage in mathematical tasks that allow your students to read and write their world through mathematics.

Cathery Yeh
University of California, Irvine

GRAND SALON 3–6 (HILTON)

165 LCR
Demystifying Multiplication and Division of Fractions

(3–5) Session

Learn how to improve student reasoning about multiplication and division with fractions through using a variety of contexts and online visual models. Discover strategies and questioning techniques to help students extend previous understandings with whole numbers to work with fractions. Student work, class experiences, and performance data will be shared.

Melissa Hedges
Mequon-Thiensville School District, Wisconsin
Connie Laughlin
University of Wisconsin–Milwaukee

R01 (CONVENTION CENTER)

166 LCR
Multiplicative Thinking with Arrays

(3–5) Session

Arrays are frequently used to help students explore multiplication and area, yet research indicates that students often find it very difficult to make sense of the array structure. We will present activities that we have successfully used to help students develop imagery for arrays and thus develop multiplicative thinking.

Anne Reynolds
Kent State University, Ohio
Sandra Trowell
Valdosta State University, Georgia

206 (CONVENTION CENTER)

167 10
Moving Learning Forward by Uncovering Student Thinking

(3–8) Session

Come learn about a variety of short, easy-to-administer diagnostic assessment probes and classroom techniques for formative assessment. Tasks are designed to uncover student misconceptions, engage and motivate students, activate thinking and promote metacognition, provide stimuli for mathematical discussion, and improve questioning and responses.

Cheryl Tobey
Education Development Center, Waltham, Massachusetts

BELLE CHASSE (HILTON)

168 LCR
What's a "Real" Context Anyway?

(3–8) Session

The Common Core State Standards posit that negative integers should be presented to students in "terms of everyday contexts (e.g., amounts owed or temperatures below zero)." Are these really everyday contexts for students? Tackle the hot topic of "real" contexts with negative integers. Compare and discuss both conventional and unconventional contexts!

Nicole M. Wessman-Enzinger
Illinois State University, Normal

223 (CONVENTION CENTER)

169
Exploring the Mean Absolute Deviation of Backpack Weights

(6–8) Session

Who tends to carry the heaviest backpacks, boys or girls? What grade level shows the most variability in the weight of the backpacks they carry? We will use the drag and drop tools (tables, graphs, and a ruler) found in TinkerPlots Dynamic Data Exploration software to develop the concept of the mean absolute deviation, as required in grades 6 and 7 by the Common Core.

Kathryn G. Shafer
Ball State University, Muncie, Indiana

GRAND SALON 9–12 (HILTON)

12:30 P.M.–1:30 P.M.

170
Representation and Visualization in Middle School: Lessons from Singapore

(6–8) Session

The Common Core State Standards emphasize the importance of representation in learning mathematics. In this session, we will share strategies for developing deeper understanding of rational numbers, ratio and rate, proportion, and algebraic expressions and equations with visual models from Singapore, with the goal of helping students make the challenging transition from arithmetic to algebra.

Andy Clark
Retired, Portland Public Schools, Oregon

ROSEDOWN (HILTON)

171
Teaching Ratio Conceptually with Tables, Ratio Boxes, and Daisy Chains

(6–8) Session

The Common Core in sixth grade means heavy-duty work with ratio and proportion: a major challenge that students must master for algebra success. A learning trajectory approach unpacks how students develop a robust ratio understanding. Join us to explore new tasks, models, and representations that support a strong coherent understanding of ratio and proportion.

Tamar Avineri
North Carolina State University, Raleigh
Jere Confrey
Amplify Learning, Durham, North Carolina

R09 (CONVENTION CENTER)

172
Teams in a Middle School Math Class? Go Figure!

(6–8) Session

In this session, three teachers will present cooperative learning strategies to increase engagement. By linking Common Core State Standards and school curricula to research-proven instructional strategies, teachers can empower students to work together to improve understanding, support English language learners and students with disabilities, raise math achievement, and close achievement gaps.

Gail R. Englert
Blair Middle School, Norfolk Public Schools, Virginia
Crystal Pope
Norfolk Public Schools, Virginia
Steven Thomas
Norfolk Public Schools, Virginia

ELMWOOD (HILTON)

173
Number Choices Really Do Matter! Teaching Proportions for Understanding

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

Proportional reasoning is an important strand in the Common Core State Standards for the middle grades. This session will explore the influence of number choices in posing and sequencing proportion problems to students. Sample problems will be shared. Classroom examples will highlight evidence of some of the Standards for Mathematical Practice.

Laura B. Kent
University of Arkansas, Fayetteville
Olof B. Steinthorsdottir
University of Northern Iowa, Cedar Falls

235/236 (CONVENTION CENTER)

Relax and mingle with other attendees, take advantage of free Wi-Fi to check your email, and stay connected in the BuzzHub Networking Lounge, located inside the Exhibit Hall

10 10-Minute Tasks · EW Exhibitor Workshop · L↔R Learn↔Reflect · NCTM Committee · NT New Teacher · PtA Principles to Actions · SJ Social Justice · CF Teaching Computational Fluency

174
Does This Line Ever Move? Use Polynomials to Find Out!

(6–12) Session

Polynomials are often presented without a context. The study of queueing (waiting in line) uses polynomials that can be explored in context. Participants in this session will graph, explore, and interpret polynomials that arise in queueing contexts and will use them to illustrate the difference between separate lines for multiple servers versus one shared line.

Kenneth R. Chelst
Wayne State University, Detroit, Michigan
Thomas G. Edwards
Wayne State University, Detroit, Michigan
S. Asli Özgün-Koca
Wayne State University, Detroit, Michigan

GRAND BALLROOM A (HILTON)

175
Easy as Two Plus Two?

(6–12) Session

Students know that 2 + 2 = 4 and 2 x 2 = 4. What if they are challenged to discover other number pairs that have an equal sum and product? This seemingly simple question leads to a rich problem-solving task that includes journeys in number sense, representations, functions, and modeling. This task connects many content areas and the Common Core's Mathematical Practices.

Bob Mann
Western Illinois University, Macomb
Kimberly K. Hartweg
Western Illinois University, Macomb

R05 (CONVENTION CENTER)

176
Advanced Quantitative Reasoning: Mathematics for the World around Us

(9–12) Session

In "Math Takes Time," NCTM says, "Every student should study mathematics every year through high school, progressing to a more advanced level each year." This talk presents problems typical seniors find engaging; connecting a wide range of mathematics, statistics, and modeling; and that leverage mathematical action technologies, thinking, and discourse.

Gregory D. Foley
OHIO.EDU, Athens, Ohio
Stephen W. Phelps
Madeira High School, Cincinnati, Ohio

GRAND SALON 21–24 (HILTON)

177
Change the Classroom, Not the Students: Attaining Equity Using PBL

(9–12) Session

This presentation will describe the results of a qualitative study of adolescent females and their experiences in a problem-based learning (PBL) classroom. Research shows that using more inclusive and relational pedagogies helps underrepresented students feel differently about mathematics and improves their feelings of empowerment and agency.

Carmel Schettino
Deerfield Academy, Massachusetts

GRAND SALON 13–16 (HILTON)

178
Core Math Tools: Building (+) Transitions to College Mathematics and Statistics

(9–12) Session

Examine how CCSS (+) standards in a transition to college mathematics and statistics are supported using NCTM's Core Math Tools. Discuss the strategic use of technology that emerges through this freely available suite of math apps that includes a spreadsheet, CAS, dynamic geometry, data analysis, and simulations.

Brin A. Keller
Michigan State University, East Lansing

242 (CONVENTION CENTER)

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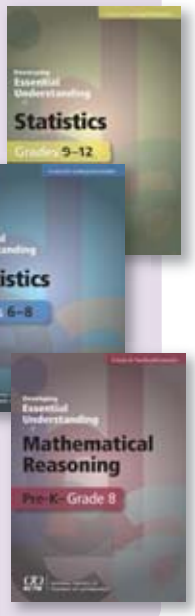

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Saturday	8:00 am – 12:00 pm

MORE NEW TITLES

NEW | Annual Perspectives in Mathematics Education (APME) 2014: Using Research to Improve Instruction

AMY ROTH MCDUFFIE, SERIES EDITOR

KAREN KARP, ISSUE EDITOR

The inaugural issue of *Annual Perspectives in Mathematics Education (APME)* will focus on using research findings to make a difference for Pre-K–16 students' learning by improving instructional practices in classrooms.

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NEW SERIES: Success from the Start

The Essential Guide to Succeeding in Your First Years of Teaching Mathematics

Meet the authors in the bookstore! Check Daily News for time.

NEW | Success from the Start: Your First Years Teaching Elementary Mathematics

BY KATHY ERNST AND SARAH RYAN

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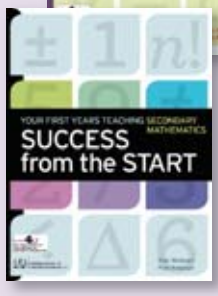

NEW | Success from the Start: Your First Years Teaching Secondary Mathematics

BY ROB WIEMAN AND FRAN ARBAUGH

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NEW | MET Cookbook

With recipes from MET volunteers, NCTM board members, members, staff and more, this book adds up to a tasty serve.

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FRANCES CURCIO, SERIES EDITOR

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12:30 P.M.–1:30 P.M.

179
Using Video to Research and Improve Teaching

(9–12) Session

This session will outline the process used and lessons learned by one high school mathematics teacher and his colleagues to improve his teaching over a four-year time frame. Two short teaching segments showing groups of students engaged in analyzing problems will be viewed and briefly analyzed.

Beth E. Ritsema
Western Michigan University, Kalamazoo

JASPERWOOD (HILTON)

180
What Does the Brain Do with All That Math?

(9–12) Session

Why do we find ourselves re-teaching basic concepts at various stages of mathematical development, and how can we help students learn toward mastery? This session will explore current brain research and provide insights into how we can make instruction more effective and increase student retention of mathematics.

Carolyn B. Williamson
The Carmel School, Ruther Glen, Virginia

GRAND SALON 19–22 (HILTON)

181 LCR
Matrices in Action

(9–12, Higher Education) Session

Learn about the many ways that matrices can be used to represent networks and systems and to manage information created. The use of technology (including graphics calculators) to manage matrix powers and Markov chains and to investigate the use of matrices in areas such as cryptography and food webs will be presented.

Brett S. Stephenson
Guilford Young College, Glenorchy, Australia

243 (CONVENTION CENTER)

182
Supporting STEM Teaching and Learning through Communities (S2TLC)

(Higher Education, Preservice and In-Service) Session

Twenty pairs of master teachers and intern teachers working in high need schools have embarked on a six-year journey focusing on (1) communities of practice; (2) teacher learning, research, leadership, and mentoring; (3) preservice teacher curriculum; and (4) culturally responsive teaching. Successes, challenges, and lessons learned will be discussed.

Sandra R. Madden
University of Massachusetts Amherst

230 (CONVENTION CENTER)

182.1 EW
Pearson

(General Interest) Exhibitor Workshop

Come hear the latest from Pearson!

Pearson
Upper Saddle River, New Jersey

219 (CONVENTION CENTER)

182.2 EW
Reaching and Teaching All Levels of Learners with Singapore Math

(Pre-K–5) Exhibitor Workshop

This session will focus on strategies to reach the struggling student. Specifically, we will explore use of the CPA cycle, transition materials, and the analysis of student assessments in meeting the needs of underachieving students.

Houghton Mifflin Harcourt
Boston, Massachusetts

208 (CONVENTION CENTER)

12:30 P.M.–1:30 P.M.

182.3 EW
Singapore Math® Program for MiddleSchool. Crossing the Bridge to Algebra!

(6–8) Exhibitor Workshop

Middle school math often takes a backseat to elementary and high school mathematics. Dimensions Math Common Core Edition is a new series that is changing that trend. Picking up where our elementary series leaves off, this Singapore Math® middle school program fully prepares students for success in advanced high school math.

Singapore Math Inc
Tualatin, Oregon

218 (CONVENTION CENTER)

182.4 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 grades 6–algebra 2 (option for high school Integrated I–III). Receive free copies of CPM's entire Core Connections series.

CPM Educational Program
Sacramento, California

209 (CONVENTION CENTER)

182.5 EW
When Are Graphs a Picture? When You Make Them So!

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

In this workshop, we discuss how to use the HP Prime Advanced Graphing app to teach transformations in the plane, including translations and reflections. But instead of a geometric approach, the app allows us to take an algebraic approach. We start with a generic non-function graph and transform it in various ways to build a picture of a rose.

Hewlett-Packard
Fort Collins, Colorado

FOUNTAIN ROOM (HILTON)

1:00 P.M.–2:15 P.M.

183
Get Real with Authentic Tasks and CCSSM

(Pre-K–2) Gallery Workshop

Teachers will explore ways of engaging students in mathematics. A short video of students working with a number line to share their understanding of numbers will be watched. Ideas for meeting the needs of the students and the Common Core State Standards for Mathematics (CCSSM) will be discussed. Teachers will participate in a quick math routine and a task to develop students' number sense.

Rick E. O'Driscoll
Uinta County School District #1, Evanston, Wyoming
Kimber Fessler
Uinta County School District #1, Evanston, Wyoming

GRAND SALON 4–7–10 (HILTON)

184
Let's Make 10, 100, and Numbers in the Middle

(Pre-K–2) Gallery Workshop

Participants will make and use 10-frames, Rekenreks, and number lines to make sense of decomposing and composing numbers to become fluent in addition and subtraction. Activities to help students transition from fact fluency to number sense with larger numbers will be shared.

Deborah Donovan
Educational Resources Group, Inc, Charleston, South Carolina

OAK ALLEY (HILTON)

185
So, Here's the Story: Multiple Representations Using Picture Books

(Pre-K–2) Gallery Workshop

Dynamic and exciting picture books invite and motivate children to learn mathematics concepts by creating multiple representations in their response to stories, characters, and experiences in storybooks. By promoting children to be "active thinkers," they learn mathematics by forming relationships, making connections, and integrating concepts.

Lynn Columba
Lehigh University, Bethlehem, Pennsylvania
Megan Stotz
Lehigh University, Bethlehem, Pennsylvania

228/229 (CONVENTION CENTER)

1:00 P.M.–2:15 P.M.

186
The Core of Number Sense

(Pre-K–2) Gallery Workshop

Do you ever feel that the more you learn the less you know about number sense? Then you need to attend this session! You will experience number sense concepts that will push you to rethink how you respond to students' thinking and misconceptions. Key ideas include: subitizing, units, conservation, transitivity, iteration, magnitude of number, and cardinality.

Debbie M. Thompson
Wichita Public Schools, Kansas
Toni Osterbuhr
Wichita Public Schools, Kansas
Lynette R. Sharlow
Wichita Public Schools, Kansas

240/241 (CONVENTION CENTER)

187
Math Specialists: *The* Assessments Are Here—Now What?

(Pre-K–5) Gallery Workshop

Come prepared to consider the PARCC and Smarter Balanced sample test items as organizers to assist in the creation of instructional activities and formative assessments that will highlight prerequisite concepts and skills, deepen understanding, and extend mathematical thinking. This session is all about connecting instruction with assessment.

Francis (Skip) Fennell
Past President, National Council of Teachers of Mathematics; McDaniel College, Westminster, Maryland
Jon Wray
Board of Directors, National Council of Teachers of Mathematics; Howard County Public Schools, Ellicott City, Maryland
Beth Kobett
Stevenson University, Baltimore, Maryland

NAPOLEON BALLROOM (HILTON)

188
Fractions on the Number Line with Embedded Student Discourse Strategies

(3–5) Gallery Workshop

How do we take our students beyond procedures and a surface-level understanding of fractions? Join us for conceptual activities focused on fractions and the number line as defined by the Common Core. Participants will be engaged through the use of manipulatives, hands-on activities that are classroom ready, and discourse strategies to support language development.

Janna Canzone
University of California, Irvine
Karajean Hyde
University of California, Irvine
Kris Houston
University of California, Irvine

GRAND BALLROOM D (HILTON)

189
Making Sense of Fractions through Pattern and Deci-Blocks™

(3–5) Gallery Workshop

During this session, attendees will participate in hands-on activities using pattern blocks and Deci-Blocks™ to gain a deeper understanding of number sense with fractions. Specific topics covered include basic fraction number sense, as well as adding and subtracting fractions.

Ann Wheeler
Texas Woman's University, Denton

207 (CONVENTION CENTER)

Don't miss the Opening Session on Wednesday evening with featured speaker Steven Strogatz

1:00 P.M.–2:15 P.M.

190
Mathematical Rigor through Core Practices and Classroom Games

(3–5) Gallery Workshop

The Common Core content, as reinforced by the Standards for Mathematical Practices, 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 to build connections and conceptual knowledge.

Ted H. Hull
LCM: Leadership, Coaching, Mathematics, Pflugerville, Texas
Ruth Harbin Miles
Board of Directors, National Council of Teachers of Mathematics; Falmouth Elementary School, Stafford, Virginia
Don S. Balka
TODOS: Mathematics for All; Saint Mary's College, Notre Dame, Indiana

238/239 (CONVENTION CENTER)

191
Playing with Place Value

(3–5) Gallery Workshop

Place-value concepts will be presented using games to teach, reinforce, and remediate students. These games provide fun ways to write numbers in expanded and standard form, order and compare whole and decimal numbers, and strategically place digits to develop a better understanding of place value through problem solving and mathematical reasoning.

Kathie O. Smart
University of Louisiana at Monroe
Pamela Martin
University of Louisiana at Monroe

217 (CONVENTION CENTER)

192
Free Apps and Games That Motivate Mastery of Mathematical Practices

(3–8) Gallery Workshop

Enliven your classroom by promoting reasoning and sense making while developing game strategy. NCTM's free online games and mobile apps are perfect for you to demonstrate key content topics and for your students to investigate mathematical conjectures on their own. We will use both physical manipulatives and online/mobile tools.

Sarah DeLeeuw
National Council of Teachers of Mathematics, Reston, Virginia
Ann Kong
National Council of Teachers of Mathematics, Reston, Virginia

211/212 (CONVENTION CENTER)

193
Show Me Your Math: Culturally Based Mathematics Inquiry Units

(3–8) Gallery Workshop

Drawing from Mi'kmaq culture in Atlantic Canada, a series of inquiry units were developed to explore the math of quill boxes, birch bark biting, language loss, paddle making, and more. In this workshop, participants will learn about these culturally based units and engage in hands-on tasks to explore concepts of geometry, fractions, and proportional reasoning.

Lisa A. Lunney Borden
St. Francis Xavier University, Antigonish, Canada

215/216 (CONVENTION CENTER)

194
Teaching Rationally: Developing Understanding of Fraction Operations

(3–8) Gallery Workshop

What does it mean to divide two fractions? And why do we invert and multiply? This session will focus on understanding the meaning of operations on fractions, extending students' knowledge of whole number operations to rational numbers, and using a variety of manipulatives to visualize these operations.

Mary Pat Sjostrom
Chaminade University, Honolulu, Hawaii

R02 (CONVENTION CENTER)

195 10
How Can "10-Minute Tasks" Change My Classroom?

(6–8) Gallery Workshop

See how short, rich mathematical tasks can inform a teacher of student understanding and guide the instructional flow. Demonstrations will include using tasks at the beginning of a lesson to guide the lesson, in the midst of a lesson to adjust it, and at the end of the lesson as a formative assessment of what students have learned.

Edward C. Nolan
Montgomery County Public Schools, Rockville, Maryland

GRAND BALLROOM B (HILTON)

196
How to "Guess Who?": Incorporating Probability Concepts with Games

(6–8) Gallery Workshop

Games, toys, and manipulatives can be used to help students learn probability and statistics concepts. This workshop highlights how teachers can use games such as Pass the Pigs or Guess Who? and toys such as Barbies to engage students in mathematical concepts. Attendees will engage in the activities and see how to incorporate them into the classroom.

Michael Daiga
Indiana University, Bloomington
Crystal Marie Vesperman
Indiana University, Bloomington

221/222 (CONVENTION CENTER)

197
Teach Operations with Fractions through Kinesthetic and Visual Learning Principles

(6–8) Gallery Workshop

Fractions can be difficult for students. This presentation will demonstrate a repertoire of easy-to-learn movements, rhythms, and visualization games that can boost students' confidence and reinforce understanding of equivalency and operations with fractions.

Andrea B. Thies
National Math Foundation, Ithaca, New York

VERSAILLES (HILTON)

198
Building Puzzles: Promoting Engagement, Logical Reasoning, and Mathematical Communication

(6–12) Gallery Workshop

Mathematical puzzles support problem solving, algebraic reasoning, and the Common Core's first Standard for Mathematical Practice ("Make sense of problems and persevere in solving them"). Students enjoy the challenges of problem solving and learn to organize the given information with their own discoveries. Discover how students become producers of mathematics as they build their own mathematical puzzles to share.

Mary K. Fries
Education Development Center, Waltham, Massachusetts
Jane M. Kang
Education Development Center, Waltham, Massachusetts
E. Paul Goldenberg
Education Development Center, Waltham, Massachusetts

GRAND SALON 15–18 (HILTON)

199
Algebra II and Trigonometry: Wrap Your Brain and Hands Around It!

(9–12) Gallery Workshop

Participate in some fun, quick activities to engage you and your students. Discover how simple things like M&Ms, toothpicks, paper plates, patty paper, rope, movement, and singing will spice up your teaching and help your kids retain what they learn. Wrap your brain and hands around several activities including the Trig hand jive.

Gary Kubina
Retired Math Teacher, Mobile, Alabama

MAGNOLIA (HILTON)

200
Common Core Statistics: What Non-Statisticians Should Know

(9–12) Gallery Workshop

The Common Core State Standards encourage us to teach statistical ideas in our high school math courses. Many of these ideas will be unfamiliar to teachers who are not well versed in statistics. In this session, we will carry out simulations that you can use in the classroom and will discuss how they can help students understand important statistical concepts.

Julie L. Graves
North Carolina School of Science and Mathematics, Durham

203/204/205 (CONVENTION CENTER)

1:00 P.M.–2:15 P.M.

201
Making Mathematics Culturally Relevant to Students Using Problem-Based Learning

(9–12) Gallery Workshop

Have you ever heard your students say, "This doesn't apply to me?" This session will counter this common statement. Come and experience a problem-based lesson that infuses students into mathematics as well as learn a planning process that will support future implementation of problem-based learning in the classroom.

Audrea K. Bankston
Graduate Student, Georgia State University, Atlanta
Courtney Lewis
Carnegie Learning, Pittsburgh, Pennsylvania

R08 (CONVENTION CENTER)

202
Polygon Potpourri: Investigations in Geometry

(9–12) Gallery Workshop

Donut polygons, star polygons, concave polygons, cyclic polygons, and ciphers with polygons. 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
Self-Employed Consultant, San Francisco, California

R06 (CONVENTION CENTER)

203
Tactile Trigonometry: A Hands-On and Technology-Focused Approach

(9–12) Gallery Workshop

Radian Reeses? Spaghetti sine curves? Cosine tide patterns? Come experience new approaches in presenting trigonometry topics from radian measurement and right triangles to graphs and the law of sines. We will send you back to school on Monday ready to reach a classroom full of diverse learners using hands-on labs and technology-based projects.

Amy Gersbach
Seneca High School, Tabernacle, New Jersey
Ingrid Williams
Shawnee High School, Medford, New Jersey

244 (CONVENTION CENTER)

204
An Introduction to TI-84 Calculator Programming Using the TI-BASIC Programming Language

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

In this interactive session, attendees will learn how to program the TI-84 Plus Silver Edition graphing calculator to quickly solve a formula-based problem. Participants will then create programs on their TI-84, using the TI-BASIC programming language features that are built into the calculator, and test their results.

John L. Isaacs
Huber Heights City Schools, Ohio

210 (CONVENTION CENTER)

205
Infusing Social Media into the Mathematics Classroom

(Preservice and In-Service) Gallery Workshop

The majority of students' time is spent outside of the classroom. During this time students are engaged with their peers through different forms of technology, which include various social media networks. We will explore how teachers can tap into that interest and level of engagement and incorporate it in the mathematics classroom.

Kristopher Childs
University of Central Florida, Orlando
Vernita Glenn-White
University of Central Florida, Orlando

R04 (CONVENTION CENTER)

Make time to explore the **Exhibit Hall** for the latest educational resources

10 10-Minute Tasks · EW Exhibitor Workshop · L↔R Learn↔Reflect · NCTM Committee · NT New Teacher · PtA Principles to Actions · SJ Social Justice · CF Teaching Computational Fluency

206

Fluency … It's More Than Fast and Accurate

(General Interest) Session

Rote memorization through drill and practice does not lead to fluency. Let's look at ways we can help students use strategic thinking that develops to fluency through reasoning and sense making.

Linda M. Gojak
President, National Council of Teachers of Mathematics;
John Carroll University, University Heights, Ohio

GREAT HALL A/D (CONVENTION CENTER)

207

Online PD Resources for Mathematical Practices: Seeing Structure and Generalizing

(General Interest) Session

The speaker will share one unit of a free online professional development (PD) course offered for teachers that supports students becoming proficient in the Standards for Mathematical Practice #7 (seeing structure) and #8 (generalizing). This presentation will include engaging discussions, videos, and problems. Grade-level specific examples will be provided across all grade bands.

Joanne Rossi Becker
San José State University, California

GRAND BALLROOM A (HILTON)

208

Support Students' Reasoning and Sense Making in the Classroom and Beyond

(General Interest) Session

This session presents teacher moves and instructional tasks that support students as they build personal mathematical practices to carry through life. Help your students build and apply mathematical thinking in approaching new situations, in parallel to building their collection of mathematical structures, facts, relations, and routines.

Henry S. Kepner
Past President, National Council of Teachers of Mathematics;
University of Wisconsin–Milwaukee

245 (CONVENTION CENTER)

209

Building Flexible Thinking into the Curriculum

(Pre-K–2) Session

What strategy would you use to solve 43 – 37? Come hear about instructional strategies developed to help students think more flexibly about addition and subtraction. Areas of discussion include the interplay between conceptual models and algorithms and the teaching of varied strategies to meet the problem demand and support students' needs.

Jennifer Mundt Leimberer
University of Illinois at Chicago

R09 (CONVENTION CENTER)

210

Tools and Activities for Number and Operations

(Pre-K–2) Session

Are you looking for tools and strategies to help your students develop a deeper understanding of mathematics? Come and learn about the essential knowledge and skills students need to improve their understanding of mathematics and the simple tools you can use to help build that understanding.

Dawn M. Dibley
Independent School District 196, Rosemount, Minnesota

223 (CONVENTION CENTER)

2:00 P.M.–3:00 P.M.

211 LCR
Using Language to Develop Operation Concepts and Problem Solving

(Pre-K–2) Session

Success with problem solving begins with understanding concepts. In particular, students need to understand operations and be able to solve a range of problems. This session will demonstrate how language can be used to develop meaning. As they explore the contexts, students are using their own language to vary situations to explore problem types.

Rosemary R. Irons
Early Childhood Mathematics Consultant, Brisbane, Australia

243 (CONVENTION CENTER)

212
Building Mathematical Communities: Fostering Persistent Learners

(Pre-K–5) Session

Mathematical communities provide rich environments for developing deep understandings. In these classrooms, reflection and communication thrive. This session uses video clips to explore how to develop students with a growth mind-set and the attitudes and skills necessary for engaging in and learning mathematics effectively.

Amy Mayfield
Math Solutions, Sausalito, California
Patty Clark
Math Solutions, Sausalito, California

GRAND SALON 9–12 (HILTON)

213 LCR
Making Reasoning Integral to Instruction Focused on Number and Operations

(Pre-K–5) Session

This session focuses on key issues surrounding effectively teaching number and operations. Examples provided from classroom instruction will respond to the Common Core recommendation for a "balanced combination of procedure and understanding" and the Common Core caution that "students who lack understanding of a topic may rely on procedures too heavily."

Marilyn Burns
Math Solutions, Sausalito, California

GREAT HALL B/C (CONVENTION CENTER)

214 LCR
Fluency Problems? The Distributive Property to the Rescue!

(3–5) Session

As we move toward national assessments, achieving fluency in multiplication is essential for all students. Bring excitement into your classroom with these concrete, pictorial, and abstract lessons on the distributive property that focus on fluency and deep conceptual understanding. Come share in the fun and explore ways to teach beyond procedures—and make your job easier!

Leslie Marrie Lasater
MC² Math Consultants; Middle Tennessee State University, Murfreesboro

R01 (CONVENTION CENTER)

215 LCR
Why Divide?

(3–5) Session

As division is introduced, students are required to interpret quotients and remainders as well as to consider both measurement and partitive division situations. Through video clips and student work, this session will focus on the subtle, yet important, differences between these two division situations and how to help students interpret remainders.

Zachary Champagne
Florida Center for Research in Science, Technology, Engineering, and Mathematics (FCR-STEM), Tallahassee
Michael Flynn
Mount Holyoke College, South Hadley, Massachusetts

235/236 (CONVENTION CENTER)

216
Contributing to a Culture of Coaching for Number and Operations

(3–8) Session

Coaching is a collaborative process for increasing teacher effectiveness and student achievement. This session will help teachers, coaches, and administrators understand how a culture of coaching enhances mathematics teaching and learning by providing clear criteria and expectations for coaching and suggestions for being good consumers of coaching.

John Sutton
RMC Research Corporation, Denver, Colorado

BELLE CHASSE (HILTON)

217

Fractions: Making Sense of the Progression

(3–8) Session

Few topics in mathematics have attracted as much effort with so little result as fractions. By starting with unit fractions and equivalent fractions, and by using the Standards for Mathematical Practice, students see the coherence of fractions with whole number arithmetic, extend their prior knowledge and prepare for algebra, instead of taking a grand detour.

Phil Daro served on the writing team of the Common Core State Standards for Mathematics. He is the lead designer, mathematics, for the Common Core System of Courses being developed by the Gates Foundation and the Pearson Foundation. He also leads a partnership of the University of California, Stanford University, and others with the Oakland and San Francisco Unified School Districts for the Strategic Education Research Partnership (SERP) that focuses on mathematics and science learning among students learning English or developing academic English. Previously, he was a senior fellow for Mathematics for America's Choice and executive director of the Public Forum on School Accountability.

Philip Daro
Pearson, Berkeley, California

GRAND BALLROOM C (HILTON)

218

Keep Calm and Do Mental Math!

(6–8) Session

Put that pencil down, and use mental math! This session focuses on how to implement mental math by intentionally selecting problems that develop flexible thinking, increase classroom discourse, and support the Common Core's content and Mathematical Practice standards. This session includes student samples and tips to embed into your instruction now!

Jane M. Placencia
Cartwright School District No. 83, Phoenix, Arizona
Tracy E. Cartwright
Cartwright School District No. 83, Phoenix, Arizona

GRAND SALON 13–16 (HILTON)

219

Manipulate Your Way to Proportional Reasoning!

(6–8) Session

See how manipulatives can be a wonderful resource in developing proportional reasoning for your students! Discover why they are so powerful as well as see how a variety of traditional and virtual manipulatives can be used to develop this important concept.

Kevin Dykema
Mattawan School District, Michigan

GRAND SALON 3–6 (HILTON)

220

Reasoning in the Middle Grades: It's Easier Than You Think

(6–8) Session

Mathematical reasoning is not only one of the NCTM process standards, but it is also an important practice in the Common Core. This session will share several strategies from both the Singapore and U.S. perspectives on modifying non-geometrical textbook tasks and questions to bring reasoning to the instructional forefront.

Berinderjeet Kaur
National Institute of Education, Singapore
Denisse R. Thompson
University of South Florida, Tampa

242 (CONVENTION CENTER)

221

Finding the Missing Pieces: Middle Grades Fractions

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

Are your students missing key pieces of fractional reasoning? Content shifts in the Common Core may leave many students with gaps in their conceptual understanding of fractions. This session will focus on strategies and resources to embed fractional reasoning while maintaining the rigor and relevance required in your grade's Common Core State Standards.

Jeanne Simpson
Alabama Math, Science, and Technology Initiative; University of Alabama in Huntsville

225/226/227 (CONVENTION CENTER)

2:00 P.M.–3:00 P.M.

222
A Funny Thing Happened on the Way to the Formula

(6–12) Session

Humor can keep students' attention and reduce their stress, but it can also be a tool to motivate and illuminate mathematical understanding. Explore the connection between mathematics and humor with topics that include proofs, numbers, and function transformations. Learn why math jokes can be more than just puns.

Martin Funk
New Trier High School, Winnetka, Illinois
Steve Viktora
New Trier High School, Winnetka, Illinois

JEFFERSON BALLROOM (HILTON)

223
Get Their Attention! Get Them Engaged!

(6–12) Session

In order to have success in the mathematics classroom, teachers must gain their students' attention and make them into engaged learners. Several ideas for getting attention will be presented, such as math magic, paper folding, and illusions with geometry, and these will be connected to relevant mathematical topics.

Nancy J. Warden
University of Science and Arts of Oklahoma, Chickasha

214 (CONVENTION CENTER)

224
Inspire Your Students with the TI-Nspire CAS iPad App

(6–12) Session

Make the learning process happen more seamlessly by embracing the TI-Nspire CAS iPad app. In this session you will learn the nuts and bolts of the app as well as how to create your own simulations and access resources. Simulations that will be presented include trigonometric graphs and transformations of most functions.

Gus Elmashni
Sacred Heart Schools, Atherton, California

R07 (CONVENTION CENTER)

225
Instructional Strategies for Students Who Are Struggling in Mathematics

(6–12) Session

Teachers must not only have mathematical content knowledge, they must also have knowledge of instructional strategies to effectively help learners who struggle in mathematics. In this session, we discuss a variety of research-based instructional strategies you can use in the classroom to help students who are struggling in mathematics.

Christa Jackson
University of Kentucky, Lexington
Margaret Mohr-Schroeder
University of Kentucky, Lexington
Craig Schroeder
Fayette County Public Schools, Lexington, Kentucky

206 (CONVENTION CENTER)

226
This Is Radical (and Irrational)!

(6–12) Session

Geometry provides a rich source of problems dealing with radicals and irrational numbers. Participants in this session will be led through two main activities that focus on these important concepts with some amazing and radical results. Everyone will also receive copies of these ready-to-use activities, which are linked to the Common Core State Standards.

Clifton Wingard
Delta State University, Cleveland, Mississippi

GRAND SALON 21–24 (HILTON)

227
Turn Routine Algebra Exercises into Common Core Practice Tasks

(6–12) Session

Discover ideas for turning algebra exercises from today's textbooks into group-worthy tasks that engage students in common core practices. See examples of ways to convert routine exercises into good group discussions and how to "unscaffold" problems in order to engage students in the thinking and reasoning through "pocket" questions.

Judith M. Kysh
San Francisco State University, California

ELMWOOD (HILTON)

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2:00 P.M.–3:00 P.M.

228
AP Calculus: Recent Themes and College Dreams

(9–12) Session

This session will focus on the grading of the free-response questions for the AP Calculus exams. Basic exam background information will be provided followed by observations and exam recommendations. Other topics include recent themes, scoring guidelines, reading lingo, scoring conventions, and common student errors.

Stephen Kokoska
Bloomsburg University, Pennsylvania

R03 (CONVENTION CENTER)

229
Transforming Geometry for Tomorrow's Classroom

(9–12) Session

We did it all! We flipped our geometry class using iPads. We spent class time doing small-group activities, ones that demanded critical thinking and collaboration to solve problems. We used formative assessments to differentiate instruction, and we implemented the Common Core. Our instruction is still meaningful, still rigorous, but now reaches all students. Find out what worked and what didn't.

Shawn W. Trotter
Park County School District #6, Cody, Wyoming
Kelly Phelan
Park County School District #6, Cody, Wyoming

R05 (CONVENTION CENTER)

230
Using Social Networks to Teach Graph Theory

(9–12) Session

Investigate ways to introduce and explore concepts of graph theory and discrete math through social networks. Drawing on the proliferation of social networking and tools for describing social networks, a series of activities that excites students with important and genuine real-world applications will be presented.

Todd A. Abel
Appalachian State University, Boone, North Carolina

ROSEDOWN (HILTON)

231
Tablet PC: Superior Technology for ELLs and Struggling Students

(9–12, Higher Education) Session

Using a tablet PC as a blackboard, students with diverse needs can learn mathematics, interact in class, and get ongoing support at home. I will demonstrate this wonderful tool and offer some of my own research results on students who did not succeed the first time in calculus. Discover how a tablet can benefit English language learners (ELLs), struggling students, and struggling teachers.

Angela Thompson
Governors State University, University Park, Illinois

JASPERWOOD (HILTON)

232
The Mathematics of Casino/Hotel Management

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

Participants will experience a well-structured mathematical modeling activity around the mathematics of quadratics and differentiation that integrates the eight Standards for Mathematical Practice. Student work from the modeling activity will be discussed along with a website for more such activities.

Micah Stohlmann
University of Nevada, Las Vegas
Cathrine Maiorca
University of Nevada, Las Vegas
Travis Olson
University of Nevada, Las Vegas

MELROSE (HILTON)

233
Productive Mathematics Tasks in a Common Core Classroom

(Preservice and In-Service) Session

Developing and implementing tasks designed to engage all learners in rigorous mathematics can be challenging. We will share tasks and strategies developed over several years of a summer school laboratory class for upper elementary students. Video and other artifacts will be presented to illustrate the purposes and benefits of particular tasks.

Nicole Garcia
University of Michigan, Ann Arbor
Michaela Krug O'Neill
University of Michigan, Ann Arbor
Lisa Pasek
University of Michigan, Ann Arbor

GRAND SALON 19–22 (HILTON)

234
Using Student Work in the Preparation of Preservice Teachers

(Preservice and In-Service, Research) Session

This session will present analyses of student work and thinking that were used in a university course for prospective teachers as a possible intervention for effectively developing mathematical content knowledge and beliefs. The theoretical framework, intervention development, mixed method results, and implications of this research project will be shared.

Rich Busi
University of Florida, Gainesville
Tim Jacobbe
University of Florida, Gainesville

230 (CONVENTION CENTER)

234.1 EW
Personalized Instruction through ALEKS

(General Interest) Exhibitor Workshop

Explore an artificial intelligence that will monitor your students learning and help ensure success and progress for all students. ALEKS is an adaptive math program that helps school embrace personalized learning and data-driven instruction. Learn more about the program in your secondary classroom and register to win a subscription for your class.

McGraw-Hill Education
Columbus, Ohio

219 (CONVENTION CENTER)

234.2 EW
Add Meaning to the Math with Real World Problem Solving

(Pre-K–5) Exhibitor Workshop

Discover ways to engage students and help develop a better understanding of how math is used in the real world with MH My Math Real World Problem-Solving Investigations, leveled readers, and pre-lesson videos. Interactive SEs help students better understand how the concepts they learn will help them in the world they live in now, and in the future.

McGraw-Hill Education
Columbus, Ohio

218 (CONVENTION CENTER)

234.3 EW
Beyond Words: Teaching the Language of Common Core Mathematics

(3–5) Exhibitor Workshop

The mastery of essential mathematics vocabulary is critical for student achievement in the Common Core. In this session we will share products, strategies, activities, and games to reinforce and enhance Common Core mathematics through critical thinking. Empower your students to speak the language of mathematics!

Mentoring Minds
Tyler, Texas

FOUNTAIN ROOM (HILTON)

234.4 EW
Math Upgrade Common Core Lessons Using Songs, Video, and Games1

(3–8) Exhibitor Workshop

Math Upgrade features musical, high-interest lessons covering all Common Core State Standards for grades 1–8. Find out how teachers can transform their classes using interactive whole-class lessons and individual online courses. Learn how students with special needs and below basic skills can master the Common Core curriculum.

Learning Upgrade LLC
San Diego, California

208 (CONVENTION CENTER)

234.5 EW
Common Core–Aligned Curriculum for the Algebra I Classroom

(6–12) Exhibitor Workshop

Learn how the new edition of *Discovering Algebra* supports all students through engaging investigations that fully address the CCSS mathematical practice and content standards. Available in digital and print formats, the curriculum exemplifies the careful balance of conceptual and procedural understanding that Common Core implementation requires.

Kendall Hunt Publishing Company
Dubuque, Iowa

209 (CONVENTION CENTER)

2:45 P.M.–4:00 P.M.

235
Teaching Numbers and Operations with Real Literature Connections

(Pre-K–2) Gallery Workshop

This workshop will provide attendees with hands-on experiences integrating manipulatives and children's literature. The activities will be designed to creatively enhance the teaching of numbers and operations at the pre-K–2 level. Additionally, there will be a discussion of how each activity meets Common Core State Standards.

Maria Diamantis
Southern Connecticut State University, New Haven
Adam Goldberg
Southern Connecticut State University, New Haven

244 (CONVENTION CENTER)

236
Using Number Tracks to Promote Flexible Thinking in Problem Solving

(Pre-K–2) Gallery Workshop

Number tracks (concrete number lines) help students explore equality and solve contextual problems. This session will focus on how children can use this flexible tool to understand equality, numbers, place value, and word problems. Participants will receive lesson and game ideas, as well as ways to facilitate the Standards for Mathematical Practice.

Allison J. Davis
Chandler Unified School District, Arizona

OAK ALLEY (HILTON)

237
Exploring What's Behind Test Scores: Examining a CGI Assessment

(Pre-K–5) Gallery Workshop

In order to support teachers in developing high-quality practices, math educators created and implemented an assessment to analyze students' mathematical thinking across kindergarten–grade 5. This session explores the six-item assessment, examines the results in one low-performing school, and considers how teachers used results to make instructional decisions.

Elham Kazemi
University of Washington, Seattle
Lynsey K. Gibbons
University of Washington, Seattle

GRAND BALLROOM D (HILTON)

238
Let's Explore the Common Core with Math on the Floor!

(Pre-K–5) Gallery Workshop

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

Wendy Ellen Hill
Retired Elementary Teacher, Mississauga, Ontario, Canada

203/204/205 (CONVENTION CENTER)

239
Fraction Fun: Games That Cement Critical Concepts

(3–5) Gallery Workshop

Frustrated that your students don't retain fraction concepts? Do they make common errors? Singapore teaches us the importance of the consolidation phase of learning—playing games! When students play, they move learning into long-term memory. We'll use dice, cards, and commonly found materials to reinforce concepts that align to the Common Core State Standards.

Ricky Mikelman
SDE: Staff Development for Educators, Peterborough, New Hampshire

211/212 (CONVENTION CENTER)

240 CF
Number Operations, Problem Solving, Critical Thinking—Make the Connections!

(3–5) Gallery Workshop

Learning the "why," "when," and "how" of number operations will lead to a better understanding of the "what" to do. Knowing only "what" to do may help in computing, but it is ineffective unless one can apply those strategies, approaches, and solutions in situations that require problem solving and critical thinking. See what you can do with students in grades 3–5!

Wendy L. Klassen
University of British Columbia, Kelowna, Canada

GRAND SALON 15–18 (HILTON)

2:45 P.M.–4:00 P.M.

241
From Concrete to Abstract: Understanding Functions through Growing Patterns

(3–8) Gallery Workshop

Long before they begin a course in algebra, students can reason about functions with growing patterns. The physical structure of a pattern of objects such as blocks or tiles can be used to understand functional relationships, constants, and variables. We will explore characteristics of growing pattern tasks and instruction that provide access for all students.

Kim A. Markworth
Western Washington University, Bellingham

238/239 (CONVENTION CENTER)

242
From Whole Numbers to Fractions and Beyond

(3–8) Gallery Workshop

Use grid paper to explore the relationship between whole-number multiplication, multiplication with fractions, and algebra. Activities used in this workshop can be used with children who are learning the concepts.

Florence Glanfield
Board of Directors, National Council of Teachers of Mathematics; University of Alberta, Edmonton, Canada

217 (CONVENTION CENTER)

243
I Can Do Centers Right: A Centers Model for Differentiation

(3–8) Gallery Workshop

Knowledge of number and problem solving are key to mathematical success. Engage in an environment that promotes differentiation and that reinforces and reinvests math concepts. Implementing a math workshop develops routines that foster cooperation and independence. We will share resources and strategies for implementation, accountability, and management.

Rebecca Enright
Eastern Townships School Board, Magog, Quebec, Canada
Cheryl Cantin
Eastern Townships School Board, Magog, Quebec, Canada

GRAND SALON 4–7–10 (HILTON)

244
Keep on Rockin' with Scissors and Paper: Hands-On Spatial Reasoning

(3–8) Gallery Workshop

Strengthen students' spatial reasoning and visual thinking with paper folding and cutting. Solve puzzles, create pop-ups, and engage students by building connections between geometry and folk craft spanning centuries and cultures. Explore iPad apps to see how technology can help teach spatial reasoning concepts. Leave with classroom-ready materials.

Sara Normington
Council of Presidential Awardees in Mathematics (CPAM), Portland, Oregon
Jennifer Rising
Council of Presidential Awardees in Mathematics (CPAM), Chicago, Illinois

210 (CONVENTION CENTER)

245
Teaching Computations with Fractions So Students Can Explain *Why*

(3–8) Gallery Workshop

The Common Core requires students to understand why they arrived at their answer. Calculations alone just won't cut it. Learn how to make computations come alive, and experience activities you can take right back to your classroom. Leave prepared to guide students to discover the algorithms so they can calculate with confidence.

Becky L. Duprey
SUNY Potsdam, New York

240/241 (CONVENTION CENTER)

246
Is That Data Proportional? Multiple, Concrete Methods for Finding Out

(6–8) Gallery Workshop

Learn hands-on, conceptual lessons to help students understand, from multiple perspectives, what proportional means. Activities such as Pushing Cars and Big Steps will engage even the most reluctant learners. These lessons—that you can use next week!—support academic language development through purposeful discourse strategies and writing tasks.

Karajean Hyde
University of California, Irvine
Janna Canzone
University of California, Irvine
Kris Houston
University of California, Irvine

207 (CONVENTION CENTER)

2:45 P.M.–4:00 P.M.

247
Uncovering Proportional Relationships in an Ancient Puzzle

(6–8) Gallery Workshop

A key component to the algebra readiness of a middle school student is the ability to think and reason proportionally. Participants will construct a tangram and then explore the puzzle's proportional relationships. Three-dimensional nets will be assembled to create a new version of the puzzle and bring up new questions.

Diane Devine
Math Consultant, Boston, Massachusetts

R08 (CONVENTION CENTER)

248
Beyond Rise/Run: Activities to Invent and Connect Slope's Five Faces

(6–12) Gallery Workshop

Slope has five—count 'em, five—faces. Students shouldn't focus on just one or two, and in this session, neither will we! Instead, we'll explore activities and a learning progression designed to help students invent and make connections between all five faces of slope, in realistic and meaningful contexts.

Frederick Peck
Freudenthal Institute US, Boulder, Colorado

MAGNOLIA (HILTON)

249
Enhancing Mathematics in the Classroom with Online Tools and Lessons

(6–12) Gallery Workshop

The Desmos online graphing calculator is a powerful free tool for mathematical exploration. Combined with the high-quality resources available through NCTM Illuminations (http://illuminations.nctm.org) and Mathalicious (www.mathalicious.com), anyone can create engaging mathematical experiences for their students. BYOD for this interactive workshop!

Eli Luberoff
Desmos, Inc., San Francisco, California

228/229 (CONVENTION CENTER)

250
Grading, Feedback, and Assessment: Using Performance Tasks in the Classroom

(6–12) Gallery Workshop

Riveting debate arises at the intersection of grading, gathering data, and giving feedback to students. Participants will do a rich performance task, analyze student work, and discuss the instructional implications when using the task before, during, and after a unit.

Jesse E. Johnson
New Visions for Public Schools, New York, New York
Xiomara Gonzalez
New Visions for Public Schools, New York, New York

221/222 (CONVENTION CENTER)

251
Lessons, Links, Laughs, Lullabies, and Lines for Algebra 1

(6–12) Gallery Workshop

This presentation will focus on various methods to teach a number of topics in algebra 1, including stats, exponentials, systems, lines, and everything Common Core! Attendees will obtain a plethora of lessons, links, songs, and activities to use in their classroom.

Fred Thompson
East Forsyth High School, Kernersville, North Carolina
Gregory S. Fisher
Mount Tabor High School, Winston-Salem, North Carolina

R06 (CONVENTION CENTER)

252
A Multisensory Approach to Logic, Reasoning, and Proof

(9–12) Gallery Workshop

The abstract concepts and language of geometric reasoning are very difficult for many students, especially those with language and learning difficulties. Learn how to use multisensory strategies, structured language, and inexpensive manipulatives to teach abstract geometric concepts and to enhance students' understanding of geometric vocabulary.

Nadia A. Carrell
Multisensory Training Institute, Atlantic Seaboard Dyslexia Education Center, Rockville, Maryland

R02 (CONVENTION CENTER)

2:45 P.M.–4:00 P.M.

253
Mathematics of Decision Making: An Alternative Fourth-Year Math Course

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

MINDSET is a collaboration among educators, engineers, and mathematicians to create and implement a curriculum to teach standard mathematics concepts by using math-based decision-making tools for a noncalculus, fourth-year mathematics curriculum. Experience the curriculum through solving multistep problems in real-world settings.

Karen Norwood
North Carolina State University, Raleigh

215/216 (CONVENTION CENTER)

254
Technology's Role in CCSS: Student Engagement and Rich Mathematical Tasks

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

Take part in an engaging session and re-energize your classroom. Deepen reasoning and understanding through the use of technology in teaching topics ranging from algebra to precalculus. Easy to use strategies and examples related to the Mathematical Practices of the Common Core State Standards (CCSS) will be shared. Tips and activities will be explored through iPad apps and online resources.

Farshid Safi
The College of New Jersey, Ewing
George J. Roy
University of South Florida St. Petersburg

GRAND BALLROOM B (HILTON)

255 NT
New Teacher Workshop and Kickoff

(Preservice and In-Service) Gallery Workshop

Do you have questions on how to make it all work? Together we have answers and ideas on management, parents, homework, keeping your sanity, and more. Join others still in school, just starting, in their early career, or looking for help. Receive gifts, prizes, and good ideas.

David Barnes
National Council of Teachers of Mathematics, Reston, Virginia

R04 (CONVENTION CENTER)

3:30 P.M.–4:30 P.M.

256
Examining and Developing Practice through Live Laboratory Teaching

(General Interest) Session

A summer school laboratory class for upper elementary students provides an opportunity for all stakeholders to engage in the close study of public teaching. This setting enables a shared context for investigating the complexity of teaching. We will share video and artifacts to illustrate the benefits of this unique professional learning experience.

Deborah Loewenberg Ball
University of Michigan, Ann Arbor
Julie McNamara
University of Michigan, Ann Arbor
Nicole Garcia
University of Michigan, Ann Arbor

GREAT HALL A/D (CONVENTION CENTER)

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3:30 P.M.–4:30 P.M.

257 L↔R
Learn↔Reflect Reflection Session

(General Interest) Session

This culminating session for those who attended the Learn↔Reflect sessions will be a facilitated discussion of the four reflection questions.

NCTM Professional Development Services Committee
National Council of Teachers of Mathematics, Reston, Virginia

GREAT HALL B/C (CONVENTION CENTER)

258

Student Responses: A Window into Misconceptions

(General Interest) Session

Student responses can provide insight into misconceptions. How do we interpret student work? What are the most common misconceptions? What instructional techniques can help to lessen student misconceptions? Number and algebraic concepts will be the mathematical focus of the session.

Dr. Barbara Dougherty is the Richard G. Miller Endowed Chair for Mathematics Education and a professor in mathematics education at the University of Missouri–Columbia. Barb is a past member of the NCTM Board of Directors (2009–12) and is past Chair of the NCTM Research Committee. She has conducted classroom and student-based curriculum research and development for more than twenty years, has taught K–12 mathematics for more than eighteen years, and has taught in special education for more than ten. She has developed, implemented, and evaluated numerous professional development institutes for teachers in Pre-K–16.

Barbara J. Dougherty
University of Missouri, Columbia

GRAND BALLROOM C (HILTON)

259
Transforming the Mathematics Classroom for Rigor

(General Interest) Session

President's Series presentation

What is rigor in mathematics? How can it be achieved in the classroom via the Standards for Mathematical Practice? Instruction must change, student thinking must be made visible, and formative assessment must be an integral part of mathematics teaching and learning.

Don S. Balka
TODOS: Mathematics for All; Saint Mary's College, Notre Dame, Indiana

BELLE CHASSE (HILTON)

260
Supporting Early Numeracy through Counting Collections

(Pre-K–2) Session

Early learners of mathematics need opportunities to count to understand the relationship between numbers and quantities as well as connect counting to cardinality. This presentation will highlight one school's work with Counting Collections and how it has energized children's sense making and understanding of number and operations.

Angela Chan Turrou
University of California, Los Angeles
Allison Hintz
University of Washington Bothell

GRAND SALON 19–22 (HILTON)

261
Using Research to Inform the Teaching of Pre-K–Kindergarten Geometry

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

Drawing from research literature on early childhood students' understanding of geometric shapes, culturally responsive mathematics teaching, and other relevant materials, we will present methods of formative assessment and instructional design that can be used to move students' progression through the van Hiele levels of geometric thought.

Jennifer Ward
University of South Florida, Tampa
Eugenia Vomvoridi-Ivanovic
University of South Florida, Tampa

ROSEDOWN (HILTON)

3:30 P.M.–4:30 P.M.

262
Building "Mathematical Talk" in an Early Childhood Flipped Classroom

(Pre-K–5) Session

Attendees will consider early childhood teachers' experiences as they learned to "flip" their mathematics classroom to enhance mathematical discussions in a project-based learning environment. Learn about the challenges and successes the teachers faced throughout the process and discover strategies to effectively manage the transition.

Kelley E. Buchheister
University of South Carolina, Columbia

235/236 (CONVENTION CENTER)

263
Integrating Problem Solving into Math Workshop

(Pre-K–5) Session

Although math workshop may increase student engagement and facilitate differentiation, it does not ensure that students are engaged in rich mathematical tasks or sense making. This presentation examines specific and practical ways to integrate problem solving into guided math groups to ensure that students are engaged in deep mathematical thinking and learning.

Nathan J. Rosin
Carroll University, Waukesha, Wisconsin
Valarie Roman
School District of Waukesha, Wisconsin
Nancy Burmeister
School District of Waukesha, Wisconsin

243 (CONVENTION CENTER)

New to Teaching? Get answers to pivotal questions and concerns of new and soon-to-be teachers at the **New Teacher Strand** on Friday.

264 10
Quick and Meaningful Tasks to Engage and Assess Mathematical Thinking

(3–5) Session

Experience ten-minute tasks that will engage your students in the content and the Mathematical Practices of the Common Core. Take home a generous collection of tasks that are rich in mathematics and that can be used as formative assessments. Diagnose your students' needs by examining their mathematical thinking. Resources will be provided.

Annemarie Mockler Newhouse
South Euclid Lyndhurst City Schools, Ohio

GRAND SALON 3–6 (HILTON)

265
Schema-Based Instruction: A Strategy to Teach Problem Solving

(3–5) Session

Students who struggle in mathematics often struggle in the area of problem solving. This session will focus on the use of schema-based instruction to teach word problems to students who struggle. Participants will apply content to video-based case studies that focus on these students.

Amy Lingo
University of Louisville, Kentucky
Kristin E. Harbour
University of Louisville, Kentucky

214 (CONVENTION CENTER)

266
The Importance of the Number Line in Understanding Fractions

(3–5) Session

In this session, we will examine ways to effectively use the number line to help students understand that fractions are numbers, develop an understanding of magnitude, and make comparisons. Strategies for addressing the Common Core content and practice standards will be presented.

Arjan Khalsa
Conceptua Math, Petaluma, California
Julie McNamara
University of Michigan, Ann Arbor

MELROSE (HILTON)

3:30 P.M.–4:30 P.M.

267
Multiplication and Division: Moving from Counting to Reasoning

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

"They're still counting on their fingers!" Learn about effective approaches for this perplexing problem, as you join us in engaging activities and discussions about videos and student work. Discover how the knowledge package and learning pathway frameworks can create connections and help with differentiation. Leave with doable activities that you can use—tomorrow!

Chris Confer
Associates for Educational Success, Tucson, Arizona
Marco A. Ramirez
Associates for Educational Success, Tucson, Arizona

R05 (CONVENTION CENTER)

268
Advancing the "M" in STEM with Mindstorms and Measurement

(3–8) Session

Discover the potential for exploring mathematics using robotics activities based on the theoretical/pedagogical justification of Piaget's constructivism and Papert's constructionism. Leave with classroom-ready lessons designed to motivate students to think deeply about area and perimeter using LEGO Mindstorms NXT robotics and the Common Core State Standards.

Megan Nickels
Illinois State University, Normal
Cheryl L. Eames
Illinois State University, Normal

R09 (CONVENTION CENTER)

269
Is Math Really a Universal Language?

(3–8) Session

Universal language? Ask your English language learner (ELL) struggling in class about that! A lot of ELL research has been done, but what does it mean for a classroom teacher? What do you need to know about ELLs and their math background knowledge that may impact learning in your class? Discover practical tips and teaching strategies you can use to make learning math easier for ELLs.

Jeanne C. Mather
University of Science and Arts of Oklahoma, Chickasha

ELMWOOD (HILTON)

270 10
So What Do Your Students Know about Fractions and Decimals?

(6–8) Session

The short game you'll learn in this session provides a wealth of information about your students and their understanding of fractions and decimals. We will play the game and then discuss how to use it to diagnose and remediate understanding. Variations of the game as well as student work will be shared, and connections to the Common Core Standards for Mathematical Practice will be explored.

Connie S. Schrock
Emporia State University, Kansas

GRAND SALON 13–16 (HILTON)

271
Truth . . . Social Justice . . . and the Mathematical Way

(6–8) Session

What does it mean to be "like me?" This question is important to middle school students as they build their individual identities. Join us as we discuss what happens when we explore these ideas with our students from a social justice and a mathematical perspective. Math topics we will employ include percent, proportion, and statistics.

Laura K. Sellars
Metropolitan School District of Washington Township, Indianapolis, Indiana
Michelle R. Reel
Metropolitan School District of Washington Township, Indianapolis, Indiana

GRAND BALLROOM A (HILTON)

272
Integrating Social Justice Issues Can Support and Promote Quantitative Literacy

(6–12) Session

Using social justice issues, which are often replete with data, as context for learning statistics can help to create authentic experiences and meaningful learning opportunities for students who are often disengaged with mathematics. Come join us to learn more about and experience social justice mathematics!

Rachel Bates
Redlands Community College, El Reno, Oklahoma
Stacy Reeder
University of Oklahoma, Norman

245 (CONVENTION CENTER)

3:30 P.M.–4:30 P.M.

273
Making Mathematics a Habit!

(6–12) Session

We will look at developing mathematical habits of mind through literature and problem solving by engaging in adventures using *The Number Devil, Chasing Vermeer,* and other books. Take away teaching ideas and problems to use with your students and have fun yourself! Topics will include Pascal's triangle, prime and Fibonacci numbers, and more.

Trena L. Wilkerson
Baylor University, Waco, Texas
Dittika Gupta
Baylor University, Waco, Texas
Ashleyanne Thornhill
Baylor University, Waco, Texas

206 (CONVENTION CENTER)

274
Problem Posing: Bringing Logic to Problem Solving for At-Risk Algebra Students

(6–12) Session

Learn how to turn problem solving into an exploratory, discussion-rich activity through strategies such as thinking "what if not," leaving problems headless or tailless, and presenting deductive reasoning problems. Change your students' thinking from "What am I supposed to do?" into "What can I do?" and see their perseverance and engagement rise.

Jane M. Kang
Education Development Center, Waltham, Massachusetts
Mary K. Fries
Education Development Center, Waltham, Massachusetts
E. Paul Goldenberg
Education Development Center, Waltham, Massachusetts

R03 (CONVENTION CENTER)

275
Essential Fourth-Year Alternatives for College and Career Readiness

(9–12) Session

What would a nontraditional course look like that still prepares students for credit-bearing courses in college? Why are such courses critical options to have? We will explore elective courses for students seeking alternatives to calculus for their fourth year of high school. Participants will sample activities and see how they support future STEM learning.

Kevin P. Waterman
Education Development Center (EDC), Waltham, Massachusetts
Al Cuoco
Education Development Center (EDC), Waltham, Massachusetts
Elena Kaczorowski
Education Development Center (EDC), Waltham, Massachusetts

242 (CONVENTION CENTER)

276
Sequences and Series before Formulas

(9–12) Session

Too often we rush to present formulas for geometric and arithmetic series before students understand what sequences and series are all about. Come hear ways to present this topic so that students figure out their own formulas and apply them to the real world. See how this approach helps as students progress to Taylor series later in calculus.

Paul A. Foerster
Alamo Heights High School (Emeritus), San Antonio, Texas

GRAND SALON 21–24 (HILTON)

277
Harnessing Dynamic Computer Algebra in Support of Mathematics Assessment

(9–12, Higher Education) Session

Technology in assessment is often limited to general bookkeeping (online grade sheets) or transmittal ("clicker" response systems) roles. With dynamic computer algebra systems and interactive links to student work, mathematically "smart" technology can provide powerful aids to evaluating student work and new opportunities for student discourse.

Thomas P. Dick
Mathematics Department, Oregon State University, Corvallis

GRAND SALON 9–12 (HILTON)

3:30 P.M.–4:30 P.M.

278
Implementation of Common Core Standards in a High School Geometry Course

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

We will emphasize the use of transformations in implementing the Common Core State Standards in a high school geometry course. Experiences from an experimental course will be described, and a variety of problems and strategies for solutions wil be discussed. Handouts will be provided.

Shlomo Libeskind
University of Oregon, Eugene

JASPERWOOD (HILTON)

279
Ethnomathematics and STEM Education on a Worldwide Voyage

(Higher Education, Preservice and In-Service) Session

In an effort to bridge policy and practice in diverse populations, this presentation focuses on research conducted at U.S. higher educational institutions (Harvard, UCLA, UH) in the field of ethnomathematics, the relationship between math, culture, and identity, including ethnicity, socioeconomic class, English language learning, and special needs.

Linda Furuto
University of Hawaii at Manoa, Honolulu

223 (CONVENTION CENTER)

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3:30 P.M.–4:30 P.M.

280
State Initiative and University Professional Development Partnerships

(Higher Education, Preservice and In-Service) Session

This session will share how Alabama Math, Science, and Technology Initiative (AMSTI) specialists and university faculty partnered to shape an effective in-service professional development to best meet pedagogical content needs of preservice elementary teachers. Hands-on activities, details about the program, and classroom video will be shared.

Elizabeth Hickman
Auburn University-AMSTI, Auburn, Alabama
Terri Rubio
Auburn University-AMSTI, Auburn, Alabama
Megan Burton
Auburn University, Auburn, Alabama

230 (CONVENTION CENTER)

280.1 ew
Virtual Learning Community: Uniting Everyday Mathematics teachers

(Pre-K–5) Exhibitor Workshop

This presentation will introduce educators to the Everyday Mathematics Virtual Learning Community (cemseprojects.org/vlc), a free website for educators. You will explore the site, learn about its development, and discuss how it can be used by teachers, math coaches, and professional learning communities to provide quality learning for teachers.

McGraw-Hill Education
Columbus, Ohio

218 (CONVENTION CENTER)

280.2 ew
GO Math! In Action: Using Video to Enliven Math Practices

(3–8) Exhibitor Workshop

Explore video of students engaged in the Standards for Mathematical Practice in grades K–8 classrooms. Juli Dixon, an author on the program, will unpack the videos engaging participants in a rich discussion of strategies to support implementation of the practices as well as to support these sorts of conversations with collaborative teams.

Houghton Mifflin Harcourt
Austin, Texas

208 (CONVENTION CENTER)

280.3 ew
Making Middle School Math Relevant, Rigorous and Possible for Students

(6–8) Exhibitor Workshop

Discover how Glencoe Math can empower you to teach Common Core math, engage every student, and develop a classroom of critical thinkers. You know that math is fascinating and very useful. Show your students just that while teaching them all the skills they need to become critical thinkers and excel on the Next Generation assessments.

McGraw-Hill Education
Columbus, Ohio

219 (CONVENTION CENTER)

280.4 ew
Transform Learning and Teaching with MathXL® for School

(9–12) Exhibitor Workshop

Through rich, multimedia resources, 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!

Pearson
Upper Saddle River, New Jersey

209 (CONVENTION CENTER)

280.5 ew
Sicherman Dice and Other Mathematical Experiments

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

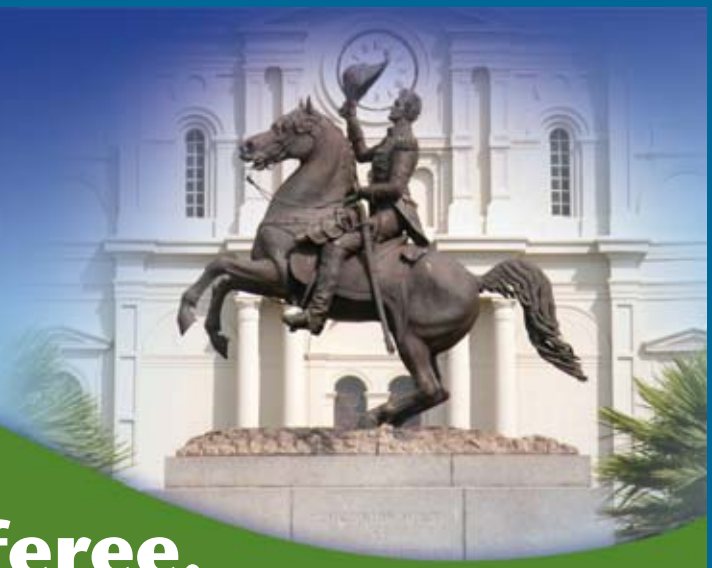
This workshop focuses on the HP Prime Graphing Calculator and sharing customized HP Prime apps to encourage experimentation in the mathematics classroom. We will look at Sicherman Dice, make and test geometric conjectures, and look at a new way to introduce trigonometric functions—all using customized HP apps!

Hewlett-Packard
Fort Collins, Colorado

FOUNTAIN ROOM (HILTON)

2014 NCTM ANNUAL MEETING & EXPOSITION

April 9–12 • New Orleans



Get Published!
Be a Journal Referee.
Avoid Common Writing Pitfalls!

Find out how at the **BuzzHub Networking Lounge** located in the Exhibit Hall.

The journal editors from *Teaching Children Mathematics*, *Mathematics Teaching in the Middle School*, and *Mathematics Teacher* will be giving a series of mini-sessions to help you write or referee for one of NCTM's school journals. Inside of 15 minutes, you'll discover how to submit your ideas for publication, volunteer as a referee, or polish an existing manuscript. The editors will explain the peer-review process, answer your questions, point you in the right direction, and allay any fears you may have about getting started. All for a price that can't be beat—free!

Here's what's going on:

Get Published

Discover how simple it is to turn your ideas into articles.
Presented by Sara-Lynn Gopalkrishna, MTMS editor

Thursday, April 10:
10:30–10:45 a.m. and
1:30–1:45 p.m.

Friday, April 11:
11:00–11:15 a.m. and
2:00–2:15 p.m.

Saturday, April 12:
10:30–10:45 a.m.

Be a Journal Referee

Find out how critiquing manuscripts can help your career.
Presented by Tara Slesar, MT editor

Thursday, April 10:
11:00–11:15 a.m. and
2:00–2:15 p.m.

Friday, April 11:
10:30–10:45 a.m. and
1:30–1:45 p.m.

Saturday, April 12:
11:00–11:15 a.m.

Avoid Writing Pitfalls

Learn hints on steering clear of those pesky manuscript potholes.
Presented by Beth Skipper, TCM editor

Thursday, April 10:
1:00–1:15 p.m. and
2:30–2:45 p.m.

Friday, April 11:
1:00–1:15 p.m. and
2:30–2:45 p.m.

Saturday, April 12:
10:00–10:15 a.m.

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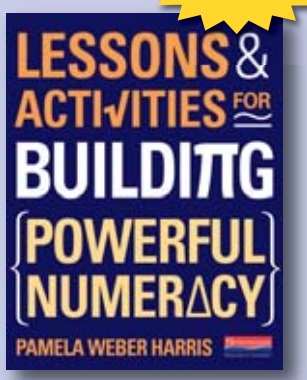
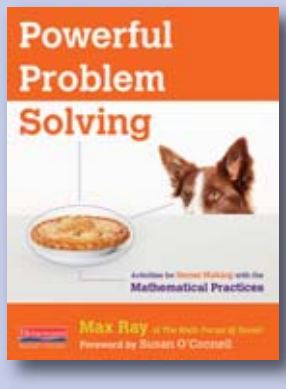
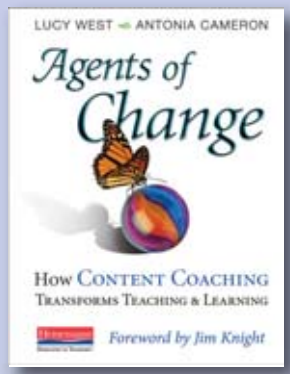


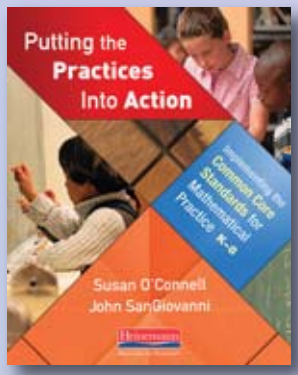
Lessons and Activities for Building Powerful Numeracy
Pamela Harris
Gr. 6–10 / 978-0-325-04804-8 / 2014 / 264pp est. / $26.50 est.



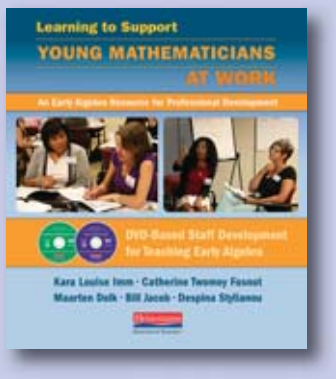
Powerful Problem Solving
Activities for Sense Making with the Mathematical Practices
Max Ray
Gr. 3–8 / 978-0-325-05090-4 / 2013 / 208pp / $23.00



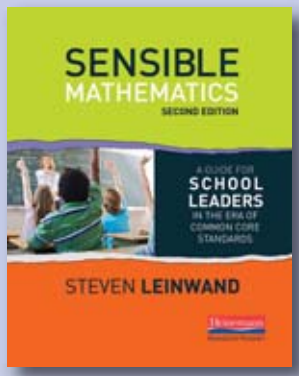
Agents of Change
How Content Coaching Transforms Teaching and Learning
Lucy West and **Toni Cameron**
Gr. K–8 / 978-0-325-01383-1 / 2013 / 232pp / $34.00



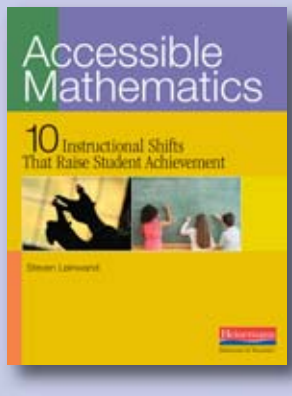
Putting the Practices Into Action
Implementing the Common Core State Standards for Mathematical Practice
Susan O'Connell and **John SanGiovanni**
Gr. K–8 / 978-0-325-04655-6 / 2013 / 168pp / $20.00



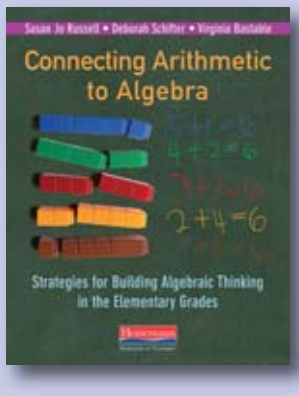
Learning to Support Young Mathematicians at Work
An Early Algebra Resource for Professional Development
Catherine Fosnot and **Colleagues** from Mathematics in the City
Complete Facilitator's Package:
Gr. 2–6 / 978-0-325-04363-0 / 2012 / 366pp guide + 2 DVDs / $199.50



Sensible Mathematics, Second Edition
A Guide for School Leaders in the Era of Common Core State Standards
Steven Leinwand
Gr. K–12 / 978-0-325-04382-1 / 2012 / 144pp / $22.00



Accessible Mathematics
Ten Instructional Shifts That Raise Student Achievement
Steven Leinwand
Gr. K–12 / 978-0-325-02656-5 / 2009 / 128pp / $17.00



Connecting Arithmetic to Algebra
Strategies for Building Algebraic Thinking in the Elementary Grades
Susan Jo Russell, Deborah Schifter, and **Virginia Bastable**
Gr. 1–6 / 978-0-325-04191-9 / 2011 / 176pp / $21.00

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Friday

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Highlights

Iris M. Carl Equity Address (Presentation 388)
NCTM Business Meeting (Presentation 442)
NCTM President-Elect's Address (Presentation 490)
New Teacher Celebration (Presentation 565)

Icon	Presentation Numbers
EW Exhibitor Workshops	310.1, 310.2, 310.3, 310.4, 361.1, 361.2, 361.3, 361.4, 413.1, 413.2, 413.3, 413.4, 466.1, 466.2, 466.3, 466.4, 518.1, 518.2, 518.3, 518.4, 564.1, 564.2, 564.3, 564.4
CF Teaching Computational Fluency with Understanding	313, 339, 341, 445, 448, 467, 502, 554
LT Teachers Leveraging Technology	309, 335, 402, 465, 495, 542.1
NCTM Committee	544
NT New Teacher	316, 323, 372, 382, 385, 462, 469, 533, 548, 565
PtA Principles to Actions: Ensuring Mathematical Success for All	285, 347, 438, 443
SJ Social Justice	543

The BuzzHub

Network at the BuzzHub!
See page 162 for more details.

Facebook

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Twitter

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Registration Hours

7:00 a.m.–4:00 p.m.

Exhibit and BuzzHub Hours

8:00 a.m.–6:00 p.m.

Bookstore Hours

8:00 a.m.–6:00 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.

8:00 A.M.–9:00 A.M.

282
Collaborate to Educate: Creating a Professional E-Learning Community

(General Interest) Session

President's Series presentation

The implementation of the Common Core brings a golden opportunity for classroom teachers to collaborate in an effort to better educate our students. The presenter will share how she built a community of teachers who have a common view of teaching and learning, sharing standards-based lessons while incorporating the Standards for Mathematics Practice.

Nancy J. Sattler
American Mathematical Association of Two-Year Colleges (AMATYC), Memphis, Tennessee

242 (CONVENTION CENTER)

283
Developing an Assessment Intelligence in the Common Core Era

(General Interest) Session

This motivational session will outline three critical and sustainable components for the day-to-day implementation of an assessment vision designed to improve student performance in mathematics. How can you and your colleagues meet the increased pressure for student learning? What does it mean to become an "assessment intelligent" teacher?

Timothy D. Kanold
Loyola University, Chicago, Illinois

GREAT HALL B/C (CONVENTION CENTER)

Don't miss the **Closing Session** on Saturday afternoon with featured speaker Bill Amend

284
Effective Grading for Common Core State Standards

(General Interest) Session

As you implement the Common Core State Standards, do you have a plan for effectively communicating student achievement? This interactive session addresses details of planning and implementing Standards-based grading within the CCSS, from developing detailed procedures to educating parents. Learn from teachers who are currently using these procedures.

Forrest Clark
North Thurston Public Schools, Lacey, Washington
Elizabeth Clark
North Thurston Public Schools, Lacey, Washington

JEFFERSON BALLROOM (HILTON)

285 PtA
Principles to Action: What It Takes

(General Interest) Session

The Common Core doesn't outline the necessary structures to ensure higher levels of mathematics student achievement. What it takes to implement highly effective mathematics programs is the focus of NCTM's signature publication *Principles to Action*. One of its authors will outline the wide range of recommendations in the document for making mathematics work for all.

Matthew R. Larson
Lincoln Public Schools, Nebraska

GREAT HALL A/D (CONVENTION CENTER)

286
Top Ten Ways to Motivate Your Students

(General Interest) Session

This session will provide a "top ten" list of classroom-tested ideas for motivating students. Using these strategies, teachers will capture students' interest, get them to want to learn math, get them to believe they can succeed in math, and get them to believe they can learn it in this specific classroom.

Rita H. Barger
University of Missouri-Kansas City

R09 (CONVENTION CENTER)

EW Exhibitor Workshop | CF Teaching Computational Fluency | LT Teachers Leveraging Technology | NCTM Committee | NT New Teacher | PtA Principles to Actions | SJ Social Justice

8:00 A.M.–9:00 A.M.

287
Balance by the Bayou: Build Productive Mathematical Thinkers

(Pre-K–2) Session

Many students infer that the equals sign means "the total" or the "operations = answer." Restricting problems to only those that fit one of these interpretations hinders students' ability to learn from and solve novel equations. Come explore approaches to build habits of mind of productive mathematical thinkers.

Mary C. Cavanagh
Arizona State University, Tempe

R05 (CONVENTION CENTER)

288
Why and How to Teach Fractions in the Primary Grades

(Pre-K–2) Session

There is almost no attention to fractions in the primary grades in the Common Core State Standards, but young students need many opportunities to experience fractions in different contexts if they are to be successful in later grades. We will discuss why fractions should be introduced in the primary grades and how primary teachers can do so.

Courtney Koestler
University of Arizona, Tucson

FOUNTAIN ROOM (HILTON)

289
Counting on Connections to Mathematics and Literature

(Pre-K–5) Session

Reading and mathematics are central to classroom teaching. This session will present books in which mathematics is (1) the basis for the story, (2) integral for comprehending and extending the story, and (3) based on readers' connections to the story. Effective strategies for enhancing mathematics instruction will be shared.

Jeffrey C. Shih
University of Nevada, Las Vegas
Cyndi Giorgis
University of Nevada, Las Vegas

BELLE CHASSE (HILTON)

290
Facilitating the Mathematical Practices for English Language Learners

(Pre-K–5) Session

Equity strand presentation

The Common Core Standards for Mathematical Practice (SMP) can be used as a framework for determining how successful our tasks are. To do this, we need to find tasks that facilitate all students participating in the SMPs. In this session, we will discuss ways to promote the practices to English language learners while meeting other students' needs at the same time.

James S. Ewing
Syracuse University; TODOS: Mathematics for All, New York

243 (CONVENTION CENTER)

291
Leading Productive Mathematical Discussions through Open and Targeted Sharing

(Pre-K–5) Session

Leading productive discussions requires careful thinking about the mathematical goal. In this presentation, we describe how thinking about different goals for math talk, from open strategy sharing to targeted sharing, can help teachers to better design discussions to meet those goals and help children to participate meaningfully.

Allison Hintz
University of Washington Bothell
Elham Kazemi
University of Washington, Seattle

GRAND SALON 13–16 (HILTON)

292
Developing Fraction Number Sense and Reasoning on the Number Line

(3–8) Session

Do your students have strong number sense with fractions? Can they use the number line to reason about fractions? We will share student videos and engage in classroom-tested activities using manipulative materials and free online tools to enhance students' conceptual understanding and reasoning about comparing fractions on the number line.

Nadine Bezuk
Center for Research in Mathematics and Science Education (CRMSE), San Diego, California
Steve Klass
Encinitas Union School District, California

R03 (CONVENTION CENTER)

8:00 A.M.–9:00 A.M.

293
Drawing Tape Diagrams to Deepen Understanding

(3–8) Session

Come to this session and learn how your students can use tape diagrams to help them solve problems as advocated by the Common Core State Standards. After being introduced to the basics, you will see how students were able to use this powerful technique as well as have the opportunity to draw diagrams on your own.

Heather Mathison
University of Wisconsin-La Crosse
Jennifer J. Kosiak
University of Wisconsin-La Crosse

MELROSE (HILTON)

294
Geometry: It's Not Just Squares and Triangles

(3–8) Session

Let's look at the development of geometric reasoning in children! We will discuss open-ended geometry tasks and a framework for examining children's thinking as elicited in these tasks. We will also talk about how we can use the information gathered from students in lesson planning.

Thomas Fox
University of Houston-Clear Lake, Texas

GRAND SALON 21–24 (HILTON)

295
King Math's Table With Sir Cumference, Vikings, Pythagoras, and Greedy Triangle!

(3–8) Session

School mathematics can be effectively connected with children's literature, children's mythology, technology, creativity, and real hands-on and mind-on activities. In this presentation, we will demonstrate how teachers can capture the imagination of students while developing deeper understanding of geometry, measurement, and algebraic connections. Join us!

John F. McAdam
Marist College, Poughkeepsie, New York
Kelley Gould
Marist College, Poughkeepsie, New York

R01 (CONVENTION CENTER)

296
Changing Outcomes for Kids: Algebra Ready by Eighth Grade

(6–8, Research) Session

Explore our research and experience with respect to how heterogeneously grouping students and flexible grouping weekly for differentiation affect student growth in mathematics classes. We will share how our school has dramatically increased the number of students successfully completing algebra by eighth grade.

Sue Martino
Preston Middle School, Poudre School District, Fort Collins, Colorado
Dawn DuPriest
Preston Middle School, Poudre School District, Fort Collins, Colorado
Ryan D. Martine
Preston Middle School, Poudre School District, Fort Collins, Colorado

206 (CONVENTION CENTER)

297
Co-Teaching: Mathematics Strategies for Integrating Regular and Special Education

(6–8) Session

Engage in strategies that support co-teaching in the classroom. Explore a variety of mathematical tasks involving rate, ratio, and proportional reasoning; equivalent expressions; and radical and integer exponents. Use instructional models such as concrete-representational-abstract, scaffolding instruction, and meaningful student connections.

Clemmie B. Whatley
Mercer University, Atlanta, Georgia

245 (CONVENTION CENTER)

298
Crunched for Time? Make the Data Work for You

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

This research-based, interactive session explores the alignment of classroom assessments and use of test data to analyze student knowledge. Test samples using the number system standards of the Common Core provide the focus of the discussion. You will gain the skills necessary to use student data to help improve instruction and, ultimately, student success.

Ryan M. Higgins
University of Louisville, Kentucky
Kristin E. Harbour
University of Louisville, Kentucky

GRAND BALLROOM A (HILTON)

299
What's on the Menu? Exploring Standards and Sharing Practice

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

If new standards are to take hold and lead to improved teaching and learning, teachers need regular opportunities to work together on tasks that immediately inform instruction. We will demonstrate and share a "menu" of informal school-based learning tools that help teacher teams in Montana explore and implement standards for content and practice.

Jennifer Luebeck
Montana State University, Bozeman
Lisa Scott
Math Education Consulting, Billings, Montana
Georgia Cobbs
University of Montana, Missoula

GRAND SALON 3–6 (HILTON)

Check out the Exhibitor Workshops

300
You CAN Get There from Here

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

How might a Social Security number be used to determine an estimate of the value of pi? Are there more even numbers than odd in probability distribution? What are the dangers of continuously overestimating a quotient in the division algorithm? This session reveals surprising pathways to connections between seemingly unrelated concepts and topics.

William R. Speer
University of Nevada, Las Vegas

ROSEDOWN (HILTON)

301
Mathematical Modeling: What Is It Really?

(6–12) Session

Unlike other Common Core standards, modeling is a standard both for Mathematical Practice and for content. Whereas other conceptual categories, such as algebra, define what students should understand and be able to do, modeling is defined in relation to other standards. We unpack this construct by providing examples and describing what modeling is and is not.

Michelle Cirillo
University of Delaware, Newark
Jinfa Cai
University of Delaware, Newark
John A. Pelesko
University of Delaware, Newark

223 (CONVENTION CENTER)

302
Real STEM: Mathematics in an Interdisciplinary Context

(6–12) Session

The CCSSM and the Next Generation Science Standards call for modeling in real-world contexts. The Real STEM project engaged interdisciplinary teams of STEM teachers in developing and implementing courses addressing this call. We will share performance tasks developed by teachers that incorporate problem-based learning.

Robert Lee Mayes
Georgia Southern University, Statesboro

GRAND SALON 19–22 (HILTON)

8:00 A.M.–9:00 A.M.

303
Technology Integration in Task-Based Learning

(6–12) Session

In this session, teachers will explore how to implement task-based lessons through the use of smartphone and tablet technology. These lessons will allow students to more deeply explore each cluster of the Common Core State Standards while the technology allows the students to communicate thinking and understanding in a variety of ways.

Erin M. Pinning
Evergreen Public Schools, Vancouver, Washington
Melina L. Dyer
Evergreen Public Schools, Vancouver, Washington
Amanda Godsil
Evergreen Public Schools, Vancouver, Washington

GRAND BALLROOM C (HILTON)

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www.mualphatheta.org

304
The Binomial Theorem: Applications, Theory, History … and Beauty

(9–12, Higher Education) Session

Mathematicians, from Euclid to Yang Hui, worked extensively on the binomial theorem, taking centuries to refine it and expand its theoretical applications. How did Pascal enter the theorem's limelight? Was there a clash of thought? Come learn about the theorem's connection with other branches of math and its engaging real-life applications.

Khoon Yu Tan
John H. Reagan High School, Houston, Texas

ELMWOOD (HILTON)

305
Cool Math from Cool Graphs

(9–12) Session

New graphing technology offers opportunities for explorations that were not possible until now. What can students learn from the graph of $x^4 + 10x^2y^2 - 9y^4 = 0$? How about $\text{abs}(x + y) = x + y$ or $\ln(\text{abs}(y + 1) = \ln(\text{abs}(x)) - 2$? Examples spanning the school curriculum will be used to illustrate some new ways to leverage graphing technology in the classroom.

Mark Howell
Gonzaga College High School, Washington, D.C.

225/226/227 (CONVENTION CENTER)

306
Developing a MATHlete Program for Inner-City Students

(9–12) Session

Find out how one nonprofit organization started a MATHlete program to develop mathematical skills for low-income, high-potential students in Anacostia, Washington, D.C. The program evolved into one that also provided SAT preparation and rigorous college mentoring. Results of the first MATHlete class, graduating in 2014, will be discussed.

Paul Paul Penniman
Resources for Inner City Children (RICH), Washington, D.C.

GRAND SALON 9–12 (HILTON)

8:00 A.M.–9:00 A.M.

307
Flipping with a Twist: Promoting Inquiry While Flipping the Classroom

(9–12) Session

This presentation encourages people to amend the usual method for a lecture/homework flipped classroom. I have added inquiry-based activities both before and after video lectures. Many of these activities can be done in other classes to promote understanding of Common Core concepts. We will simulate a typical two-day cycle of this form of instruction.

Jonathan M. Osters
The Blake School, Minneapolis, Minnesota

R07 (CONVENTION CENTER)

308
Literacy Strategies to Impact Learning in the University Mathematics Classroom

(9–12, Higher Education) Session

Two university faculty discuss exploratory efforts to integrate appropriate literacy strategies into a university calculus/precalculus class. The development of the project, specific strategies used, sample lessons, and records of impact will be shared.

Tena L. Roepke
Ohio Northern University, Ada
Debra Gallagher
Ohio Northern University, Ada

230 (CONVENTION CENTER)

309 LT
Math Teachers and Social Media: Professional Collaboration or Support Group?

(Preservice and In-Service) Session

Math teachers from around the world connect and collaborate using blogs, Twitter, Google+, Facebook, and other services. Is this the future of professional collaboration? Or is it little more than a support group? This session will take a critical yet hopeful look at current practices and propose uses that further professionalize mathematics teaching.

Raymond Johnson
University of Colorado Boulder

JASPERWOOD (HILTON)

310
Real Deal: Preservice Teachers' Use of Culturally Relevant Mathematics Tasks

(Preservice and In-Service) Session

Equity strand presentation

This session will share tasks, activities, strategies, and examples of assessments and mathematics tasks used to prepare preservice secondary mathematics teachers to engage in culturally responsive teaching in their mathematics classrooms.

Sandra Richardson
Virginia State University, Petersburg
Cheryl Adeyemi
Virginia State University, Petersburg

214 (CONVENTION CENTER)

310.1 EW
Pearson 2

(General Interest) Exhibitor Workshop

Come hear the latest from Pearson!

Pearson
Upper Saddle River, New Jersey

208 (CONVENTION CENTER)

310.2 EW
Singapore Math and the Rigor of Common Core: Exploring Assessments

(6–8) Exhibitor Workshop

In this session, participants will examine the requirements of the Common Core and the types of assessments that students will be asked to complete. The presenter will share how Math in Focus helps students to prepare for the rigor required in both Smarter Balanced and PARCC assessments.

Houghton Mifflin Harcourt
Austin, Texas

209 (CONVENTION CENTER)

8:00 A.M.–9:00 A.M.

310.3 EW
Bringing Content and Practice Standards Together

(6–12) Exhibitor Workshop

Implementing CCSS demands that we provide students opportunities to connect content and practice. In this session, we will consider how to use TI technology to engage students with interesting problems, encourage students to make sense of mathematics, and lead students to employ the math practices for a successful learning experience.

Texas Instruments
Dallas, Texas

219 (CONVENTION CENTER)

310.4 EW
Pearson High School Math and the Common Core

(9–12) Exhibitor Workshop

Learn how this blended print and digital curriculum not only engages students but also infuses Common Core Standards and Mathematical Practices throughout each lesson to ensure ALL learners acquire the critical knowledge and skills necessary to succeed in college and in their careers.

Pearson
Upper Saddle River, New Jersey

218 (CONVENTION CENTER)

8:00 A.M.–9:15 A.M.

311
Building Number Operations: Laying a Strong Foundation

(Pre-K–2) Gallery Workshop

Situations that help students to build early number operations will be explored. Participants will examine student solution strategies with the goal of understanding how student reasoning of operations progresses.

Kathleen Lynch-Davis
Appalachian State University, Boone, North Carolina
Chrystal Dean
Appalachian State University, Boone, North Carolina
Lisa Poling
Appalachian State University, Boone, North Carolina

217 (CONVENTION CENTER)

312
Drawing Inferences to Inform Instruction for Struggling Learners

(Pre-K–2) Gallery Workshop

In this session, we will view student video examples and use a model to assist in drawing conclusions (inferences) about the mathematical understandings of elementary students, particularly those who struggle. Opportunity will be provided to develop instructional tasks that address the difficulties identified.

John K. Lannin
University of Missouri, Columbia
Delinda van Garderen
University of Missouri, Columbia

R02 (CONVENTION CENTER)

313 CF
From Situations to Computations: Using Stories to Understand Subtraction Algorithms

(Pre-K–2) Gallery Workshop

The Common Core State Standards for Mathematics describes four situation types for addition and subtraction. We will explore engaging ways to employ these four situations in building a strong understanding of subtraction concepts, as well as how we can develop invented and standard algorithms.

Jennifer M. Bay-Williams
University of Louisville, Kentucky

OAK ALLEY (HILTON)

314
Radically Real: Manipulatives as a Vehicle for Developing Number Sense

(Pre-K–2) Gallery Workshop

Multiple representations help support number sense in the preschool and kindergarten classroom. Hands-on activities focus on ways teachers can cement ideas including ten frames, open-ended problems, literature, and much more. Video clips look deeper into student understanding with number sense and pave the way to a solid foundation in math.

Katie M. Isaac
Math Solutions, Sausalito, California
Lisa K. Rogers
Math Solutions, Sausalito, California

R04 (CONVENTION CENTER)

8:00 A.M.–9:15 A.M.

315
Communicate to Learn! Developing Communication Skills While Teaching Number Sense

(Pre-K–5) Gallery Workshop

Learn practical ways to help students learn how to read word problems and then communicate their thinking. Engage in fun activities that teach talk, reading, writing, and problem solving for number sense in mathematics. Explore activities that you can implement tomorrow to deepen students' understanding. All activities support Common Core and NCTM Standards.

Cathy A. Marks Krpan
Ontario Institute for Studies in Education, University of Toronto, Canada

238/239 (CONVENTION CENTER)

316 NT
Teaching for Learning: Best Instruction Begins with Intention

(Pre-K–5) Gallery Workshop

Advanced and intentional lesson planning is a practice essential to the daily work for effective mathematics instruction. Come explore a protocol that actively engages students throughout a lesson. Selection and implementation of worthwhile tasks and teacher questioning will be investigated.

Arlene Mitchell
RMC Research Corporation, Denver, Colorado
Clare Heidema
RMC Research Corporation, Denver, Colorado
John Sutton
RMC Research Corporation, Denver, Colorado

211/212 (CONVENTION CENTER)

Stop by booth **1435** to see what's new in K -12 Common Core mathematics

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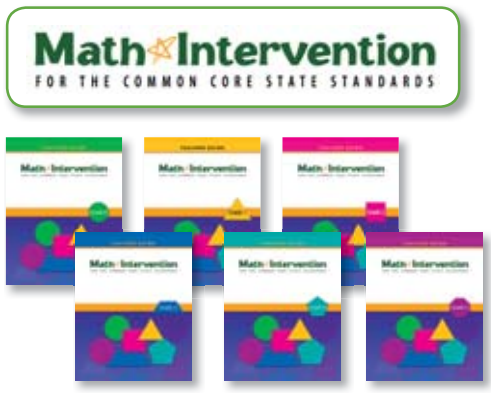

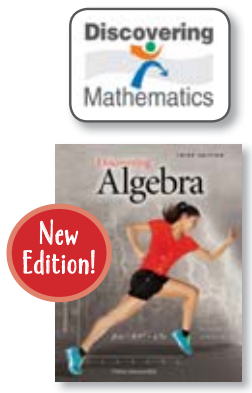

Kendall Hunt
kendallhunt.com/prek12

317
Let's Teach More Geometry in Elementary School!

(3–5) Gallery Workshop

Engaging activities for exploring geometric concepts will be presented in this session. Participants will leave with materials and lesson ideas to aid in developing students' geometric thinking.

Beverly J. Ferrucci
Keene State College, New Hampshire

203/204/205 (CONVENTION CENTER)

318
Student-Friendly Rubrics: Connecting Open-Response Tasks to Mathematical Practices

(3–5) Gallery Workshop

How can we make challenging open-response estimation problems more accessible and engaging for our students? By using a student rubric to analyze peers' work, students reengage with these tasks that address Common Core Content Standards and Mathematical Practices. Join us to engage in interesting mathematical tasks and experience reengagement.

John A. Benson
Center for Elementary Mathematics and Science Education, University of Chicago, Illinois
Andy Carter
Center for Elementary Mathematics and Science Education, University of Chicago, Illinois
Amanda Ruch
Center for Elementary Mathematics and Science Education, University of Chicago, Illinois

R06 (CONVENTION CENTER)

318.1
What Does "Times" Really Mean in Multiplication?

(3–5) Gallery Workshop

How can I help my students develop multiplicative reasoning? Participants will engage in hands-on/minds-on activities that use context to build the understanding of multiplication beyond repeated addition. We will also explore comparative multiplication situations using the tape diagram as a sense-making tool.

Andria Disney
University of Montana, Missoula

217 (CONVENTION CENTER)

319
Understanding Fraction Computation by Applying and Extending Previous Understandings

(3–8) Gallery Workshop

The Common Core State Standards call for students to "apply and extend previous understandings" of whole numbers and fraction equivalence as they move into computation with fractions. We will share video of lessons designed to help students build on what they know, address common challenges that they encounter, and develop deep understanding of fraction computation.

Julie McNamara
University of Michigan, Ann Arbor

210 (CONVENTION CENTER)

320
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

MAGNOLIA (HILTON)

321
Irrational Numbers—Where Are You?

(6–8) Gallery Workshop

What and where are irrational numbers? Why do we need them? Come join us as we discover the need for irrational numbers and find their approximate location on a number line. Connections will be made to the Pythagorean theorem and the square root function. You will also use rational number approximations to discover the irrational number pi.

Vivian F. Cyrus
Morehead State University, Kentucky
Christie Perry
Morehead State University, Kentucky

215/216 (CONVENTION CENTER)

8:00 A.M.–9:15 A.M.

322
The Hierarchy of Hexagons: A Geometric Inquiry

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

The hierarchy of quadrilaterals is standard fare in geometry courses at many levels. But what about hexagons? Come join a genuine inquiry session in which we will develop hexagon classification schemes, ask about relationships, and maybe even prove a few new theorems! Modifications for middle and high school classrooms will be discussed.

Christopher Danielson
Normandale Community College, Bloomington, Minnesota

GRAND BALLROOM B (HILTON)

323 NT
What's the Problem? Developing Effective Problem Solvers

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

Developing reasoning through problem solving is critical in helping students become proficient mathematicians and creative thinkers with deep conceptual understandings across mathematics. This presentation will focus on strategies to help develop effective problem solvers through hands-on explorations and to identify characteristics of rich tasks.

Cory A. Bennett
Idaho State University, Pocatello

R08 (CONVENTION CENTER)

324
Creatively Integrate 1,000 *Free* Interactive Activities for iPads, Computers, and Handheld Devices

(6–12) Gallery Workshop

Enjoy hands-on experiences and obtain 1,000 free, colorful Common Core–aligned activities that can be incorporated into your curriculum using TI-Nspire CX handhelds, computer software, or apps for the iPad. Among the topics from middle school through AP Calculus included here are slope, area formulas, domain and range, series, area between curves, and more. Free student worksheets and teacher notes will also be provided.

Tom Reardon
Youngstown State University, Ohio

GRAND SALON 4–7–10 (HILTON)

325
Paper Squares, Toothpicks, and Licorice: Making Sense of Functional Relationships

(6–12) Gallery Workshop

Do you have a difficult time helping students to see how slope and intercepts can be expressed in context? In this session, you will use paper squares, toothpicks, and licorice to create inexpensive physical patterns that show slope and intercepts in the context of real life, and you'll learn lots of ways to help your kids make connections in algebra.

Jennifer M. Campbell
Wicomico County Public Schools, Salisbury, Maryland

221/222 (CONVENTION CENTER)

326
Real-World Lessons with Mathalicious

(6–12) Gallery Workshop

How can we use real-world topics to align our teaching with the Common Core State Standards and challenge our students to think more critically about the world? In this presentation, we'll model three lessons that address key middle school topics with a particular emphasis on the higher-order Mathematical Practices. Warning: This may be the most fun you will have in New Orleans!

Matt Lane
Mathalicious, Charlottesville, Virginia
Karim K. Ani
Mathalicious, Charlottesville, Virginia

GRAND BALLROOM D (HILTON)

327
Crocodiles, Logarithms, and the Mathematical Practice Standards

(9–12) Gallery Workshop

In this session, a question about crocodiles leads to the Common Core's Standard for Mathematical Practice on modeling. How do you decide when data are linear? What do you do when the relationship does not seem to be linear? Where do logarithms come in and why? Modeling involves more than fitting a curve to a set of data, and crocodiles help make the case.

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

244 (CONVENTION CENTER)

8:00 A.M.–9:15 A.M.

328
Handheld Technology + Hands-On Activities = CCSS Success!

(9–12) Gallery Workshop

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

Tom Beatini
Glen Rock High School, Glen Rock, New Jersey

228/229 (CONVENTION CENTER)

329
Sierpinski Meets a Fiery Dragon

(9–12) Gallery Workshop

Participants in this session will construct a Dragon Curve and a Sierpinski fractal. Reflections, rotations, symmetry, and self-similarity will be used in the constructions. A search for patterns will be conducted.

Raymond Siegrist
SUNY Oneonta, Oneonta, New York

240/241 (CONVENTION CENTER)

330
Use Manipulatives to Differentiate Instruction

(9–12) Gallery Workshop

Help students gain mathematical proficiency through the use of manipulatives to differentiate instruction. Cognitively demanding tasks from algebra 1 and 2 will use manipulatives to help students visualize concepts such as factoring polynomials, completing the square, growth patterns, and linear functions using recursive and explicit formulas.

Marian Avery
Great Valley High School, Malvern, Pennsylvania

207 (CONVENTION CENTER)

331
Getting Real: Using a Culturally Relevant and Cognitively Demanding Mathematics Tasks Rubric

(Preservice and In-Service) Gallery Workshop

Equity strand presentation

Participants in this session will learn about cognitively demanding tasks and maintaining the cognitive demand, while ensuring that the tasks are also culturally relevant. We will utilize and critique the usefulness of a CRCD (culturally relevant, cognitively demanding) task rubric to evaluate a set of teacher-created tasks.

Yolanda A. Parker
Tarrant Count College, Fort Worth, Texas
Shelly M. Jones
Central Connecticut State University, New Britain

GRAND SALON 15–18 (HILTON)

9:30 A.M.–10:30 A.M.

332
Be Radical—Advocate for Mathematics

(General Interest) Session

President's Series presentation

Learn how teachers can be advocates for their students by leveraging their influence on a broader scale. Hear about how others have successfully advocated for change, led initiatives, and made the Common Core a dream come true for students and parents. Learn the effective tools of advocacy, the pitfalls, and the joys of success.

Diana L. Suddreth
Utah State Office of Education, Salt Lake City

JEFFERSON BALLROOM (HILTON)

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EW Exhibitor Workshop | CF Teaching Computational Fluency | LT Teachers Leveraging Technology | NCTM Committee | NT New Teacher | PtA Principles to Actions | SJ Social Justice

334
Update on PARCC Mathematics Assessments

(General Interest) Session

Learn the latest news about the PARCC consortium's work from Linda Kaniecki, Senior Advisor of PARCC Mathematics. Linda will share information on PARCC's goals, progress, and how it is supporting Common Core State Standards implementation, including an opportunity to work with PARCC sample items. There will be ample time for Q&A.

Linda Jean Kaniecki
Partnership for Assessment of Readiness for College and Careers (PARCC), Washington, D.C.

GRAND BALLROOM C (HILTON)

335 LT
Video Games and Making Math More Like Things Students Like

(General Interest) Session

Students around the world are playing millions of hours of video games per day and, in many cases, they're enjoying those games more than they enjoy our math classes. Let's look at several of the most popular video games ever and pull out some lessons. As task designers, test givers, and classroom managers, what can we learn from those games?

Dan Meyer
Stanford University, California

GREAT HALL A/D (CONVENTION CENTER)

336
What Changes Should Be Made for the Next Edition of the CCSSM?

(General Interest) Session

Just as the NCTM Standards of 1989 were followed by the Principles and Standards of 2000 and the Focal Points of 2006, the Common Core State Standards of 2010 should not be viewed as eternal. We need to begin early to consider the necessary changes to correct problems and keep them up to date.

Zalman Usiskin
University of Chicago, Illinois

GRAND BALLROOM A (HILTON)

337
Getting Practical with the Common Core Standards for Mathematical Practice

(Pre-K–2) Session

Curious how the eight Mathematical Practices in the Common Core State Standards relate to pre-K–2 math instruction? Join this session for an interactive make'n' take session where you will discover how to break the eight practices down into kid-friendly terms and how to integrate them in daily instruction.

Shannon Marie Samulski
Staff Development for Educators, Peterbourgh, New Hampshire

R01 (CONVENTION CENTER)

338
Using Open Number Lines to Build Number Sense and Computation

(Pre-K–2) Session

Help children make meaning of a tool for addition and subtraction on an open number line. The Common Core State Standards suggests fluency with strategies. The open number line becomes a model that students can use flexibly, counting forward by jumps of ones or tens, and improve their understanding of the relationship between addition and subtraction.

Ann Carlyle
University of California, Santa Barbara

MELROSE (HILTON)

339 CF
Using Visual Tools to Support Early Numeracy

(Pre-K–2) Session

Visual tools such as five and ten frames, number lines, and concrete and digital materials help support a foundational sense of number. This is necessary for developing fluency and flexibility in working with numbers in computations and applying operations. A range of K–2 student work will be shared to demonstrate the use of visual tools.

Janice Novakowski
Richmond School District, Vancouver, British Columbia, Canada

ELMWOOD (HILTON)

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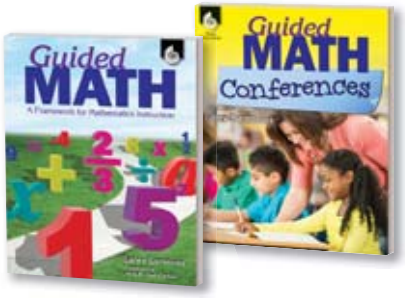
Laney Sammons

Math Conferences for Assessing, Teaching, and Learning

Thursday, April 10th
11:00am – 12:00pm
Hilton-Belle Chasse



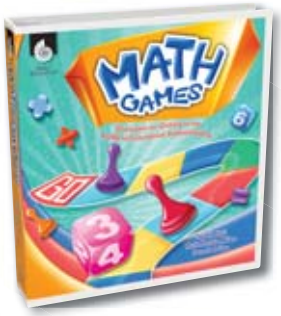
Ted H. Hull

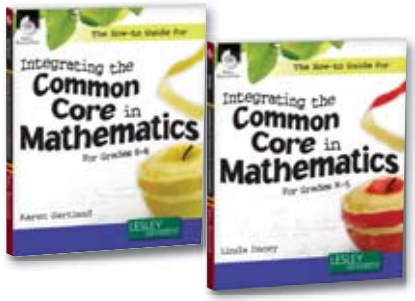
Don S. Balka

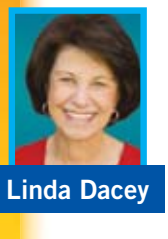
Ruth Harbin Miles

Mathematical Rigor through Core Practices and Classroom Games

Thursday, April 10th
1:00pm – 2:15pm
Convention Center
Room #238/239







Linda Dacey

Creativity and Critical Thinking: Your Core Workout

Friday, April 11th
9:30am – 10:30am
Convention Center
Room #209

Shannon Penrose-Maddux

Simple Strategies for Effective Mathematics Intervention

Friday, April 11th
11:00am – 12:00pm
Convention Center
Room #209

Visit us online for session descriptions at www.tcmpub.com/newsEvents

800-858-7339 www.tcmpub.com | www.shelleducation.com

9:30 A.M.–10:30 A.M.

340
Putting the Common Core and Response to Intervention Together Using the Workshop Approach

(Pre-K–5) Session

Using the workshop approach and implementing a continuous classroom improvement model, this presentation demonstrates how educators ensure their students are meeting proficiency as outlined in the Common Core State Standards (CCSS). The presenters will also share how their district has used professional development to equip their teachers to meet the needs of all students on the RtI model.

Paula L. Muehler
School District of Menomonee Falls, Wisconsin

GRAND SALON 19–22 (HILTON)

341 CF
Using Math Drawings and Math Talk for Understanding Algorithms

(Pre-K–5) Session

For multi-digit computation, the Common Core State Standards (CCSS) specify a learning path that begins with relating written methods to visual tools (concrete models or drawings) and explaining that method using place value. In this presentation, we will discuss visual tools for all operations and how math drawings and math talk support the eight CCSS Mathematical Practices.

Karen C. Fuson
Consultant, Fallbrook, California
Sybilla Beckmann
University of Georgia, Athens

GRAND SALON 9–12 (HILTON)

342
What Did You Do in Math Today?

(Pre-K–5, Research) Session

When parents ask "What did you do in math today?" the common reply is "Nothing" or "I don't know." Using hands-on activities, I will share ideas from grades 1–5 research classrooms, where students engage with "math worth talking about" through children's literature and use the arts for developing communication skills and sharing good math stories.

George Gadanidis
University of Western Ontario, London, Canada

230 (CONVENTION CENTER)

343
A Menu of Strategies: Building Flexible Thinking into the Curriculum

(3–5) Session

This session focuses on the role of flexible computation strategies in developing students' mathematical proficiency. We will discuss the interplay between conceptual models and numerical algorithms, and the teaching of varied strategies to meet the contextual demand of a problem and support the individual needs of students.

Elizabeth Cape
University of Illinois at Chicago
Jennifer Mundt Leimberer
University of Illinois at Chicago

ROSEDOWN (HILTON)

344
Racks, Lines, and Pieces: Developing Multiplication Fluency with Properties

(3–5) Session

The major clusters of Common Core standards in grades 3–5 depend on a conceptual understanding of, and procedural fluency with, multiplication and division situations. Using the properties of operations with number racks, number lines, number pieces, and arrays, you will be ready to develop efficient, accurate, and flexible ways of computing with your students.

Allyn Fisher
Math Learning Center, Salem, Oregon
Martha Ruttle
Math Learning Center, Salem, Oregon

R07 (CONVENTION CENTER)

345
Using TCM Lessons to Implement the Standards for Mathematical Practice

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

This interactive session will focus on how lessons from the journal *Teaching Children Mathematics* were used as catalysts in accelerating preservice teachers' comfort with leading and facilitating engaging mathematics learning environments. Lessons will be replicated and implications for teaching and learning will be shared.

Peter A. Sheppard
University of Louisiana at Lafayette
Mary Keller
University of Louisiana at Lafayette

JASPERWOOD (HILTON)

9:30 A.M.–10:30 A.M.

346
How Are Perseverance, Reasoning, and Critiquing Skills Assessed and Developed?

(3–8) Session

How are the Mathematical Practices (MPs) of the Common Core being assessed by PARCC and Smarter Balanced? What classroom structures and routines support student success? How can tasks be modified to increase the development of MPs 1, 2, and 3? Walk away from this session with easy-to-implement classroom routines and simple ways to modify tasks to meet the increased rigors of national assessments.

Shephali K. Chokshi-Fox
Webster Public Schools, Webster, Massachusetts
Jennifer Teahan
Westwood Public Schools, Westwood, Massachusetts

225/226/227 (CONVENTION CENTER)

347 PtA
Making Math Work for All: A Focus on Equity

(3–8) Session

The Common Core State Standards for Mathematics don't outline the structures requiring equitable access to high-quality mathematics instruction for all students. This session highlights equity and access in NCTM's new signature publication *Principles to Actions*. This session will outline the range of actions intersecting with equity and access in PtA.

Robert Q. Berry III
Board of Directors, National Council of Teachers of Mathematics; University of Virginia, Charlottesville

R05 (CONVENTION CENTER)

Don't Miss the
NCTM 2015 Annual Meeting & Exposition
Boston, MA • April 15–18

348
Communicating Calculations: Using Writing, Speaking, and Video to Explain Thinking

(6–8) Session

Effective math communication encompasses writing, speaking, and listening, so math instruction should include these parts as well. Students must be conscious of their answers in order to fully understand their work and that of their peers. In this session, I will share specific strategies for implementing this communication process, including the use of iPads.

Beth E. Nickle
Colonial School District, New Castle, Delaware
Erin Igo
Colonial School District, New Castle, Delaware

GRAND SALON 13–16 (HILTON)

349
Co-Teaching in Algebra

(6–8) Session

This session will encompass co-teaching strategies that have been found to be effective in the algebra classroom. We will share experiences with implemented strategies that have worked with students of varying ability levels. The presentation will be given in a differentiated manner and with model examples. Share our placement process.

Erin K. Colantonio
Hatboro Horsham School District, Horsham, Pennsylvania

223 (CONVENTION CENTER)

350
The Power of Puzzles: Critical Thinking, Differentiation, and Motivation

(6–8) Session

Jazz up your math class with classic puzzles like those by Martin Gardner. Introduce lessons, provide enrichment, or promote logical thinking and reasoning. Reinforce math skills or vocabulary in a puzzle-like format, and discover geometric characteristics through puzzle art. Connect the Common Core Standards for Mathematical Practices with content using puzzles.

Marilyn Dibble
Topeka Public Schools, Kansas

BELLE CHASSE (HILTON)

EW Exhibitor Workshop · CF Teaching Computational Fluency · LT Teachers Leveraging Technology · NCTM Committee · NT New Teacher · PtA Principles to Actions · SJ Social Justice

9:30 A.M.–10:30 A.M.

351
Augmented Reality Takes Students to the Real World of Mathematics

(6–12) Session

You've seen it in the movies and on TV. Now, see augmented reality in your classroom! Participants will experience augmented reality through their smart devices. See how mathematics, technology, and real-world applications "come alive" for middle and secondary students participating in augmented reality activities.

Rachelle Meyer
Baylor University, Waco, Texas
Doug Rogers
Baylor University, Waco, Texas
Trena L. Wilkerson
Baylor University, Waco, Texas

GRAND SALON 21–24 (HILTON)

352
CCSS Mathematics Practices: When and Why Will Students Use Them?

(6–12) Session

Equity strand presentation

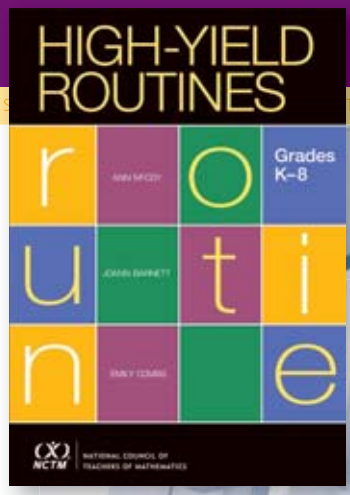
Research has shown that children of African descent have a tendency to be field dependent. Without this affective attachment, there is no invitation into the lesson. And without an invitation, how can we get all students to engage with the Standards for Mathematical Practice found in the Common Core State Standards (CCSS)? This session will provide examples of the affective domain that tend to invite children into lessons.

Kwame Anthony Scott
Benjamin Banneker-Djehuti Mathematics, LTD, Chicago, Illinois

243 (CONVENTION CENTER)

NCTM NATIONAL COUNCIL OF TEACHERS OF MATHEMATICS

MATH IS ALL AROUND US MATH IS ALL AROUND US MATH IS ALL AROUND US



NEW IN THE NCTM BOOKSTORE

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9:30 A.M.–10:30 A.M.

353
LOCUS: A Tool for Assessing Statistical Reasoning in the CCSS

(6–12) Session

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

Tim Jacobbe
University of Florida, Gainesville
Douglas Whitaker
University of Florida, Gainesville
Catherine Case
University of Florida, Gainesville

245 (CONVENTION CENTER)

354

Rethinking Probability in the Common Core and AP Statistics

(6–12) Session

An alternate research-based approach to teaching the probability content in the CC and in AP Stat will be explored. Participants will engage in activities suitable for classroom use, as probability information is translated into natural frequencies in a way that allows students to reason about probability in a sophisticated way without formulas.

Roxy Peck is currently professor emerita of statistics at California Polytechnic State University, San Luis Obispo. While at Cal Poly, she served as associate dean of the College of Science and Mathematics and as chair of the statistics department. In 2003 she received the American Statistical Association's Founders Award in recognition of her contributions to K–12 and undergraduate statistics education. Roxy served from 1999 to 2003 as the chief faculty consultant for the Advanced Placement Statistics exam, and she is a past chair of the ASA/NCTM Joint Committee on Curriculum in Statistics and Probability for grades K–12 and of the ASA Section on Statistics Education.

Roxy Peck
California Polytechnic State University, San Luis Obispo

GREAT HALL B/C (CONVENTION CENTER)

355
Curve Your Enthusiasm

(9–12) Session

Mysterious curves can serve as a powerful hook to engage students in mathematical investigation. Curves with exotic names like the Conchoid of Nicomedes, the Spiral of Archimedes, and the Witch of Agnesi have simple descriptions yet a wealth of intriguing properties to explore.

Gary Rubinstein
Stuyvesant High School, New York, New York

235/236 (CONVENTION CENTER)

356
High-Leverage Tasks: Deepening Mathematical Practices and Supporting English Learners

(9–12) Session

Engage in tasks that exemplify the expectations in the Common Core State Standards, and analyze these tasks for their level of cognitive demand, potential to develop students' expertise in the Mathematical Practices, language demand, and language access. Discuss how this process can enhance your current curriculum as you transition to new standards.

Cathy Martin
Denver Public Schools, Colorado
Becky Sauer
Denver Public Schools, Colorado

R03 (CONVENTION CENTER)

357
Meeting High School Mathematics Graduation Requirements with Title I Supports

(9–12) Session

Has your state increased the mathematics requirements for graduation? High school program directors will share how they built successful models with the help of teachers that are being implemented through collaboration with CTE and Title I programs that enable students to meet rigorous graduation requirements in mathematics.

Nancy Konitzer
National Title I Association, Washington, D.C.

FOUNTAIN ROOM (HILTON)

358
Reclaiming Lost Ground: Research-Informed Strategies for Underprepared Algebra Students

(9–12) Session

Today, all students must succeed in algebra, including those who are underprepared. These students may need more time in algebra, but time alone is not sufficient. Learn about comprehensive, research-guided strategies and resources from mathematics learning, literacy, social psychology, and special education to help underprepared students.

James Lynn
Learning Sciences Research Institute, University of Illinois at Chicago
Timothy M. Stoelinga
Learning Sciences Research Institute, University of Illinois at Chicago

GRAND SALON 3–6 (HILTON)

Check out the Exhibitor Workshops

359
Flipping the Classroom: Lectures and Homework Trade Places

(9–12, Higher Education) Session

Have you ever wondered what would happen if students listened to lectures outside the classroom and class time was devoted to problem solving? This session will explain the pedagogical implications of flipped classrooms. We will also discuss practical considerations and see how to teach the Pythagorean theorem in a flipped classroom.

Jenna R. Van Sickle
Fontbonne University, St Louis, Missouri

242 (CONVENTION CENTER)

360
Teach Inferential Reasoning on an Intuitive Level Early and Often!

(9–12, Higher Education) Session

Explore inference on an intuitive level by asking "What if …" questions and using simulations (physical and technological) to answer them. Activities will be shared to introduce inferential reasoning into the study of exploratory data analysis, linear regression, experimental design, probability, and sampling distributions.

Ruth E. Carver
Germantown Academy, Fort Washington, Pennsylvania

R09 (CONVENTION CENTER)

361
Bring Back Problem-Based Learning into Methods Courses!

(Higher Education) Session

Equity strand presentation

Classroom-tested ideas for using a problem-based learning (PBL) approach in teaching mathematics content methods to teacher candidates (K–6) will be presented. Preservice teachers had positive feedback about their experience with PBL and learned much about equity issues in math education.

Sylvia R. Taube
Sam Houston State University; TODOS: Mathematics for All, Huntsville, Texas

214 (CONVENTION CENTER)

9:30 A.M.–10:30 A.M.

361.1 EW
Formative Assessment and Hands-On Instruction for RtI and CCSS Success!

(General Interest) Exhibitor Workshop

The Moving with Math Learning Management System is the RtI solution that reaches Pre-K–high school students struggling with math and prepares them for success with the CCSS. Assessment and instructional strategies using the C-R-A methodology will be shared demonstrating how easy Moving with Math makes it to differentiate instruction and reach all students.

Math Teachers Press, Inc.
Minneapolis, Minnesota

208 (CONVENTION CENTER)

361.2 EW
New K–5 Math Curriculum for Building Mathematical Thinkers

(Pre-K–5) Exhibitor Workshop

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

The Math Learning Center
Salem, Oregon

219 (CONVENTION CENTER)

361.3 EW
Creativity and Critical Thinking: Your Core Workout

(Pre-K–5) Exhibitor Workshop

Come and investigate how to bring balance to your curriculum through creative arts activities and rich problems that deepen Core expectations. Leave with ideas you can implement immediately to strengthen students' problem-solving endurance and critical thinking in grades K–8.

Teacher Created Materials
Huntington Beach, California

209 (CONVENTION CENTER)

361.4 EW
Think Through Math: 5 Strategies to Transition to Common Core

(3–8) Exhibitor Workshop

Worried about the lack of readiness across grades for more rigorous standards? Learn how one district is making an effective transition. This presentation includes an overview of Think Through Math, a Web-based intervention solution for grades 3–algebra 1 that provides Common Core instruction and practice to underperforming students.

Think Through Learning Inc.
Pittsburgh, Pennsylvania

218 (CONVENTION CENTER)

9:45 A.M.–11:00 A.M.

362
Embedding Enrichment in Math Instruction for Primary Children

(Pre-K–2) Gallery Workshop

How can mathematics instruction for young children be appropriately rigorous? Using a variety of enrichment strategies can deepen whole class learning and challenge children who are ready. Join us to engage in activities that both support the Common Core and enrich learning in operations, geometry, and measurement.

Elizabeth Spaepen
Center for Elementary Mathematics and Science Education, University of Chicago, Illinois
Kathryn Flores
University of Chicago, Illinois
Amanda Ruch
Center for Elementary Mathematics and Science Education, University of Chicago, Illinois

210 (CONVENTION CENTER)

363
Finding "Hidden" Numbers

(Pre-K–2) Gallery Workshop

Your students will become number detectives as they find "hidden" numbers in activities to take numbers apart, compose new numbers, and make ten. Your young number detectives will use these hidden number skills to develop strategies for adding and subtracting one and two-digit numbers. Leave with ready-to-use activities.

Lori Price
St. Johns County Schools, St. Augustine, Florida

GRAND SALON 4–7–10 (HILTON)

9:45 A.M.–11:00 A.M.

364
Good Tasks and Questions: Having Meaningful Discussions with Young Children

(Pre-K–2) Gallery Workshop

Participants will explore lessons using strategies to promote class discussion when students engage in well-designed tasks. The presenters will share teachers' effective use of the five practices: anticipating, monitoring, selecting, sequencing, and connecting that are identified in the NCTM publication, *5 Practices for Orchestrating Productive Mathematics Discussions*.

Fay Zenigami
University of Hawaii, Honolulu
Melfied Olson
University of Hawaii, Honolulu
Hannah Slovin
University of Hawaii, Honolulu

MAGNOLIA (HILTON)

365
Making Sense of Number: "There IS an App for That!"

(Pre-K–2) Gallery Workshop

Participants will use both apps and hands-on manipulatives to build visual models for an in-depth understanding of number and operations. Lessons include work with number line, number rack, and magnetic tile that aligns with Common Core State Standards for Mathematics and highlights the eight Mathematical Practices.

Beverly S. Vogt
Math Consultant, Parkville, Missouri
Wanda C. Noblin
Spartanburg District Three, Glendale, South Carolina

211/212 (CONVENTION CENTER)

366
Introducing Fractions through Context with Emphasis on Common Core Progressions

(Pre-K–5) Gallery Workshop

Do you know how to help students discover fractions? We will show you how you can help students make connections between their whole number understanding and fractions through the use of story problems. We will focus on how the Common Core State Standards develop fraction sense as a progression from grade 1 through grade 5.

Leandra Joy Cleveland
Bentonville Public Schools, Arkansas
Lisa Marie Drewry
Bentonville Public Schools, Arkansas
Amy Beth Cheatham
Bentonville Public Schools, Arkansas

GRAND BALLROOM B (HILTON)

367
Seeing Dots: Using Arrays to Add, Subtract, Multiply, and Divide

(Pre-K–5) Gallery Workshop

This workshop (targeting mainly grades 1–4) will focus on using 100-dot arrays to explore the four basic operations. This cost-effective tool allows for students to represent, visualize, and thus understand numbers. After working through examples using this tool, you will want to use it with your students! Handouts will be provided.

Carollee Norris
School District #60 Peace River North, Fort St. John, Canada

R02 (CONVENTION CENTER)

368
Show Me the Model!

(Pre-K–5) Gallery Workshop

Come make models that develop conceptual understanding of fraction and decimal computation in kindergarten–grade 5. Help students communicate reasoning with pattern blocks, paper folding, base-ten grids, and tangrams. Learn how to use models and meaningful contexts strategically for adding, subtracting, multiplying, and dividing with fractions and decimals.

Noelle Won
California State University Stanislaus, Turlock
Kathryn Daniels
Adkison Elementary School, Modesto, California
Amy Bennett
Adkison Elementary School, Modesto, California

207 (CONVENTION CENTER)

9:45 A.M.–11:00 A.M.

369
Common Core Tasks: Exploring Mathematics through the Seasons

(Pre-K–2, 9–12) Gallery Workshop

This session will focus on Common Core–aligned algebra tasks with creative seasonal themes. Get ready to graphically design Halloween jack-o'-lanterns with systems of inequalities, take a look at how inverses can be applied in the real world, and explore linear functions on Black Friday.

Melissa G. Haun
Loudon County Schools, Tennessee

VERSAILLES (HILTON)

370
Math Content Plus Math Practices Equals Robust, Relevant Mathematics Instruction

(3–5) Gallery Workshop

Come bounce a ball or dress a goldfish! Engage in interesting tasks and instructional strategies designed to integrate mathematical practices with rigorous, relevant mathematical content. Identify key features of these experiences that develop students' algebraic thinking and deep mathematical understanding of number and operations.

Sandy Niemiera
Teaching Integrated Mathematics and Science (TIMS) Project, University of Illinois at Chicago
Elizabeth Cape
Teaching Integrated Mathematics and Science (TIMS) Project, University of Illinois at Chicago

228/229 (CONVENTION CENTER)

371
Developing Students' Conceptual Understanding and Reasoning about Fraction Division

(3–8) Gallery Workshop

Once your students develop strong number sense with fractions, how can they use those skills to perform fraction division? Participants will see student videos and engage in activities using manipulative materials and free online tools designed to help develop students' conceptual understanding and reasoning about division of fractions.

Steve Klass
Encinitas Union School District, California
Nadine Bezuk
Center for Research in Mathematics and Science Education (CRMSE), San Diego, California

R08 (CONVENTION CENTER)

372 NT
Exploring Centers and Variability with Balls, Cars, and Data

(3–8) Gallery Workshop

Try fun and engaging activities to help implement the data analysis and statistics strand of the Common Core! Using appropriate technology, we'll explore measures of center, measures of variability, and various display types. Participants will collect, measure, display, and analyze data. Handouts include tasks, activities, and teaching notes.

Laurie Boswell
The Riverside School, Lyndonville, Vermont

R06 (CONVENTION CENTER)

373
If Students Really Get Fractions, Algebra Will Be Easier

(3–8) Gallery Workshop

A strong understanding of fractions is critical for students to be successful in algebra. Come experience hands-on, research-to-practice strategies to help students grasp the essential fraction concepts and be able to apply them in solving math problems. A fractions number line and other manipulatives will be used throughout the presentation.

Janie Zimmer
Research-Based Education, Reading, Pennsylvania
Robert Jesberg
Math and Science Consultant, Chalfont, Pennsylvania

240/241 (CONVENTION CENTER)

374
Multicultural Literature: A Context for the Standards for Mathematical Practice

(3–8) Gallery Workshop

Learn how multicultural literature can be used to introduce students to a variety of cultures and promote the Common Core Standards for Mathematical Practice. Participants will experience authentic children's literature that has mathematical problems in the text or that provides a context for the development of mathematical reasoning and sense making.

Marilyn E. Strutchens
Auburn Univerity, Alabama

NAPOLEON BALLROOM (HILTON)

375
Students Succeed with Standards for Mathematical Practice in High-Needs Schools

(3–8) Gallery Workshop

We will work on a rich set of problems we've used successfully in high-needs schools. These problems, focusing on the Common Core Standards for Mathematical Practice, require spatial reasoning, organization of data, and generalized solutions. We share student work, including how one school used these problems as the basis for a school math symposium.

James R. Matthews
Siena College, Loudonville, New York
Jenny K. Tsankova
Roger Williams University, Bristol, Rhode Island

244 (CONVENTION CENTER)

2014 Regional Conferences:

Indianapolis	October 29–31
Richmond	November 12–14
Houston	November 19–21

376
Thinking Outside the Box: A Chocolatey Optimization Problem

(3–8) Gallery Workshop

Imagine that you are an engineer in the R&D department of a chocolate factory. For the launch of your company's new product, you need to design and construct a box that will maximize profit and minimize cost. Participants in this session will apply their knowledge of measurement and data, geometry, and functions to this Common Core–aligned, hands-on performance task.

Rita Sanchez
Teachers College, Columbia University, New York, New York
Greta Keltz
Teachers College, Columbia University, New York, New York

203/204/205 (CONVENTION CENTER)

377
$urvivor Mathematics: Out-Spend, Out-Balance, Out-Bargain

(3–8) Gallery Workshop

Math is everywhere, but do our students always understand that in a tangible way? Experience ways to bring math alive in your classroom by utilizing engaging lessons that allow your students to see how math is all around us. $urvivor Math will explore real-life skills such as writing checks, shopping, and paying bills in this hands-on workshop!

Adam Dovico
Ron Clark Academy, Atlanta, Georgia
Valerie Camille Jones
Ron Clark Academy, Atlanta, Georgia

GRAND BALLROOM D (HILTON)

378
From Mean to MAD: Building Understanding of Center and Spread

(6–8) Gallery Workshop

Do your students understand why mean is a measure of center? Do they know how to do more than just calculate the mean absolute deviation (MAD)? In this workshop, participants will experience a series of hands-on activities that can be used to help students develop conceptual understanding of mean and MAD as well as how they are connected.

Tamara Pearson
Clayton State University, Morrow, Georgia

217 (CONVENTION CENTER)

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379
Construction Zone: Creating Geometric Constructions Using Various Tools and Methods

(9–12) Gallery Workshop

This session will provide participants with an overview of methods and tools used to create formal geometric constructions. For many teachers, aligning instruction to the Common Core State Standards has brought geometric construction back to life. Classroom investigations using concrete materials and technology will be shared along with student work samples.

Kelli Ireton
Geary County Schools, Junction City, Kansas
Sherri L. Martinie
Kansas State University, Manhattan

221/222 (CONVENTION CENTER)

380
Do the Math—Like Your Life Depends On It

(9–12) Gallery Workshop

The pressure is higher than ever to use investigative tasks in mathematics. Come experience "life or death" investigations that help us understand what rigorous problem solving and modeling look like. Will you take the plunge with Sherlock Holmes or will you have time to escape from Poe? Come consider your choices and construct viable arguments.

Jennifer North Morris
Math Coach/Specialist, Tucson, Arizona
John Berray
West Hills High School, Santee, California

238/239 (CONVENTION CENTER)

381
Powerful Data Collection: Understanding Stratified Sampling and Blocked Experiments

(9–12) Gallery Workshop

In statistics, students learn about stratified random sampling and experiments that use blocking. However, students often don't understand the benefits of these methods and when to use them. In this session, we will use activities to show how blocking can improve an experimental design and stratified sampling can produce more precise results.

Josh Tabor
Canyon del Oro High School, Oro Valley, Arizona

215/216 (CONVENTION CENTER)

382 NT
Hands-On, Minds-On Calculus Activities

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

How can a calculus class look like an art class where students are working hard to finish their projects, while discovering new ideas through guided problem solving? In this session, you will learn ways to make calculus more interactive by engaging in hands-on, minds-on activities that you can bring back to the classroom.

Angie Hodge
University of Nebraska Omaha

R04 (CONVENTION CENTER)

383
Know When to Roll Them: A Real and Complex Numbers Activity

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

The hands-on activity will focus on the high school Number and Quantity domain of the Common Core, and in particular on complex numbers in polynomial equations. Participants will roll a ball on a piece of graph paper at a slant to form a parabola. A graphing calculator will be used to model the function and confirm real or complex solutions. The fundamental theorem of algebra will be demonstrated.

Kathleen Cage Mittag
Retired, University of Texas at San Antonio

GRAND SALON 15–18 (HILTON)

384
Complete STEM: Problem-Based STEM Tasks from PD to Classroom

(Preservice and In-Service) Gallery Workshop

Explore problem-based professional development (PD) that blends lesson study with STEM-rich, classroom-ready projects to engage and inspire teachers and their students. Projects will include launching objects, building roller coasters, bacteria growth, and others. Participants will connect to the Common Core's Standards for Mathematical Practice while participating in these tasks.

Mike Long
COMPLETE Center at George Mason University, Fairfax, Virginia
Padmanabhan Seshaiyer
George Mason University, Fairfax, Virginia
Jennifer Suh
George Mason University, Fairfax, Virginia

OAK ALLEY (HILTON)

11:00 A.M.–12:00 P.M.

385 NT
Common Core: A Teacher's Catalyst for Change

(General Interest) Session

In this session, early career teachers (and veterans) will engage in activities contrasting "typical" and "visionary" math instruction using these four practices: student-engaged learning, formative assessment, meaningful tasks, and effective grading processes. The challenge of implementing the CCSSM is the catalyst for you to make your instruction visionary.

Mona Toncheff
NCSM Regional Director Western Region 1; Phoenix Union High School District, Arizona
Timothy D. Kanold
Loyola University, Chicago, Illinois

R03 (CONVENTION CENTER)

386
Teacher Influence on Girls' Math Identity

(General Interest) Session

This session shares results of interviews with girls on how teachers positively and negatively influence girls' self-perceptions in relation to mathematics. Strategies and resources will be provided to help teachers develop approaches that support positive math identification in girls and all students.

Lynda R. Wiest
University of Nevada, Reno
Stephanie Vega
University of Nevada, Reno
Heather Crawford-Ferre
University of Nevada, Reno

GRAND SALON 19–22 (HILTON)

387
The Skeleton in the Closet: Rethinking Curriculum Maps

(General Interest) Session

Too often, curriculum maps are just lists of standards that do not translate into coherent mathematical experiences for students. Illustrative Mathematics is developing mathematical and pedagogical narratives for units, called unit blueprints, and ways of arranging these units, called curriculum plans, that scaffold coherent curriculum development.

Patrick Callahan
University of California, Los Angeles
Kristin Umland
University of New Mexico, Albuquerque

R09 (CONVENTION CENTER)

388

Why "Getting Real" Requires Being "Radical" in High-Stakes Education

Iris M. Carl Equity Address

(General Interest) Session

Teachers who can't skillfully negotiate the politics of language, racism, and testing can't adequately support their students. I will share examples of how all mathematics teaching is political, how teachers can use creative insubordination to be effective advocates for students and enable them to develop robust mathematical understanding and identities.

Rochelle Gutiérrez is Professor of Curriculum and Instruction and Latina/Latino Studies at the University of Illinois at Urbana-Champaign. Her research focuses on equity in mathematics education, race/class/language issues in teaching and learning mathematics, effective teacher communities, and the achievement gap. In 2011 the Association of Mathematics Teacher Educators awarded her the Excellence in Scholarship Award for her empirical research and theories on equity. She currently is the Principal Investigator on a large NSF grant that explores what it takes to develop high school mathematics teachers who engage their students in rigorous and creative mathematics and are committed to social justice.

Rochelle Gutiérrez
University of Illinois at Urbana-Champaign, Champaign, Illinois

GREAT HALL A/D (CONVENTION CENTER)

11:00 A.M.–12:00 P.M.

389
Exploring Mathematical Practice Standards through Teaching Channel Videos

(General Interest) Session

In this interactive workshop, we will use Teaching Channel's free video library to engage attendees in rich discussions about what the Common Core Standards for Mathematical Practice look like in action. Bring your observant eye as we dig into thought-provoking K–12 lessons together.

Lily Jones
Teaching Channel, San Francisco, California

214 (CONVENTION CENTER)

390
Using Technology While Engaging Learners in a Collaborative Mathematics Environment

(Pre-K–2) Session

Observe young learners engaged in discourse, assessment, collaboration, and questioning structured to enhance skills in number sense, computation, and estimation. Experience a variety of technology tools used to support the learning experience for children. Take away ideas you can apply in your primary classroom. Handouts with QR code links will be available.

Angela M. Waltrup
Frederick County Public Schools, Maryland
Dr. Christopher R. Horne
Frederick County Public Schools, Maryland

242 (CONVENTION CENTER)

391
Place Value: Making It Real

(Pre-K–2) Session

Learn fun and engaging activities—successfully used in the classroom—that will help the primary student understand the abstract concept of place value, while building skills in one-to-one correspondence, estimation, and cooperative learning.

Joyce A. Moon
Cane Bay Elementary School, Berkeley County Schools, Summerville, South Carolina
Sandra M. Powers
College of Charleston, South Carolina

BELLE CHASSE (HILTON)

392
Using Mathematics Journals to Assess Student Understanding

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

We will examine student's mathematical thinking and problem solving recorded as journal entries. We will discuss types of tasks and ways to present them to students, how to facilitate the journaling process, and what can be learned about student understanding of mathematics from their writings and drawings that can be used to facilitate growth.

Terry Rose
Western Carolina University, Cullowhee, North Carolina

FOUNTAIN ROOM (HILTON)

393
Fair-Sharing: Many Times More Than Meets the Eye!

(Pre-K–5) Session

Fair-sharing, or making equal distributions, embodies the conceptual basis of multiplicative thinking. Fun tasks in equipartitioning collections and wholes can build the alternative to repeated addition by developing early foundations of division, multiplication, ratio, and fraction. Explore the equipartitioning learning trajectory and how it helps teachers interpret the Common Core.

Jere Confrey
Amplify Learning, Durham, North Carolina
Nicole Panorkou
North Carolina State University, Raleigh

235/236 (CONVENTION CENTER)

394
RtI in Math: Evidence-Based Interventions for Struggling Students

(Pre-K–5) Session

What interventions support students struggling with mathematics? See how to implement the What Works Clearinghouse recommendations for increasing students' understanding of whole numbers, fractions, and problem solving. Participants will experience evidence-based strategies and receive handouts that summarize the recommendations and list resources.

Linda L. Forbringer
Southern Illinois University Edwardsville

JASPERWOOD (HILTON)

11:00 A.M.–12:00 P.M.

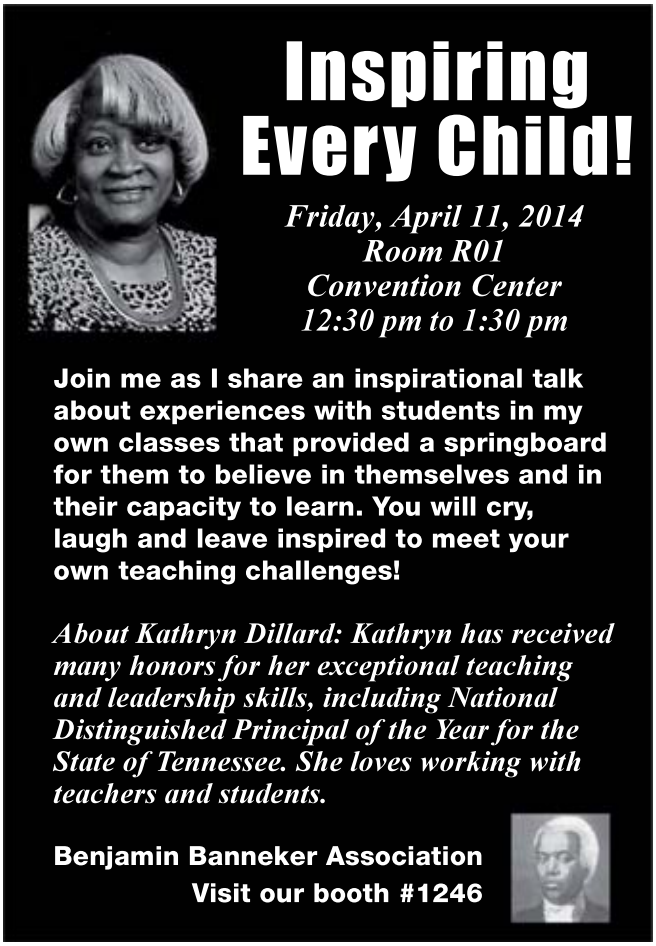
395
Visual Models for Number Facts: Ten Frames, Hundred Boards, and More

(Pre-K–5) Session

The Common Core State Standards hold that students should memorize number facts as a foundation for later mathematics. How can we avoid rote learning as we help students to visualize key math facts? In this session, you will learn how to use a variety of physical and computer models to support the development of number fluency.

Peter S. Price
Christian Heritage College, Brisbane, Queensland, Australia

R01 (CONVENTION CENTER)



396
Common Core Number Routines You Can "Count" On

(3–5) Session

Are you looking for a way to improve your students' number sense? Join us for the opportunity to see firsthand how you can effectively incorporate number routines to complement the Common Core State Standards. These easy-to-use routines could be implemented in your classroom as soon as next week!

Claudia Eckstrom
Howard County Public Schools, Ellicott City, Maryland
Cheryl Akers
Howard County Public Schools, Ellicott City, Maryland
Heather Dyer
Howard County Public Schools, Ellicott City, Maryland

GRAND SALON 3–6 (HILTON)

397
Recommended Apps and Strategies to Help Children Master Mathematical Concepts

(3–8) Session

We will review a selection of free and low-cost apps that help kids to learn math and share effective classroom strategies. These apps can be used in cooperative settings to support discussions, explorations, and discoveries—and then extended to support individual learners as they consolidate their understandings, master concepts, and build fluency.

Leslee Francis Pelton
University of Victoria, British Columbia, Canada
Tim Pelton
University of Victoria, British Columbia, Canada

JEFFERSON BALLROOM (HILTON)

398
Math 2.0: A New Vision for Learning and Teaching Math

(6–8) Session

See examples of how Web 2.0 and dynamic software transforms math learning and teaching. Participants will experience a series of unique and compelling activities that incorporate significant software environments (dynamic geometry and algebra math apps) that will help teachers to engage students in gaining mastery of powerful mathematical ideas.

Ihor Charischak
CLIME: Council for Technology in Math Education, White Plains, New York

GRAND BALLROOM A (HILTON)

399
One Lie of Middle School: 100 Miles = 2 Hours

(6–8) Session

Do your students have problems with rates? This session can help. Let's travel through the curriculum together and explicitly define the differences between rate problems as seen in elementary, middle, and high school classrooms. This session will illustrate why middle school teachers benefit from defining the measures of a rate as being in an equality.

Deana Deichert
University of Central Florida, Orlando
Tashana D. Howse
Daytona State College, Daytona Beach, Florida
Mercedes Sotillo
Full Sail University, Orlando, Florida

243 (CONVENTION CENTER)

400
Patterns and Operations: Teaching Algebra to Special Populations

(6–8) Session

In this session, a special educator and a math teacher present rich problem solving in algebra through multiple entry points. This teaching team will demonstrate an array of strategies that appropriately scaffolds material to an array of learners with a focus on how to create an environment that encourages students to persevere in problem solving.

Linda G. Singer
Springfield Public Schools, Massachusetts
Annie M. Parker
University of Massachusetts Amherst

GRAND SALON 9–12 (HILTON)

Visit the **NCTM Bookstore** and save **25% off** the list price of all publications and specialty items!

401
Incorporating AVID and Literacy Strategies in High School Mathematics

(6–12) Session

Learn how we are working to increase college and postsecondary preparedness for all students through such strategies as common planning, incorporating graphic organizers, and focusing on reading, writing, and reflection. Many of the strategies are inspired by the AVID program, a national program that focuses on preparing underrepresented students for college.

Mary K. Paulson
Madison Metropolitan School District, Wisconsin
Karen Paschke
Madison Metropolitan School District, Wisconsin

GRAND SALON 21–24 (HILTON)

402 LT
Keeping It Real: Teaching Math through Real-World Topics

(6–12) Session

How long does it take to burn off a Big Mac? In basketball, should you ever foul at the buzzer? We'll explore a range of real-world lessons that teachers can immediately use to address Common Core standards in fresh ways, ones that foster a rigorous understanding of math while challenging students to think critically about the world.

Karim K. Ani
Mathalicious, Charlottesville, Virginia

GREAT HALL B/C (CONVENTION CENTER)

403
Keeping Kids Engaged in the Math Classroom

(6–12) Session

Do your kids get antsy twenty minutes into your lesson? Do you want ideas for quick formative assessments? Do you need to address multiple intelligences and learning styles? Come and learn how to incorporate Simon Says, songs, and other activities into your math classroom to help your kids become more active and engaged learners.

Christine Thielen
Park Ridge-Niles School District, Illinois

R07 (CONVENTION CENTER)

11:00 A.M.–12:00 P.M.

404
Mathematics beyond the Classroom: Field Trips for Students with iPads

(6–12) Session

In this session, we examine how the iPad can be used to support excursions on or off the school campus where students can explore their own mathematical questions about our world. We will examine apps that support the creation of digital content for an excursion and that students can use to record, explain, and share their work.

Ron Lancaster
Ontario Institute for Studies in Education of the University of Toronto, Canada

225/226/227 (CONVENTION CENTER)

405
Harnessing the Power of Technology: Simulations for Learning Algebra Concepts

(6–12) Session

Have you used algebra tiles in your classroom? Explore this free simulation suite that uses virtual algebra tiles to introduce and practice a variety of mathematics concepts.

Erhan Selcuk Haciomeroglu
University of Central Florida, Orlando
Janet B. Andreasen
University of Central Florida, Orlando
Selma Powell
University of Central Florida, Orlando

GRAND SALON 9–12 (HILTON)

406
AP Computer Science Principles: A New AP Course and Exam

(9–12) Session

The AP program is developing a new AP Computer Science Principles course designed to complement the current AP CS A course. To address the challenge of broadening participation in STEM and computing fields, the new course aims to attract a diverse population with its rigorous and rich computational content engaging students in the creative aspects of the field.

Lien Diaz
College Board, Duluth, Georgia
Owen Astrachan
Duke University, Durham, North Carolina
Richard Kick
Newbury Park High School, Thousand Oaks, California

ROSEDOWN (HILTON)

407
Collaborate with Biology: Using Stats to Learn about Learning

(9–12) Session

Math and biology teachers are teaching ninth-grade students how we learn what we know. Biology teachers introduce scientific inquiry, experimental design, and graphs as a means of communicating data using examples from studies on learning. Concurrently, mathematics teachers introduce statistical analysis as a means of verifying experimental outcomes. Join us for an exploration of this vital collaboration.

Julie L. Smith
Greenhills School, Ann Arbor, Michigan
Amy Ward
Greenhills School, Ann Arbor, Michigan
Ruth Miller
Greenhills School, Ann Arbor, Michigan

245 (CONVENTION CENTER)

408
When Is a Circle an Octagon? In Chinese Checkers Geometry!

(9–12) Session

Chinese Checkers (CC) Geometry is a non-Euclidean geometry that is accessible to high school students. Participants will learn about the CC metric, its consequences, and how CC geometry can be explored in the classroom. Questions addressed include: What is pi in CC geometry? What do conic sections look like? What can we say about right triangles?

Bethany Noblitt
Northern Kentucky University, Highland Heights
Karolyn Keeler
Northern Kentucky University, Highland Heights

223 (CONVENTION CENTER)

409
Addressing the Crisis in Developmental Mathematics and College Readiness

(9–12, Higher Education) Session

Lack of college-readiness designation will severely hurt high school graduates in upcoming years, and placing students into dead-end remedial courses in college, once they get in, further hurts their chances of successful college completion. This session will discuss new pathways to college-level mathematics at high school and higher ed levels.

Amy Getz
Charles A. Dana Center, University of Texas at Austin

206 (CONVENTION CENTER)

410
MAI: Matrices, Audio, and Images—What's in Common

(9–12, Higher Education) Session

Explore image and audio file processing, applications dependent on matrix mathematics and technology. Matrices are required to handle large data sets. I will emphasize experiential learning opportunities for students and cross-disciplinary problem-solving methods.

Susan G. Helser
Mott Community College, Flint, Michigan

230 (CONVENTION CENTER)

411
Why Writing about Mathematics Matters in the College Classroom

(Higher Education) Session

When college algebra students and future elementary and middle school teachers write about mathematics, they reveal some interesting and perplexing understandings. Join us to analyze students' writing about algebra, geometry, and number concepts. We will share our writing tasks, insights gained, and ideas to improve instruction.

Ingrid Peterson
University of Kansas, Lawrence
Susan Gay
University of Kansas, Lawrence

GRAND SALON 13–16 (HILTON)

412
Investigating What the World Eats: Social Justice in the Classroom

(Preservice and In-Service) Session

How can we integrate social justice and mathematics education? We will explore activities appropriate for elementary and middle grades mathematics education courses that illustrate the connections between mathematics and social justice, while modeling for preservice teachers how to integrate these activities into their own classrooms.

Carla Tayeh
Eastern Michigan University, Ypsilanti
Joan Cohen Jones
Eastern Michigan University, Ypsilanti

R05 (CONVENTION CENTER)

413
Partnership in Action: A Collaborative Model for Designing Professional Development

(Preservice and In-Service) Session

In this session, we describe a project in which four design teams, each a partnership of higher education faculty and K–12 teachers, designed and delivered statewide professional development for middle grades teachers. We will explore the features of this collaboration, the successes, and the challenges of various educators co-designing teacher learning materials.

Brian J. Lindaman
California State University, Chico
Georgia Cobbs
University of Montana, Missoula
Jennifer Luebeck
Montana State University, Bozeman

MELROSE (HILTON)

413.1 ew
Seeing the Spiral: How Everyday Mathematics Aligns with CCSS

(Pre-K–5) Exhibitor Workshop

This presentation from Everyday Mathematics author Andy Isaacs, will explore why the program spirals, the research basis for spiraling, effectiveness of its use, and how a spiral curriculum can align with the Common Core State Standards. Participants will have the opportunity to examine a topic as it spirals through the curriculum.

McGraw-Hill Education
Columbus, Ohio

218 (CONVENTION CENTER)

11:00 A.M.–12:00 P.M.

413.2 EW
Accelerate Intervention: Student Success with Project-Based Learning

(Pre-K–5) Exhibitor Workshop

Real-world scenarios help build long-term retention of concepts for students and are especially effective in accelerating intervention students. Attend this session to experience how MHE SRA Number Worlds builds 21st-century skills in struggling students. Take with you a completed project, culminating activity, and a rubric for project evaluation.

McGraw-Hill Education
Columbus, Ohio

208 (CONVENTION CENTER)

413.3 EW
Simple Strategies for Effective Mathematics Intervention

(3–8) Exhibitor Workshop

Meeting the needs of students who struggle in mathematics can present a real challenge for classroom teachers. Come learn how an engaging guided teaching model can provide effective strategies for rich and rigorous instruction that blends both conceptual and procedural learning and fosters students' abilities to build mathematical connections.

Teacher Created Materials
Huntington Beach, California

209 (CONVENTION CENTER)

413.4 EW
Changing Opportunities, Changing Lives with the TI MathForward™ Program

(6–12) Exhibitor Workshop

Learn how our school used the TI MathForward Program to prepare students for success in algebra. We'll share our results and focus on the eight components of the program that led to increased student engagement and better understanding in math. We will show how we used formative assessment and technology to meet the needs of a diverse student body.

Texas Instruments
Dallas, Texas

219 (CONVENTION CENTER)

11:30 A.M.–12:00 P.M.

414
The Euclidean Algorithm for All Ages

(General Interest) Burst

The Euclidean algorithm finds the greatest common divisor of two integers. In upper elementary grades, it reinforces students' understanding of factors and the relationships between division and subtraction, but its applications continue into advanced mathematics. High school students can extend this algorithm to find the greatest common divisor of polynomials.

Jennifer Mangum
Louisiana School for Math, Science, and the Arts, Natchitoches
John Bradford Burkman
Louisiana School for Math, Science, and the Arts, Natchitoches

R08 (CONVENTION CENTER)

415
Supporting the Common Core through Mathematics-Literacy Checklists

(General Interest) Burst

Explore two mathematics-literacy checklists designed to help teachers meet the Common Core. Developed with teacher input, these tools serve as cognitive "safety nets" to ensure effective integration of appropriate strategies before, during, and after instruction. Discuss how to use the checklists for professional development and instruction.

Pixita del Prado Hill
SUNY Buffalo State, Buffalo, New York
Sue McMillen
SUNY Buffalo State, Buffalo, New York
Ellen Friedland
SUNY Buffalo State, Buffalo, New York

OAK ALLEY (HILTON)

416
How Do I Get through the Tricky Teens?

(Pre-K–2) Burst

Counting is a foundational skill for students to master in order to be able to meet the requirements of the Common Core. Young children struggle with their counting because of the complexity of our language and the teen numbers. This burst will look at what happens to a group of kindergarteners who are taught the number system in a different way.

TJ Jemison
Vermont State Department of Education, Montpelier
Barbara Blanke
California Polytechnic State University, San Luis Obispo

207 (CONVENTION CENTER)

11:30 A.M.–12:00 P.M.

417
Operation Scavenger Hunt

(Pre-K–2) Burst

Experience an interactive scavenger hunt where students use addition and subtraction to solve problems, practice number and operations in base ten, and apply properties of operations as strategies to add and subtract. Through movement and peer collaboration students will apply and connect their mathematical learning.

Lynn Gannon Patterson
Murray State University, Kentucky

217 (CONVENTION CENTER)

418
Avoid Teaching Rules That Expire!

(Pre-K–5) Burst

In this session, we outline common rules and vocabulary shared by teachers that elementary students tend to overgeneralize—tips and tricks that do not promote conceptual understanding, rules that "expire" later in students' mathematics careers, and vocabulary that isn't precise. Common Core State Standards "expiration dates" will be shared!

Sarah B. Bush
Bellarmine University, Lousville, Kentucky
Karen S. Karp
University of Louisville, Louisville, Kentucky
Barbara J. Dougherty
University of Missouri, Columbia

NAPOLEON BALLROOM (HILTON)

419
Mathematics Concept Maps: A Radical Road to Remembering

(Pre-K–5) Burst

A concept map refers to a graphic representation of concepts with linking connections. It is an inquiry technique that provides learners with an opportunity to demonstrate content retention. We will explore how learners can employ concept maps to clarify mathematical misconceptions and strengthen content connections while participating in creative hands-on/minds-on learning challenges.

Nancy L. Gallenstein
University of South Carolina Beaufort, Bluffton

210 (CONVENTION CENTER)

420
Monitoring Mathematical Comprehension: More Than Just the Right Answer

(Pre-K–5) Burst

Are students getting the right answer for the wrong reason? It is imperative that mathematical instruction and student activities incorporate practices that deepen student mathematical comprehension. Learn about specific strategies essential for identifying, monitoring and deepening student mathematical comprehension.

David A. R. Costello
English Language School Board of Prince Edward Island, Summerside, Canada

244 (CONVENTION CENTER)

421
More and Better Mathematical Vocabulary for All Students

(3–5) Burst

Learn about an action research project completed by two fourth-grade teachers. The project studied the use of graphic organizers, journaling, and peer turn-and-teach in helping students to learn math vocabulary. Both teachers reported an increase in test scores that assessed the use of vocabulary in math problems and an improvement in the recall of the words in a vocabulary survey.

Faye Bruun
Texas A&M University-Corpus Christi

R08 (CONVENTION CENTER)

422
Teaching and Learning Computation of Fractions through Story Problems

(3–5) Burst

Students learn best when math content is related to real-world situations. The use of story problems can help students to understand and use appropriate operations to solve fraction problems. We will present video clips and pictures that focus on the best practices for solving fraction story problems.

Connie Conroy
Howard County Public Schools, Ellicott City, Maryland
Kelly Krownapple
Howard County Public Schools, Ellicott City, Maryland
Heather Dexter
Howard County Public Schools, Ellicott City, Maryland

VERSAILLES (HILTON)

11:30 A.M.–12:00 P.M.

423
Data-Driven Instruction and Learning: Useful Data Tools for Classrooms

(3–8) Burst

Data-driven instruction should not be just one more item on the classroom teacher's overloaded plate. Interpreting student data throughout the year is the basis for reflective practices for both teachers and students. Let's look at some effective strategies for easy follow-up of assessment data over the course of the school year.

Ute Lentz
University of North Carolina at Charlotte
Stacy Brown Giaccone
Kannapolis City Schools, North Carolina

238/239 (CONVENTION CENTER)

424
Teaching Reading Comprehension in Math Using Read Aloud/Think Aloud

(3–8) Burst

Reading comprehension is vital to a student's success in math. Participants in this session will learn how to use Read Aloud/Think Aloud to teach reading comprehension in the mathematics classroom. RA/TA strategies will be explicitly modeled to demonstrate how they help with math comprehension, and student work samples will be shared.

Jeremiah Barrett
Holyoke Public Schools, Massachusetts
Melissa Hine
Holyoke Public Schools, Massachusetts

R06 (CONVENTION CENTER)

425
Linking Rich Tasks with Manipulatives through Questioning: A Grade 8 Perspective

(6–8) Burst

Learn the benefits of combining rich mathematics tasks with appropriate manipulatives and effective questioning strategies in number and operations. We will explore the changes in results of operations as students learn about integers, fractions, decimals, 0, and 1. This presentation will help teachers to explore these changes.

Douglas E. McDougall
University of Toronto, Canada
Mimi Kam
University of Toronto, Canada

215/216 (CONVENTION CENTER)

426
Using Grocery Circulars to Develop Proportional Reasoning Skills

(6–8) Burst

This session will present a lesson idea for developing proportional reasoning skills through the real-life context of searching for a "better buy" at the grocery store. We will discuss how to select and sequence comparisons to encourage students to develop multiple proportional reasoning strategies and an understanding of proportionality.

Jessica Audet de la Cruz
Assumption College, Worcester, Massachusetts

GRAND BALLROOM B (HILTON)

427
The How and Why of Integrated STEM Model-Eliciting Activities

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

This presentation will provide participants with a general description of implementing mathematical modeling through model-eliciting activities (MEAs). Examples will be provided on how MEAs can be used to integrate STEM subjects.

Cathrine Maiorca
University of Nevada, Las Vegas
Micah Stohlmann
University of Nevada, Las Vegas

221/222 (CONVENTION CENTER)

428
Algebra in the Common Core Classroom

(6–12) Burst

With the rigor of the Common Core, algebra concepts can be very difficult for students to grasp. This presentation will demonstrate ways to differentiate instruction, specifically with equations and functions utilizing various instructional strategies including technology, hands-on learning, and inquiry-based instruction.

DeAnna N. Owens
University of Memphis, Tennessee

R04 (CONVENTION CENTER)

11:30 A.M.–12:00 P.M.

429
Developing Algebraic Reasoning from Quantitative Reasoning

(6–12) Burst

In this interactive presentation teachers explore how algebraic thinking can be developed through quantitative reasoning using a sequence of carefully crafted rate problems. Our session emphasizes how to create these problems, how they are used to develop a different form of understanding in students, and what that understanding looks like.

Brian Shay
San Dieguito Union High School District, San Diego, California
Osvaldo Soto
San Diego Unified School District, California

240/241 (CONVENTION CENTER)

430
Keeping Algebra Real through Projects

(6–12) Burst

How do I implement this Common Core thing? The presenters have found success in answering this question by using projects in the algebra classroom. Projects are a way for students to work collaboratively, think creatively, and formulate meaningful conclusions. Through projects, Common Core principles can be taught without sacrificing time to content.

Rustin R. Reys
Park Hill School District, Kansas City, Missouri
Adam Hoffman Bezinovich
Sycamore Community School District, Illinois

GRAND SALON 15–18 (HILTON)

The NCTM **Member Showcase** has activities, lessons, sample journals, and more—stop by!

431
Revealing Secrets: How to Handle the Ambiguous Case

(9–12) Burst

We will present geometry problems involving the law of sines and the ambiguous case, show a student misconception, and describe how an award-winning teacher addressed that misconception to develop understanding. We'll show how the use of gestures, repetition, metaphor, and visual diagrams can enhance instruction for this topic and others.

Jihyun Hwang
University of Iowa, Iowa City
Dennis Kwakka
University of Iowa, Iowa City
Melissa McAninch
Central College, Pella, Iowa

GRAND SALON 4–7–10 (HILTON)

432
GSI: Geometry Scene Investigation

(9–12) Burst

In "The Case of Where Has Polly Gone?" students learn and apply geometry concepts through activities woven together by a crime-solving narrative. This presentation offers strategies to engage students in curricular content through yearlong storytelling. While presented in a geometry context, the strategies are adaptable to any content area.

Daniel Anthony Fiore
Propel Charter Schools, Pittsburgh, Pennsylvania

211/212 (CONVENTION CENTER)

433
Interactive Videos: Engaging Students in and out of the Classroom

(9–12, Higher Education) Burst

Mathematics teaching videos often lack the interactive element that grabs students' attention. This session will introduce a series of interactive videos, where students have to engage with the content of the videos to help them develop a better understanding of the content by responding to questions about concepts, processes, and common mistakes.

Haitham S. Solh
American University in Dubai, Dubai, United Arab Emirates

GRAND BALLROOM D (HILTON)

11:30 A.M.–12:00 P.M.

434
A Brief Introduction to High-Press Questioning

(Preservice and In-Service) Burst

High-press questioning is a high-leverage teaching practice designed to press students to explain their thinking through sustained questioning and/or explore the content they are explaining more deeply. A brief overview of the practice will be explained and a video example from the presenter's ninth-grade classroom will be shown.

Nicole Bannister
Clemson University, South Carolina

MAGNOLIA (HILTON)

435
Focusing on Fluency: Connecting to the Standards for Mathematical Practice

(Preservice and In-Service) Burst

Are you struggling to implement the Common Core State Standards while juggling the fluency needs of students? Explore how the Standards for Mathematical Practice can enhance the development of student fluency. Learn specific instructional techniques you can use to support student success in fluency.

Beth Kobett
Stevenson University, Baltimore, Maryland
Francis (Skip) Fennell
Past President, National Council of Teachers of Mathematics; McDaniel College, Westminster, Maryland

R02 (CONVENTION CENTER)

436
Learning to Teach Secondary Mathematics in the Rural South

(Preservice and In-Service, Research) Burst

Hear the results and discuss the implications of a qualitative study of secondary mathematics teachers: an undergraduate intern, her classroom mentor teacher, and an alternative-route intern teaching in rural schools that persist in traditional mathematics curricula and instructional practices and focus on test preparation.

Roslyn B. Miller
Mississippi State University, Starkville

203/204/205 (CONVENTION CENTER)

12:30 P.M.–1:30 P.M.

437

Evaluating Alignment to the CCSSM: How Do Your Resources Rate?

(General Interest) Session

The Publishers' Criteria for the Common Core State Standards for Mathematics (CCSSM) was written to give guidance to educators, publishers, and state leaders about Common Core–aligned materials. This session will review ten criteria in detail and discuss ways in which the content and structure of these standards should be reflected in classroom materials.

Jason Zimba was a lead writer of the Common Core State Standards for Mathematics and is a Founding Partner of Student Achievement Partners. He holds a BA from Williams College in mathematics and astrophysics; an M.Sc. in mathematics from the University of Oxford; and a PhD in mathematical physics from the University of California at Berkeley. As a researcher, Zimba's work spanned a range of fields, including astronomy, astrophysics theoretical physics, philosophy of science, and pure mathematics. His academic awards include a Rhodes Scholarship and a Majorana Prize for theoretical physics. Jason is also the author of *Force and Motion: An Illustrated Guide to Newton's Laws*. As an educator, he has taught physics, mathematics, and other subjects to college students, adult prison inmates, children of non-English-speaking immigrants, and disadvantaged high school students.

Jason Zimba
Student Achievement Partners, New York, New York
Barbara Beske
Student Achievement Partners, New York, New York

GRAND BALLROOM A (HILTON)

438 PtA
Drop Everything up to Mathematics

(General Interest) Session

The NCTM publication *Principles to Action* describes steps that lead to an equitable classroom where all students can learn mathematics. In this session, one of its authors will explore the Equity Principle and discuss obstacles and interventions to bring this vision to reality.

Miriam A. Leiva
Cone Distinguished Professor Emerita, Mathematics Department, University North Carolina Charlotte

243 (CONVENTION CENTER)

12:30 P.M.–1:30 P.M.

439
Changing Everyone's Mind-Set about Math

(General Interest) Session

Student resilience in math comes through a combination of effective learning skills and a sense of self-efficacy, the belief that through effort one can achieve mastery. Learn how to help students, teachers, and parents develop and support the growth mind-set that underlies motivation and success in math.

David Dockterman
Harvard University, Cambridge, Massachusetts
Lisa Blackwell
Mindset Works, San Carlos, California

GREAT HALL A/D (CONVENTION CENTER)

440
Flipped Mastery Learning: Mathematics without Boundaries

(General Interest) Session

Join the Algebros for a presentation of their flipped mastery model which allows students to progress at their own level by demonstrating mastery of all mathematical standards. We will explain why flipped mastery is changing how students learn and provide in depth information for flipping your class. Check out flippedmath.com and bring questions.

Michael J. Brust
Department of Defense Dependents Schools, Washington, D.C.
Corey Sullivan
Department of Defense Dependents Schools, Washington, D.C.
Tim Kelly
Department of Defense Dependents Schools, Washington, D.C.

245 (CONVENTION CENTER)

441
Inspiring Every Child

(General Interest) Session

Equity strand presentation

Join me as I share an inspirational talk about experiences with students in my own classes that provided a springboard for them to believe in themselves and in their capacity to be successful as doers of mathematics. You will cry, laugh, and leave inspired to meet your own teaching challenges!

Kathryn L. Dillard
Borenson and Associates, Allentown, Pennsylvania

R01 (CONVENTION CENTER)

442

NCTM Business Meeting

(General Interest) Session

Join NCTM leadership for an overview of recent activities and strategic priorities for the coming year.

Linda M. Gojak
President, National Council of Teachers of Mathematics; John Carroll University, University Heights, Ohio

214 (CONVENTION CENTER)

443

PtA

Principles to Actions: Defining Core Practices of Teaching Mathematics

(General Interest) Session

Quality teaching ensures success for all students. In its new publication, NCTM frames a core set of highly effective teaching practices for mathematics, advancing our professional knowledge of representations, struggle, fluency, evidence, and more. We will examine this framework and help you prepare for your next professional actions.

DeAnn Huinker directs the Center for Mathematics and Science Education Research and is a professor in the Department of Curriculum and Instruction at the University of Wisconsin-Milwaukee. She has chaired the editorial panel for *Teaching Children Mathematics* and has lead many projects to develop teacher leadership in mathematics.

DeAnn Huinker
University of Wisconsin-Milwaukee

GRAND BALLROOM C (HILTON)

Thank you to the Program Committee members. Your time and dedication made this year's Annual Meeting a huge success!

Friday

12:30 P.M.–1:30 P.M.

444
Got Strategy? Get REAL

(Pre-K–2) Session

Do your students understand the concept of place value when adding and subtracting within 1,000? (2.NBT.7) Come and learn *real* strategies to help them develop deep understanding along the journey to the standard algorithm. Learn how students use models, drawings, and Number Talks to justify their reasoning when solving problems.

Kendra J. Johnson
Swansfield Elementary, Howard County Public Schools, Columbia, Maryland
Sally Goss
Howard County Public Schools, Ellicott City, Maryland
Joan Tellish
Stevens Forest Elementary, Columbia, Maryland

230 (CONVENTION CENTER)

445 CF
Playing with Numbers: Developing Flexible Computation Strategies

(Pre-K–2) Session

A strong number sense foundation is key for students' development of flexible computation strategies. Participants will learn effective and playful ways to help students build deep, connected understandings of number relationships through number sense routines. Specific classroom examples will be shared.

Jessica F. Shumway
Utah State University, Logan

GRAND SALON 9–12 (HILTON)

446
Using Multidimensional Assessments to Build Perspectives on Number Sense

(Pre-K–5) Session

Number sense is complex. Assessment practices should reflect that complexity. Normal assessments look through single lenses, leading to flat perspectives of multifaceted processes. This presentation explores the creation of multidimensional assessments to integrate assessment techniques, build portraits of learning, and inform teaching.

David Woodward
Boulder Valley School District, Colorado

GRAND SALON 13–16 (HILTON)

447
Differentiation Is Not a Radical Expectation … It's the Real Deal!

(3–5) Session

Learner needs grow and change, standards set high expectations,and universal screeners identify more students who are not meeting benchmarks. Math instruction calls for communicating thinking, solving complex problems, and making sense of procedures. No longer is differentiation for all learners a radical expectation; it truly is the real deal.

Renee Everling
Math Solutions, Sausalito, California
Diane Reynolds
Math Solutions, Sausalito, California

223 (CONVENTION CENTER)

448 CF
Fractions Are Numbers

(3–5) Session

Both the Common Core State Standards and the IES practice guide *Developing Effective Fractions Instruction for Kindergarten through 8th Grade* stress understanding fractions as numbers and the importance of using number lines as a central representational tool in teaching fraction concepts. We will discuss these ideas and how they can support developing computational fluency with fractions.

Jim Lewis
University of Nebraska–Lincoln

ELMWOOD (HILTON)

449
Fractions as Numbers: Eliciting Student Thinking through Questioning Techniques

(3–5) Session

In this presentation, we will help teachers to better understand student thinking and reasoning with fractions by improving their questioning techniques. Participants will be presented with classroom video scenarios and will reflect on their own questioning strategies while engaging in a discussion to improve conceptualization of student thinking.

Crystal Marie Vesperman
Indiana University, Bloomington
Julie Amador
University of Idaho, Coeur d'Alene

BELLE CHASSE (HILTON)

12:30 P.M.–1:30 P.M.

450
Three Proven Strategies for Adding Rigor and Making Math Real

(3–5) Session

The PARCC and Smarter Balanced assessments have set the bar to new heights. In this session, learn how to actively engage your students with released, rigorous assessment items. Explore research-proven strategies that give students the self-satisfaction brought on by reasoning, perseverance, and deep conceptual understanding. Bask in the glow of your students' joy as they think and learn mathematically.

Robyn Silbey
Robyn Silbey Professional Development, Gaithersburg, Maryland

R07 (CONVENTION CENTER)

451
Take the Leap: Use Mathematical Errors as Springboards for Learning

(3–8, Research) Session

Engaging students in discussion of errors can deepen their mathematical understanding by compelling them to construct viable arguments and critique the reasoning of others (Standard for Mathematical Practice #3). This session will use video and simulation to explore specific teaching practices for leveraging mathematical errors as springboards for learning.

Wendy S. Bray
University of Central Florida, Orlando

235/236 (CONVENTION CENTER)

452
Understanding and Solving Word Problems Using Singapore's Model Drawings

(3–8) Session

Many students struggle when asked to solve word problems involving fractions, ratio, and percent. Model drawing helps students visualize, understand, and solve complex word problems, and provide a bridge to algebraic techniques. Experience sample solutions and learn how to use this effective technique for helping students develop deep understanding.

Richard Bisk
Worcester State University, Massachusetts

GRAND SALON 21–24 (HILTON)

453
The Squares of Pythagoras: A Radical Connection

(6–8) Session

Do eighth graders really *know* what the Pythagorean theorem means? And what are those radical values in terms of the real number system? In this session, we will share a concrete proof of the theorem. We will also explore a concrete method for finding the square root of any number and relate these activities to the Mathematical Practices of the Common Core.

Teresa Banker
Kennesaw State University, Georgia

GRAND SALON 19–22 (CONVENTION CENTER)

454
Frack This: Engaging Students Mathematically in Community Issues

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

Two teachers teamed up to create activities for their students to explore the controversy around the drilling method known as fracking in their area. Students explored the mathematics behind fracking and weighed the costs and benefits to formulate mathematically based opinions. This session will describe how these teachers created place-based social justice mathematics lessons.

Katie A. Hendrickson
Athens City Schools, Ohio

GRAND SALON 19–22 (HILTON)

455
Algebra Nation: A Free Online Student Resource

(6–12) Session

The University of Florida has joined forces with e-learning innovator Study Edge to create and deliver Algebra Nation—a highly effective, intensive, social-learning, 24/7, free, online end-of-course-prep resource for students. Algebra Nation is a potent supplemental tool that teachers can utilize as part of their lesson plans and even assign as homework.

Joy Bronston Schackow
University of Florida, Gainesville
Cynthia Greenberg
Pinellas County School Board, St. Petersburg, Florida
Melody Pak
University of Florida and Study Edge, Gainesville

JEFFERSON BALLROOM (HILTON)

12:30 P.M.–1:30 P.M.

456
Cubes, Cubes, and More Cubes

(6–12) Session

The purpose of this presentation is to allow middle school and high school teachers to explore a series of hands-on activities that help students engage in spatial visualization. These activities are designed to foster geometric and algebraic thinking and to promote rich mathematical discourse in the classroom.

Arsalan Wares
Valdosta State University, Georgia

FOUNTAIN ROOM (HILTON)

457
"Selling" the Common Core to Reluctant Learners

(6–12) Session

Building student success requires us not only to teach, but also to sell students on the importance of building the Mathematical Practices and the content standards of the Common Core. Drawing on the book *To Sell is Human* by Daniel H. Pink, this session will share strategies for persuasion that have worked in the consumer world and will work in the classroom.

Timothy Paul Pope
Kendall Hunt Publishing, Dubuque, Iowa

R05 (CONVENTION CENTER)

458
The Flipped Math Class: Why We Love It!

(6–12) Session

Learn how to flip your class and become more thoughtful in your practice. Our students watch our notes online for homework and spend class time developing mathematical habits of mind. We will share how we use the iPad, Camtasia, and other tools to improve student engagement and how we make the most of our class time with students.

Ilana B. Marcus
Framingham High School, Massachusetts
Karen Strader
Framingham High School, Massachusetts
Stephanie Adams
Framingham High School, Massachusetts

GREAT HALL B/C (CONVENTION CENTER)

459
Transitioning from Arithmetic to Algebra: Examples and Student Issues

(6–12) Session

Do your students struggle with making the jump from basic arithmetic to algebra? Come to this session where you will not only see examples of how smooth this transition can be, but you will also learn how this view of algebra can expose and solve student misconceptions.

Heather Gamel
Nicholls State University, Thibodaux, Louisiana

ROSEDOWN (HILTON)

460
"What If?" Questions in Real-World Contexts: Sensitivity Analysis

(9–12, Higher Education) Session

Participants will learn to use Solver, a standard Excel add-in, to solve linear programming problems with four or more decision variables. They will also learn how to interpret Answer and Sensitivity Reports, which allow exploration of "what if" questions in real-world contexts and engage students in critical thinking, reasoning, and sense making.

Thomas G. Edwards
Wayne State University, Detroit, Michigan
S. Asli Özgün-Koca
Wayne State University, Detroit, Michigan
Kenneth R. Chelst
Wayne State University, Detroit, Michigan

MELROSE (HILTON)

461
Why Variances Add—And Why It Matters

(9–12, Higher Education) Session

The second most important theorem in statistics says to add variances to find the standard deviation of the sum or difference of independent random variables. We'll see why the Pythagorean theorem of statistics is true and how to make it make sense. And we'll see where it matters in probability, inference, and even the central limit theorem itself.

Dave Bock
Retired, Ithaca High School, New York

R09 (CONVENTION CENTER)

12:30 P.M.–1:30 P.M.

462 NT
Using Problem Solving as a Springboard to Content Domains

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

The National Council of Teachers of Mathematics promotes problem solving as an integral part of K–12 mathematics education, yet many teachers struggle to fit this into an already-packed curriculum. This presentation will engage you in solving problems and in exploring the possibilities for using them as a launch into multiple content domains.

Erin R. Moss
Millersville University, Pennsylvania

206 (CONVENTION CENTER)

463
A Successful Secondary Methods Class ELL Unit

(Higher Education) Session

University departments of education emphasize coverage of English language learners (ELL) in programs for pre-service teachers; we do this in secondary methods classes. The observation-reports of our student-teachers teaching ELL classes were phenomenal. We will present the materials and resources used for the methods class along with samples of student-teachers' lessons.

Wendy Hageman Smith
Longwood University, Farmville, Virginia
Leah N. Shilling-Traina
Longwood University, Farmville, Virginia

R03 (CONVENTION CENTER)

465 LT
The Mathtwitterblogosphere: Creating Your Own Online Professional Learning Communities

(Preservice and In-Service) Session

As budgets are slashed, so are supports and opportunities for professional engagement. Come learn about how teachers are turning to Twitter, blogs, and other online platforms to create their own professional groups to engage in the intellectual work of education.

Ashli J. Black
Illustrative Mathematics, Tucson, Arizona
Chris Hunter
School District No. 36 (Surrey), Surrey, Canada

225/226/227 (CONVENTION CENTER)

466
Using Rich Problems to Teach the Mathematical Practices

(Preservice and In-Service) Session

Teachers must have understanding of and experience with the Standards for Mathematical Practice before they can support their students' use. We will analyze several rich problems, define what makes them rich, and identify practices most likely to contribute to solving these problems. We also discuss their use with pre- and in-service teachers.

Judith E. Jacobs
JEJMath Ltd., Ann Arbor, Michigan
Yvonne Lai
Department of Mathematics, University of Nebraska-Lincoln
Dave I. Kennedy
Shippensburg University, Pennsylvania

GRAND SALON 3–6 (HILTON)

466.1 EW
Student Engagement = Common Core Success!

(Pre-K–5) Exhibitor Workshop

Enhance student learning with concepts tied to the real world with models and visuals to solidify their understanding. Discover how to use our MH My Math Real-World Videos and Dinah Zike's Foldables to engage students and prepare their minds for deeper thinking. Other tools such as interactive white boards, apps and games will also be explored.

McGraw-Hill Education
Columbus, Ohio

208 (CONVENTION CENTER)

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Curriculum Associates

12:30 P.M.–1:30 P.M.

466.2 EW
Math in the Real World

(6–8) Exhibitor Workshop

Marine biologist Mike Heithaus host of the National Geographic Channel's Crittercam series, has developed amazing Real-World Videos for Houghton Mifflin Harcourt and their new Go Math! 6–8 series. Come visit Mike and see how you can integrate these videos into your classroom.

Houghton Mifflin Harcourt
Boston, Massachusetts

209 (CONVENTION CENTER)

466.3 EW
Instructional Strategies for Implementing CCSS

(6–12) Exhibitor Workshop

When it comes down to implementation of Common Core State Standards, how will our classroom practices change? How will they affect what students are doing? How will we make CCSS a reality in our classrooms? In this session, you will learn hands-on, practical strategies for engaging your students in the Mathematical Practices using technology.

Texas Instruments
Dallas, Texas

219 (CONVENTION CENTER)

466.4 EW
Core-Plus: Contemporary Math in Context

(6–12) Exhibitor Workshop

Discover what research says is the most effective method of math instruction. Core-Plus is built on best practices on how students learn and uses a real-world problem-based approach to math instruction. Join us as we take a test drive of Core-Plus Mathematics and learn how you can change math in your classroom.

McGraw-Hill Education
Columbus, Ohio

218 (CONVENTION CENTER)

1:00 P.M.–2:15 P.M.

467 CF
Flexible Strategies for Addition and Subtraction: Algorithms That Work

(Pre-K–2) Gallery Workshop

When students have a deep understanding of number, they are able to add and subtract in flexible ways. They partition into tens and ones and use compensation to create friendly numbers. Together, these strategies help make addition and subtraction easy! Come explore tasks, games, and stories to make addition and subtraction accessible for all.

Carole Fullerton
Mind-Full Consulting, Vancouver, Canada

NAPOLEON BALLROOM (HILTON)

468
Number Sense through the Standards for Mathematical Practice

(Pre-K–2) Gallery Workshop

Number sense is central to mathematics. The Common Core State Standards for Mathematics charts a course for primary students to develop number sense. In this session, participants will explore practice-rich activities that develop number sense in young mathematicians. Activities and resources for daily instruction will be shared.

John J. Sangiovanni
Howard County Public School System, Ellicott City, Maryland
Kay B. Sammons
Howard County Public School System, Ellicott City, Maryland

R08 (CONVENTION CENTER)

469 NT
DO—SAY—WRITE: Supporting Student Sense Making, Reasoning, and Proof

(Pre-K–5) Gallery Workshop

Participants will engage in activities that support the use of the Common Core's Mathematical Practices related to reasoning, sense making, and proof. Hands-on activities will give participants experiences embedded within the mathematical practices and applied across a variety of concepts and topics.

Eomailani Kukahiko
University of Hawaii at Manoa, Honolulu
Joseph Zilliox
University of Hawaii at Manoa, Honolulu

211/212 (CONVENTION CENTER)

1:00 P.M.–2:15 P.M.

470
Engaging Children with Number Sense, Fractions, Problem Solving, and Discourse

(Pre-K–5) Gallery Workshop

Learn strategies, including the use of manipulatives, to develop number sense, place value, estimation, fractions and problem solving. The speaker will demonstrate the power of mathematical discourse to develop concepts, reasoning, and mathematics vocabulary using hands-on activities and real-life problems.

Donna L. Knoell
Educational Consultant, Shawnee Mission, Kansas

R06 (CONVENTION CENTER)

471
Using Students' Misconceptions to Create Instructional Tasks

(Pre-K–5) Gallery Workshop

An important aspect of students' math proficiency is the ability to analyze and critique the reasoning of others. This session will use student work samples to create instructional tasks that focus on mathematical misconceptions. Participants will leave with a specific process they can use individually or with colleagues.

Michele Brown Carney
Boise State University, Idaho
Jackie Ismail
Boise State University, Idaho
Keith Krone
Boise State University, Idaho

GRAND BALLROOM D (HILTON)

Don't Miss the
NCTM 2015 Annual Meeting & Exposition
Boston, MA • April 15–18

472
Engaging Students in Mathematical and Science Practices

(3–5) Gallery Workshop

Bring rigor into your mathematics instruction through integration of the Common Core State Standards for Mathematics (CCSSM) and the Next Generation Science Standards (NGSS). Participants will engage in a mathematics and science task to learn how to modify instruction to integrate mathematical and science practices consistent with both the CCSSM and the NGSS.

Nicole Paulson
Partnership for Effective Mathematics and Science Teaching and Learning, Salt Lake City, Utah
Brett Moulding
Partnership for Effective Mathematics and Science Teaching and Learning, Ogden, Utah

R04 (CONVENTION CENTER)

473
Making, Generalizing, and Justifying Conjectures about Number and Operations

(3–5) Gallery Workshop

Learn about tasks—and ideas for creating tasks—that encourage students in grades 3–5 to reason about number and operations and to make, justify, refute, refine, and generalize conjectures. Discussion will focus on how to encourage generalizing and shape students' justification in the classroom in order to bring out important ideas about number and operation.

Michael H. Perkowski
University of Missouri, Columbia
John K. Lannin
University of Missouri, Columbia

GRAND SALON 15–18 (HILTON)

474
Talk Moves: Tools for Building Productive Discussions in Math Class

(3–5) Gallery Workshop

This presentation will focus on "talk moves" that teachers can use to facilitate productive discussions in math class. After participating in a discussion that features these moves, participants will view and discuss video clips of discussions from actual mathematics classes.

Nancy C. Anderson
Consultant, Pembroke, Massachusetts

VERSAILLES (HILTON)

EW Exhibitor Workshop | CF Teaching Computational Fluency | LT Teachers Leveraging Technology | NCTM Committee | NT New Teacher | PtA Principles to Actions | SJ Social Justice

1:00 P.M.–2:15 P.M.

475
Exploring Innovative Techniques for Teaching Arithmetic Using the CRA Approach

(3–8) Gallery Workshop

Learn how to implement innovative techniques for teaching basic arithmetic operations using the concrete-representational-abstract (CRA) approach to affirm students' conceptual and procedural knowledge of numbers and operations in base ten. Participants will engage in hands-on activities using research-based techniques for developing competence in number sense and place value.

Joseph Sencibaugh
Webster University, St. Louis, Missouri
Dan Sinclair
Mastery Educational Services, Fallbrook, California

240/241 (CONVENTION CENTER)

476
What Does Number Sense for Rational Numbers Look Like?

(3–8) Gallery Workshop

We will share student videos and classwork to describe how students develop number sense around fractions. We will discuss how models help to develop strong mental images and how these images help students to make sense of operations involving rational numbers. You will experience how different models enhance understanding of symbolic representations.

Terry R. Wyberg
University of Minnesota, St. Paul
Cristina Miller
University of Minnesota, St. Paul
Sue Ahrendt
University of Wisconsin-River Falls

238/239 (CONVENTION CENTER)

477
Blood Count: Simulating Real-Life Data and Probability

(6–8) Gallery Workshop

Blood Count is a math/science simulation activity where students use random sampling techniques to make a comparison between preset blood sample profiles and a patient's sampled "blood." Diagnosis about a possible blood disease is based upon a patient's profile. We will explore the use of probability and data analysis in this activity and make connections to the Common Core.

Tom Murray
San Mateo-Foster City School District, California

207 (CONVENTION CENTER)

478
It Just Depends: Games and Simulations for Exploring Compound Events

(6–8) Gallery Workshop

Play, simulate, and discuss how to use games and simulations to develop student understanding of independent and dependent events. These activities use tree diagrams as well as experimental and theoretical probability to analyze games and simulations. Receive copies of student activity pages and teaching guides that include summaries of the mathematics.

Virginia Lewis
Longwood University, Farmville, Virginia
Maria A. Timmerman
Longwood University, Farmville, Virginia

221/222 (CONVENTION CENTER)

479
Let's Get Real: Using Number and Operations to Discover Geometry

(6–8) Gallery Workshop

During this interactive workshop, we will embrace the relationship between deeper learning and the Common Core State Standards as we construct and analyze the five Platonic solids. Using regular polyhedra and number and operations as a guide, we will make discoveries that link Plato to Euler's geometry. Connections will also be made to literacy and science.

Martha Y. Parrott
Northeastern State University, Broken Arrow, Oklahoma

215/216 (CONVENTION CENTER)

1:00 P.M.–2:15 P.M.

480
NASA Smart Skies: Math and Technology 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 online air traffic control simulator to solve problems involving 2–5 airplanes. Extend learning via an air traffic control mobile app game. All materials are available free online.

Rebecca A. Green
NASA Ames Research Center, Moffett Field, California
Gregory W. Condon
NASA Ames Research Center, Moffett Field, California

R02 (CONVENTION CENTER)

481
What's So Common about the Common Core?

(6–8) Gallery Workshop

President's Series presentation

Find out what connects and makes the Common Core State Standards (CCSS) common, and experience the CCSS in whole-class investigations with real problem solving. Formative assessment will be embedded in these engaging investigations to meet the needs of all learners. Suggestions for how to craft, adjust, and adapt ongoing learning will be provided.

Sandy Schoff
Council of Presidential Awardees in Mathematics (CPAM), Anchorage, Alaska
Lynn Gannon Patterson
Murray State University, Kentucky

GRAND BALLROOM B (HILTON)

482
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, as we construct physical representations of 3-D reflection and rotation. Learn strategies for finding and exploring symmetry of simple and exotic solids to deepen student understanding of basic, yet difficult, concepts.

Aniceta Skowron
Geometro, Ancaster, Canada

OAK ALLEY (HILTON)

483
Practicing Mathematical Practices

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

This workshop will provide math teachers with activities that incorporate an in-depth understanding of the grades 6–8 algebra content in the Common Core while demonstrating the eight Standards for Mathematical Practice. Teachers will explore activities that use manipulatives, iPad apps, and computer programs aligned to the Common Core algebra standards.

Christine Lynne Larson
South Dakota State University, Brookings
Sharon Vestal
South Dakota State University, Brookings

217 (CONVENTION CENTER)

484
Geometry Projects: Escher, Sierpinski, and Snowflakes in Your Classroom

(6–12) Gallery Workshop

This presentation will focus on hands-on, student-created geometry projects. These projects help students visualize concepts such as similarity, rotations, reflections, translations, and symmetry.

Paul Kelley
Anoka High School, Minnesota

244 (CONVENTION CENTER)

485
Implementing GeoGebra, the Dynamic Mathematics Touch Screen Applet

(6–12) Gallery Workshop

GeoGebra is a free interactive mathematics software applet. During this workshop, participants will learn how this app can transform a classroom into a room full of visualization and in-depth learning. We will create interactive worksheets that can be used to engage students in the Common Core Standards for Mathematical Practice.

Edward M. Knote
University of Central Florida, Orlando
Erhan Selcuk Haciomeroglu
University of Central Florida, Orlando
Bhesh R. Mainali
University of Central Florida, Orlando

MAGNOLIA (HILTON)

1:00 P.M.–2:15 P.M.

486
Assessing Mathematical Practices Using Practice-Forward Tasks

(9–12) Gallery Workshop

What mathematical tasks can you use to assess both content *and* the Mathematical Practices? Rich tasks can assess both content and process standards. Come experience "practice-forward" tasks that exemplify the focus, coherence, and rigor of the Common Core. Analyze student work to learn how to create practice-forward tasks.

Adrienne Wooten
Deer Valley Unified School District, Phoenix, Arizona
Mona Toncheff
Phoenix Union High School District, Arizona

GRAND SALON 4–7–10 (HILTON)

487
Finding Volumes of Solids of Revolution

(9–12) Gallery Workshop

We will use wedding bell, pineapple, and Easter egg decorations to find volumes of solids of revolution. A graphing calculator will be used to find a regression equation that can then be put into the disc or washer method. This is a great project to do at the end of the year when the students are tired of lectures and PowerPoint displays!

Theresa A. Guard
Pinecrest Academy, Cumming, Georgia

210 (CONVENTION CENTER)

488
Games, Chance, and Predictions: Explorations with Statistics and Probability

(9–12) Gallery Workshop

Have fun exploring games and real-world applications of chance! Come experience hands-on activities and problem-solving strategies for analyzing categorical data in two-way tables, understanding independence, computing conditional probability, calculating probabilities of compound events, and finding the expected value of a random variable.

Linda Bridges
University of Alabama in Huntsville

228/229 (CONVENTION CENTER)

489
Cryptography: Keeping Secrets Using Algebra and Geometry

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

With the increasing reliance on e-mail and texting, how can mathematics help ensure that these communications remain private? Come learn ways to do so and get ideas for engaging students in the basic ideas of cryptography within the context of algebra and geometry topics.

André Mathurin
Bellarmine College Preparatory, San Jose, California

203/204/205 (CONVENTION CENTER)

2:00 P.M.–3:00 P.M.

490

Assessment in the Common Core Standards Era: Opportunities and Challenges

(General Interest) Session

In Spring 2015, the Common Core assessments will be administered for the first time. What actions will best prepare us—students, teachers, leaders—for these assessments? What challenges must we address in light of these assessments? And what can we learn from past assessment improvement efforts to help us meet these challenges?

Diane J. Briars
President-Elect, National Council of Teachers of Mathematics, Reston, Virginia

GREAT HALL A/D (CONVENTION CENTER)

2:00 P.M.–3:00 P.M.

491
Building Intrinsic Motivation for 21st-Century Mathematics Learning

(General Interest) Session

Intrinsic motivation depends on three factors: autonomy, mastery, and purpose. Extrinsic motivators negatively impact creativity and problem solving. Increasing the intrinsic motivation of your lessons will lead to students being genuinely interested in learning the mathematics, not just in earning a grade. Based on Daniel Pink's best seller *Drive.*

Michael Grote
Retired, Columbus City Schools, Ohio

GRAND SALON 13–16 (HILTON)

492
Convert Math Anxiety into Math Achievement

(General Interest) Session

Mathematics anxiety is real and affects both educators and students. Join an honest discussion about the truths, myths, and practical strategies to combat this crippling stumbling block. Gain insight from the work of a formerly math-anxious fourth-grade student. Change math anxiety to math achievement and promote student confidence and success.

Carol A. McGehe
K12, Inc., Herndon, Virginia

BELLE CHASSE (HILTON)

493
Fostering Gender Equity: Classroom Ideas and Strategies

(General Interest) Session

Equity strand presentation

After high school, many young women turn away from STEM careers. Since gender attitudes affect classroom interactions throughout schooling, we can't wait to promote gender equity. Are single gender classrooms the answer? Examine research and classroom activities that foster gender equity in mathematics instruction at all grade levels.

Jessica M. Deshler
West Virginia University, Morgantown
Elizabeth A. Burroughs
Montana State University, Bozeman

245 (CONVENTION CENTER)

494
Identifying Effective Math Computation Strategies for Struggling Students

(General Interest) Session

This session will assist educators in selecting evidence-based math computation strategies for struggling students. Participants will learn how to utilize assessment practices to determine the computation area requiring intervention, students' instructional level, and math computation strategies targeting acquisition or fluency of math facts.

Michelle L. Hinzman
Keystone Area Education Agency, Dubuque, Iowa
Barbara A. Pline
Keystone Area Education Agency, Delhi, Iowa

GRAND SALON 19–22 (HILTON)

495 LT

One of Us: Every Teacher a Blogging Teacher

(General Interest) Session

We know that both intentional reflection and regular collaboration are crucial components of improving classroom practice. However, immediate responsibilities often conspire to create conditions that are both isolating and leave insufficient reflection time. Learn how to take reflection online to motivate and accelerate your professional growth.

Kate Nowak writes lessons and supports teachers at the website Mathalicious. Since 2005, she has written the blog f(t), and her work has been published in the journal *Mathematics Teacher*. Previously, she taught the gamut of secondary mathematics courses at Fayetteville Manlius High School near Syracuse, New York. She completed a Master of Arts degree in teaching mathematics as a Klee Fellow at the State University of New York at Binghamton. In 2010 she was named an Outstanding Educator by the Technology Alliance of Central New York.

Kate Nowak
Mathalicious, Charlottesville, Virginia

225/226/227 (CONVENTION CENTER)

496
Teaching Mathematics for Social Justice As a Context for CCSSM

(General Interest) Session

Equity strand presentation

Several learning activities will be presented to illustrate teaching mathematics for social justice as a radical and realistic approach in the implementation of the Common Core State Standards for Mathematics (CCSSM) content and practices, including number and operations. Possible adaptations for different grade levels will also be discussed.

Enrique Ortiz
University of Central Florida, Orlando

214 (CONVENTION CENTER)

497
What Do Teachers of Mathematics Know?

(General Interest, Research) Session

President's Series presentation

This presentation will report on an Australian project aimed at identifying key aspects of K–12 teachers' knowledge for teaching mathematics. Examples of items used to assess teachers' knowledge will be presented along with suggestions for sustainable ways their knowledge might be developed.

Kim Caroline Beswick
University of Tasmania, Launceston, Australia

FOUNTAIN ROOM (HILTON)

498
Using Storybooks to Promote Thinking in the Common Core Classroom

(Pre-K–2) Session

Mathematics is everywhere, including in storybooks. This session will share ways to stimulate young students to think about numbers and operations and engage in problem solving using storybook characters and settings. Sample lessons and student work will be shared as well as several strategies to immediately implement in your classroom.

Jane M. Wilburne
Penn State Harrisburg, Middletown, Pennsylvania

223 (CONVENTION CENTER)

499
What's the Problem?

(Pre-K–2) Session

Participants will create and analyze word problems using common addition and subtraction situations. We will discuss additive strategies and how students develop conceptual understanding as they move through these strategies. Handouts containing sample addition and subtraction situations will be provided.

Loria A. Allen
University of Alabama Huntsville; Alabama Math Science and Technology Initiative
Carrie Warden
University of Alabama Huntsville; Alabama Math Science and Technology Initiative

GRAND SALON 3–6 (HILTON)

500
Stop Counting by Ones … or Else

(Pre-K–5) Session

Are some of your second graders—or even fifth graders—still counting by ones? Using fingers to count, or whatever? Yes? Then they will probably be doing it next year, and the next, and the next … unless we teach them strategies that go beyond counting up. This session will address a planned sequence for accomplishing this important and difficult task.

Mary Behr Altieri
Putnam/Northern Westchester BOCES, Yorktown Heights, New York

R01 (CONVENTION CENTER)

501
Closing the Achievement Gap with "Deep Practice"

(3–5) Session

Equity strand presentation

This presentation will cover two essential components vital for intermediate (grades 3–5) students to build a positive relationship with mathematics: instant feedback and deep practice. The focus will be on the connection between these components and how they enable students to overcome cultural boundaries and inequities within the classroom.

Robert Sun
Suntex International, Easton, Pennsylvania
Cred Dobson
Suntex International, Easton, Pennsylvania

243 (CONVENTION CENTER)

2:00 P.M.–3:00 P.M.

502 CF
Computational Fluency with Fractions?—Yes, It Is Possible!

(3–5) Session

Why do some of the algorithms for fractions work? This session will explore the mathematics behind adding, subtracting, multiplying, and dividing fractions. It will provide ideas for how to build students' computational fluency with fractions.

Suzanne H. Chapin
Boston University, Massachusetts

R05 (CONVENTION CENTER)

503
Mathematics Achievement in Title I Schools

(3–5) Session

Title I Academic Award-winning Schools will share their work overcoming the challenges of a high poverty environment to attain significant growth in mathematics achievement. Principals and teachers will explain how they changed belief systems and added academic rigor to instruction that upheld their convictions that every child is a mathematician.

Gayle D. Pauley
National Title I Association, Washington, D.C.

ELMWOOD (HILTON)

504
Writing to Learn, and Learning to Write in Mathematics

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

William Zinsser once stated, "Writing is how we think our way into a subject and make it our own." Yet finding the time to support student writing in mathematics can be a challenge. This session presents six easy-to-implement, easy-to-evaluate strategies that effectively attend at the same time to the goals of both mathematics and writing.

Eula E. Monroe
Brigham Young University, Provo, Utah
Brad Wilcox
Brigham Young University, Provo, Utah

R09 (CONVENTION CENTER)

505
Area, Measurement, and Data Analysis through Modeling Pelican Colonies

(3–8) Session

Modeling of real-world situations is a powerful tool for building and applying students' knowledge. The Pelican Problem requires students to explore concepts such as measurement, data, and the area of irregular shapes while protecting pelican breeding grounds. Participants will learn to use this and other modeling activities through sample work.

Forster Ntow
University of Minnesota, Twin Cities
Aran W. Glancy
University of Minnesota, Twin Cities
Tamara J. Moore
University of Minnesota, Twin Cities

GRAND SALON 21–24 (HILTON)

506
Integrating Vocabulary with Content Support

(3–8) Session

The language support in mathematics is intertwined with developing understanding. As teachers, we must analyze both context and content in making instructional and assessment decisions. We will share "rational" considerations and "real" ideas for providing strong language support.

Stefanie D. Livers
University of Alabama, Tuscaloosa

235/236 (CONVENTION CENTER)

2015 Annual Meeting & Exposition proposal deadline is May 1, 2014. Go to www.nctm.org/speak to submit your proposal!

EW Exhibitor Workshop | CF Teaching Computational Fluency | LT Teachers Leveraging Technology | NCTM Committee | NT New Teacher | PtA Principles to Actions | SJ Social Justice

507
Thinking Deeply about Area Measurement

(3–8, Research) Session

In this session, we will describe instructional tasks designed to help students think deeply about area measurement. We will share student work highlighting common strategies and errors and show how our interventions helped students develop new understanding about area. Participants will leave with new area tasks aligned with the Common Core State Standards for Mathematics.

Amanda L. Miller
Illinois State University, Normal
Cheryl L. Eames
Illinois State University, Normal
Craig J. Cullen
Illinois State University, Normal

206 (CONVENTION CENTER)

508
The CCSS Mathematical Practices Come Alive: Focus on Proportional Reasoning

(6–8) Session

Learn to help middle grade students think deeply about ratio, rate, and slope using the Mathematical Practices of the Common Core State Standards (CCSS) for constructing and critiquing arguments, communicating precisely, and modeling with mathematics. Explore proportional reasoning activities across the middle grades to prepare students for CCSS curriculum and the new assessments.

Katherine Gavin
University of Connecticut, Storrs
Linda Jensen Sheffield
Northern Kentucky University, Highland Heights

R07 (CONVENTION CENTER)

509
The Great Nutella Heist: A Rich Mathematical Problem

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

How do you get students asking mathematical questions and developing their own problem-solving tasks? From the first presentation of a task to the resulting student work, this session presents how to incorporate the Great Nutella Heist of 2012 and other rich tasks into your classroom to provide engaging and rigorous mathematical practice.

Bonnie S. Spence
University of Montana, Missoula

JASPERWOOD (HILTON)

510
Standard(s) Statistics: Exploring Common Core Statistics Content and Practices

(6–12) Session

Explore middle and high school Common Core statistics content and practices with hands-on, cognitively demanding tasks. Engage with data-driven activities exploring center, variability, and distribution, and consider how these and similar tasks can advance students' abilities to answer statistical questions through statistical problem solving.

Susan A. Peters
University of Louisville, Kentucky

ELMWOOD (HILTON)

511
Setting the Scene: Designing Your Problem-Based Classroom

(6–12) Session

Effective problem-based learning classrooms adeptly foster problem-solving skills in students by steeping instruction in the context of complex tasks. In this session, we will explore ways to design a problem-based environment to find, adapt, and facilitate complex problems and to build a progression of problems into coherent units and curricula.

Geoff M. Krall
New Tech Network, Napa, California

JEFFERSON BALLROOM (HILTON)

2:00 P.M.–3:00 P.M.

512
Tasks to Identify and Develop Algebraic and Problem-Solving Talents

(6–12) Session

Unusual algebraic reasoning tasks will be presented, including those that require data, the rank ordering of solutions, working backwards to figure out the problem, or defending opinions. Other tasks require identifying what's wrong-if anything, thinking and choosing, predicting and explaining, connecting calculations to contexts, and making sense of situations.

Carole E. Greenes
Arizona State University, Tempe

GREAT HALL B/C (CONVENTION CENTER)

513
Transitioning in Fractions from Pictures to Algebra

(6–12) Session

Students' understanding of defining wholes for fraction situations provides them with a foundation for understanding how to define variables in algebra. Come explore strategies to help students coordinate fraction models with algebraic expressions, and learn instructional techniques to help them develop fluency with these processes.

Jennifer M. Tobias
Illinois State University, Normal
Vince Kirwan
Illinois State University, Normal

ROSEDOWN (HILTON)

514
Enjoy the Mandelbrot Set: Be Quadratic and Get Complex!

(9–12) Session

President's Series presentation

This presentation will describe the beautiful object known as the Mandelbrot set. While this set is extremely complicated from a geometric point of view, we will show that, as long as you know how to add and how to count, you can understand this fascinating geometry completely. The goal is to show students how exciting contemporary mathematics is.

Robert L. Devaney
Boston University, Massachusetts

MELROSE (HILTON)

515
Rainforests and Drive-Ins: Modeling the Changing Climate with a TI-Nspire

(9–12) Session

What does rainforest loss have to do with America's love of fast food? The Common Core State Standards ultimately point toward cross-disciplinary instruction. Join a math teacher and an AP Biology teacher to explore rainforest loss, its causes, and its possible effects. Use the photo capabilities and data features of a TI-Nspire to model climate-related problems.

Chris Henderson
Lawrence County Board of Education, Moulton, Alabama
Jay Vick
Lawrence County Board of Education, Moulton, Alabama

GRAND BALLROOM A (HILTON)

516
Super Mathematics of Game Shows

(9–12) Session

How much should you wager on a Daily Double? Should you "Press Your Luck" or pass? How can Pascal's triangle apply to Plinko? These questions lead to topics in probability, statistics, and game theory. Examine game shows from the dual perspectives of players and designers. Audience members will win valuable prizes! (Note: not actually valuable.)

Bowen Kerins
Education Development Center (EDC), Waltham, Massachusetts

R03 (CONVENTION CENTER)

517
Deaf Students in the Mathematics Classroom: Ideas for Instruction

(9–12, Higher Education) Session

Review of effective ideas in teaching mathematics to deaf and hard-of-hearing students, including online video tutorials, language/vocabulary resources, and active learning within a mainstream setting. Presenters and resources are part of the DeafTEC project (Technological Education Center for Deaf and Hard-of-Hearing Students).

Dawn Hoyt Kidd
Texas School for the Deaf, Austin, Texas
Carol E. Marchetti
Rochester Institute of Technology, Rochester, New York
Gary C. Blatto-Vallee
National Technical Institute for the Deaf at Rochester Institute of Technology, Rochester, New York

242 (CONVENTION CENTER)

2:00 P.M.–3:00 P.M.

518
Using Literature to Understand Numbers and Operations and Algebraic Thinking

(Higher Education, Preservice and In-Service) Session

Preservice teachers often have narrowly defined views about numbers and operations in general and algebraic thinking in particular. Conversely, many prospective teachers love to read and have an affinity towards children's literature. This session highlights the pedagogical practices used to infuse literature to explore mathematical ideas.

Christopher Jett
University of West Georgia, Carrollton

230 (CONVENTION CENTER)

518.1 ew
Math Upgrade Common Core Lessons Using Songs, Video, and Games

(3–8) Exhibitor Workshop

Math Upgrade features musical, high-interest lessons covering all Common Core State Standards for grades 1–8. Find out how teachers can transform their classes using interactive whole-class lessons and individual online courses. Learn how students with special needs and below basic skills can master the Common Core curriculum.

Learning Upgrade LLC
San Diego, California

208 (CONVENTION CENTER)

518.2 ew
Pearson's Digits : Where Math Clicks!

(6–8) Exhibitor Workshop

Experience digits, the only middle grades math curriculum built for today's digital students with interactive whiteboard lessons, online assessments, robust RtI, and automatic grading and reporting. Find out how digits harnesses the power of technology to optimize your time and individualize their learning—both in and out of the classroom.

Pearson
Upper Saddle River, New Jersey

218 (CONVENTION CENTER)

518.3 ew
Common Core Special Focus: Transformational Geometry

(6–12) Exhibitor Workshop

One major change in the Common Core State Standards is an emphasis on transformations in geometry. In this workshop, we will examine how students use TI-Nspire™ technology to investigate similarity and congruence through the lens of transformations. We will focus on gaining a deeper understanding of the mathematics emphasized in these standards.

Texas Instruments
Dallas, Texas

219 (CONVENTION CENTER)

518.4 ew
Go Math!

(Higher Education) Exhibitor Workshop

Are you looking for an exciting new curriculum that couples exploration with direct instruction and has everything that a student and teacher needs in one place?Houghton Mifflin Harcourt has your answer! Go Math!

Houghton Mifflin Harcourt
Boston, Massachusetts

209 (CONVENTION CENTER)

Pick up a copy of the on-site *Daily News* for up-to-date conference information

Friday

2:45 P.M.–4:00 P.M.

519
Daily Math Investigations: Making It Meaningful!

(Pre-K–2) Gallery Workshop

Daily Math Investigations are invitations for students to think and play with mathematical ideas. Teachers present tasks and pose questions to promote curiosity about numeracy concepts. Teachers are able to observe, listen, and reflect on what their students know and can do. Learn about how you can use Daily Math Investigations with your students.

Sandra F. Ball
Surrey School DIstrict #36, Surrey, British Columbia, Canada

217 (CONVENTION CENTER)

520
Serving Up Recipe Math

(Pre-K–2) Gallery Workshop

Participants will learn to integrate mathematical concepts into snack time by using hands-on, kid-tested, recipes for healthy snacks. Truly an integrated approach, these recipes use literature to address Common Core skills such as place value, number and operations, fractions, and measurement. Come and build a repertoire of hands-on math strategies.

Cindy Cliche
McFadden School of Excellence, Murfreesboro, Tennessee

238/239 (CONVENTION CENTER)

521
Building Fraction Sense with Manipulatives and Technology

(Pre-K–5) Gallery Workshop

Join us in this workshop exploring activities to help your students build fraction sense. We will use manipulatives as well as technology, and handouts will be provided. If you have an iPad, please bring it to explore some apps with us.

Barbara Boschmans
Northern Arizona University, Flagstaff
Brian P. Beaudrie
Northern Arizona University, Flagstaff

R08 (CONVENTION CENTER)

522
Mind the Gap: Bridging Geometry and Number Sense

(Pre-K–5) Gallery Workshop

Imagine that you are a civil engineer. The main bridge in your city was damaged by a recent storm. Your task is to help design and construct a strong and stable bridge with a limited budget. Participants will apply their knowledge of geometry and number and operations to this Common Core–aligned, hands-on performance task.

Greta Keltz
Teachers College, Columbia University, New York, New York
Rita Sanchez
Teachers College, Columbia University, New York, New York

R02 (CONVENTION CENTER)

523
Connect Multiplication and Division Using Area Models

(3–5) Gallery Workshop

Throw out those traditional algorithms for multiplication and division! Join us as we progress from grade 3 to grade 5 using area models. You will be amazed how area models provide multiple entry points for students, build conceptual understanding, and provide a seamless connection between multiplication and division. Walk away with great activities!

Kimberly Edelson
Deer Valley Unified School District, Phoenix, Arizona
Melinda Villalovos
Deer Valley Unified School District, Phoenix, Arizona

GRAND SALON 15–18 (HILTON)

524
Thinking about Fractions: Helping the 1/2's and the 1/2-Nots

(3–5) Gallery Workshop

The Common Core State Standards challenge elementary students and teachers to think about fractions in new ways. This presentation will engage participants in several classroom-ready activities that use the number line and other manipulatives to help students develop a complete understanding of fractions from notation to operations.

Joann Barnett
Missouri State University, Springfield
Emily Combs
Clinton Public Schools, Missouri
Ann McCoy
University of Central Missouri, Warrensburg

207 (CONVENTION CENTER)

Join Us For Music, Math, and Fun!

Math Upgrade Common Core Lessons Using Songs, Video, and Games

April 10, Thursday 2 pm, Convention Center Room 208
&
April 11, Friday 2 pm, Convention Center Room 208

Math Upgrade features musical, high-interest lessons covering all Common Core standards grades 1 to 8. Find out how teachers transform their classes using interactive whole class lessons and individual online courses. Learn how special needs and far below basic students can master the Common Core curriculum.

Join us for math, music, and fun!

What you can learn about in this session:

- Common Core whole-class lessons with projectors, smartboards
- Individualized lessons that help students fill in gaps
- Tracking every student to mastery on every standard
- Making Common Core lessons fun with songs and games

Free school license for each attendee!

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www.learningupgrade.com

Visit Our Booth #1312

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2:45 P.M.–4:00 P.M.

525
Making Sense of Fraction Operations with Realistic Mathematics Education

(3–8) Gallery Workshop

Realistic mathematics education (RME) is a philosophy of math education that has guided the Netherlands to two top-five Programme for International Student Assessment rankings in the past decade. Learn more about RME and explore a series of tasks designed to support student understanding of operations with fractions.

Mieke Abels
Freudenthal Institute for Science and Mathematics Education, Utrecht University, Netherlands

R06 (CONVENTION CENTER)

526
Measuring Up: An Interactive Model for Perimeter and Area

(3–8) Gallery Workshop

Do you want to engage your students while teaching perimeter and area? Do your students confuse these concepts? Experience a hands-on approach that helps students model perimeter and area using color tiles and chip markers to construct rectangular banquet tables. This activity is adaptable to explore number sense and probability. Free supplies will be available to take back to your classroom.

Michael Broome
University of Louisiana at Monroe
Kathie O. Smart
University of Louisiana at Monroe

OAK ALLEY (HILTON)

526.1
Building Number Sense: Understanding Operations and Algebraic Thinking with Manipulatives

(3-5) Gallery Workshop

The Common Core State Standards emphasize the meaning of operations and link student development of algorithms to their understanding of these operations. Learn manipulative-based strategies for developing conceptual understanding of operations and connecting this understanding to a variety of algorithms for the operations.

Sara Delano Moore
ETA hand2mind
Vernon Hills, Illinois

GRAND BALLROOM D (HILTON)

527
Activities That Help English Language Learners Increase Geometric Understanding

(6–8) Gallery Workshop

Equity strand presentation

English language learners often struggle to learn the special language of geometry, and this hampers concept understanding. This workshop will provide teachers with the opportunity to participate in classroom-tested activities with manipulatives that enhance geometry language acquisition. Activity handouts and access to free resources will be provided.

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

221/222 (CONVENTION CENTER)

528
It Starts with a Cube

(6–8) Gallery Workshop

A cube is the starting point for many rich problems involving even more math concepts. Work your way through factors, combinatorics, volume, surface area, networks, and more by solving Math Olympiad problems. A dozen of these cube problems provide a fresh approach to these topics. More than fifty additional Math Olympiad problems will be distributed.

Dennis C. Mulhearn
Math Olympiads for Elementary and Middle Schools, Bellmore, New York

GRAND SALON 4–7–10 (HILTON)

529
"Part" of What You Should Know about Fraction Operations!

(6–8) Gallery Workshop

Many teachers find it difficult to make operations on fractions concrete and meaningful for students. Using geoboards and Unifix cubes, each operation will be modeled to illustrate the meaning of the operation and to help students develop estimation skills and an intuitive sense for the meaning of fraction problems.

Bob M. Drake
University of Cincinnati, Ohio

210 (CONVENTION CENTER)

530
Real Number Explorations and the Pythagorean Theorem

(6–8) Gallery Workshop

As mathematics becomes more abstract, understanding of the real number system can be elusive. In this session, we will explore student activities designed to bring meaning to rational and irrational numbers. We will also focus on the radical sign as it pertains to the Pythagorean theorem.

Katherine A. Martin
Wicomico Middle School, Salisbury, Maryland

MAGNOLIA (HILTON)

531
Strategies That Help Answer the Question: Deal or *No* Deal?

(6–8) Gallery Workshop

In this session, participants will engage with activities related to statistical information, ratio and proportion, fractions, and graphing. We will answer real-world questions such as: Should I bother cutting that Kohl's coupon? Is the Six Flags season pass worth it? How does advertising work, and how should I decide this question: Deal or no deal?

Eileen M. Cyr
Springfield College, Massachusetts

244 (CONVENTION CENTER)

532
Data and Slope and Intercepts, Oh My!

(6–12) Gallery Workshop

Interpreting slope and y-intercepts from data runs through the Common Core. Sparked by topics from your favorite movie to the size of your forearm, we will dive into classroom-tested activities. Graphing calculators will be used to showcase the technology side of this topic.

Jared E. Derksen
Chaffey Joint Union High School District, Rancho Cucamonga, California

211/212 (CONVENTION CENTER)

533 NT
Engaging the Struggling Learner: Technology Can Help!

(6–12) Gallery Workshop

Today's students are captivated by video and TV yet remain concrete learners. Technology capitalizes on both of these facts. Learn how to catch student interest with videos and then deepen conceptual understanding with virtual manipulatives. Lessons are aligned with the Common Core and its Mathematical Practices. Keep your students motivated and engaged!

Carolyn Briles
Stone Bridge High School, Loudoun County Public Schools, Ashburn, Virginia
Connie S. Schrock
Emporia State University, Kansas

R04 (CONVENTION CENTER)

534
Math and the Oval Office: It's More Than Geometry!

(6–12) Gallery Workshop

If Florida taught us anything, it's that every vote counts. But how are they counted? In this session, we will look at how to teach students about the math of voting and elections. Be prepared to learn a bit of game theory and approach future elections with a new (and smarter) perspective.

Melanie Smith
Urban Assembly School for Law and Justice, Brooklyn, New York
Eyal Wallenberg
Urban Assembly School for Law and Justice, Brooklyn, New York

215/216 (CONVENTION CENTER)

535
Three-Dimensional Relationships: Making Sense of Surface Area and Volume

(6–12) Gallery Workshop

Come explore the use of stations for surface area and volume relationships including deriving formulas and justifications for prisms, pyramids, cylinders, cones, and spheres. We will examine the connections between nets, surface area, and volume. Participants will be provided with directions and ready-to-use materials.

Janet B. Andreasen
University of Central Florida, Orlando
Erhan Selcuk Haciomeroglu
University of Central Florida, Orlando
Deborah McGinley
Orange County Public Schools, Orlando, Florida

\GRAND BALLROOM B (HILTON)

2:45 P.M.–4:00 P.M.

536
Fundamental Theorem of Calculus (FTC): Integration, Differentiation, and Conceptual Understanding Using Technology

(9–12) Gallery Workshop

In this session, activities involving both paper/pencil and technology focus on connections between integral defined functions and the derivatives of these functions. Participants will have the opportunity to experience hands-on investigations designed to help students improve their conceptual understanding of the FTC. Discussion of AP problems involving the FTC will also be included.

Mike Koehler
Blue Valley North High School, Overland Park, Kansas

240/241 (CONVENTION CENTER)

537
The Real Deal: Patterns and Connections in Game Show Contexts

(9–12) Gallery Workshop

We will share activities from the game show *Minute to Win It* that can motivate students' interest and involvement and promote mathematics discussion, pattern finding, and making connections. Be ready for active involvement and engaging discussion as you try out these game show activities and look for ways to incorporate them into your classroom.

Tami S. Martin
Illinois State University, Normal
Roger P. Day
Illinois State University, Normal

NAPOLEON BALLROOM (HILTON)

538
Use Mathematical Games to Develop Problem-Solving Strategies

(9–12) Gallery Workshop

Participants will play together to determine winning strategies to mathematical games. Common problem-solving heuristics that lead to the discovery of a winning strategy will be discussed and used. Leave with classroom-ready games that will have your students communicating reasoning—and enjoying it.

Mike C. Eden
University of Waterloo, Ontario, Canada

VERSAILLES (HILTON)

539
Engaging and Empowering African American Students through Mathematics

(Preservice and In-Service) Gallery Workshop

Equity strand presentation

In this session, participants will explore practices that often cause students to disengage from mathematics. We will investigate and utilize strategies to engage African American students as creators and learners of mathematics.

Crystal Hill Morton
Indiana University-Purdue University Indianapolis
Saba-Na'Imah Berhane
UCASE Research Assistant, Indiana University-Purdue University Indianapolis
Laila Nur
University of Southern California, Los Angeles

228/229 (CONVENTION CENTER)

540
Mathematics through Paper Folding

(Preservice and In-Service) Gallery Workshop

Participants will join in an interactive, hands-on experience folding patty paper and circular coffee filters to illustrate mathematical concepts. Begin with basic constructions and then extend to fractions, lines, squares, circles, triangles, conic sections, transformations, and the golden rectangle. This will be an active mathematical experience full of discovery.

James Fulmer
University of Arkansas at Little Rock
Lowell Lynde
University of Arkansas at Monticello

203/204/205 (CONVENTION CENTER)

3:30 P.M.–4:30 P.M.

541
Engaging Girls, English Language Learners, and African American Students by Redefining "Mathematical Talent"

(General Interest) Session

Equity strand presentation

How can we seek mathematically talented students hiding in our classes and what do we do with them? By redefining math talent we can find these students, match instruction to their needs, and measure growth. Explore with us how we can achieve this and encourage equity across genders and ethnicities.

Melissa Hosten
Maricopa County Education Service Agency, Phoenix, Arizona
Heather Lindfors-Navarro
Chandler Unified School District #80, Arizona

214 (CONVENTION CENTER)

542
Implementing Common Core Mathematics and RtI in Your Classroom

(General Interest) Session

Response to Intervention (RtI) is a framework for research-based instruction in Common Core mathematics and instructional decision making. The Common Core State Standards (CCSS) and RtI are required in most schools, but few resources are available to help teachers integrate them in their classrooms. This presentation will share CCSS content, research-based strategies, and resources.

Dolores T. Burton
Retired, New York Institute of Technology, Old Westbury

GRAND BALLROOM A (HILTON)

542.1 LT
Teachers Leveraging Technology in the Classroom

(General Interest) Session

How can technology, from apps to blogs, help teachers create effective and innovative instruction? How can teachers use technology for their own professional development? This panel features the perspectives of five educational leaders: Karim Ani, Ashli Black, Chris Hunter, Dan Meyer and Kate Nowak who have incorporated technologies into their work.

Jon Wray, Facilitator
Board of Directors, National Council of Teachers of Mathematics; Howard County Public Schools, Ellicott City, Maryland

JEFFERSON BALLROOM (HILTON)

543 SJ
Mathematics for Social Justice: Possibilities and Challenges

(General Interest) Session

In this session, as teacher-researcher and participant-observer, we will describe possibilities and dilemmas in developing and teaching social justice math. We will describe how we chose social justice contexts and developed and taught curriculum for both high school and middle school. We will also share what students learned and the challenges of this work.

Eric (Rico) Gutstein
University of Illinois at Chicago
Patricia Buenrostro
University of Illinois at Chicago

R01 (CONVENTION CENTER)

544
Presentation of the 2014 NCTM Lifetime Achievement Awards

(General Interest) Session

This celebration will honor the 2014 winners of the NCTM Lifetime Achievement Awards. The awards are bestowed on NCTM members who have exhibited a lifetime of achievement in mathematics education at the national level. The winners will be introduced and will speak. Other grant recipients in attendance will also be recognized.

Mathematics Education Trust
National Council of Teachers of Mathematics, Reston, Virginia

GRAND SALON 9–12 (HILTON)

3:30 P.M.–4:30 P.M.

545
The Hidden Message: Micromessaging and Mathematics

(General Interest) Session

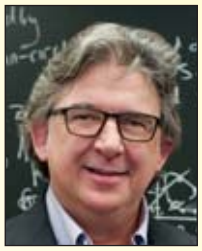
Equity strand presentation

What subtle, perhaps unconscious, messages are you communicating to your students? Come learn how conscience use of micromessaging embedded in activities, projects and problem-based activities can reduce inequality in the classroom, improve student achievement, and open the doorway to STEM careers.

Tujuana Greene Hinton
Baltimore County Public Schools, Maryland

243 (CONVENTION CENTER)

546



Tracing Progressions in the Common Core State Standards

(General Interest) Session

The Common Core State Standards were based on progressions, which are narrative descriptions of how mathematical ideas in a particular domain progress across grade levels. In this presentation we will trace out a couple of those progressions from grades K–8 and show how a careful examination of the standards reveals the underlying structure.

William G. McCallum is a University Distinguished Professor of Mathematics and head of the mathematics department at the University of Arizona. In 2005 he received the Director's Award for Distinguished Teaching Scholars from the National Science Foundation. In 2006 he founded the Institute for Mathematics and Education at the University of Arizona; he was its director until 2009 and now chairs its advisory board. In 2009–10, he was one of the lead writers for the Common Core State Standards in Mathematics.

William McCallum
Illustrative Mathematics, Tucson, Arizona

GREAT HALL B/C (CONVENTION CENTER)

547
Seeing Patterns in Daily Routines: Cultivating Mathematical Practices #7 and #8

(Pre-K–2) Session

Patterns are the language of mathematics. The presenters will share examples of children's thinking and classroom activities that use patterns and structure to help students make sense of number, operations, and geometry as they explore and generalize mathematical properties. Learn how to incorporate the Common Core's Standards for Mathematical Practices #7 and #8 into classroom routines.

Pamela J. Wells
Grand Valley State University, Allendale, Michigan
Esther Billings
Grand Valley State University, Allendale, Michigan

235/236 (CONVENTION CENTER)

548 NT
Teaching Subitizing to Pre-K–2 Students in Fun and Engaging Ways

(Pre-K–2) Session

This workshop will provide you with ways to teach your pre-K–2 students how to subitize through technology and hands on activities. Get your students excited about learning these core ideas that will provide a foundation for their conceptual understanding of number sense.

Carla V. Gerberry
Xavier University, Cincinnati, Ohio

245 (CONVENTION CENTER)

549
Math Talk: Teaching Concepts and Skills through Stories and Illustrations

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

A young child's understanding of the world is enlightened and expanded through stories and illustrations so it makes sense to use these resources when learning mathematics. Based on a method used in Singapore, you will learn to use "math talk" as a powerful way to provide purposeful practice through stories and illustrations.

Char Forsten
Staff Development for Educators, Peterborough, New Hampshire

GRAND SALON 21–24 (HILTON)

550
Exploring Geometry and Measurement through the Visual Arts

(3–5) Session

Explore geometry and measurement concepts as well as proportional reasoning using the artwork of Piet Mondrian, Pablo Picasso, and Josef Albers. Connect examples of children's literature that feature the visual arts to mathematics concepts.

Jennifer L. Albritton
All Saints' Episcopal School of Fort Worth, Texas
Annabelle G. Gallo
All Saints' Episcopal School of Fort Worth, Texas

ROSEDOWN (HILTON)

551
Helping Parents Help Children: Teaching Mathematical Practices through Technology

(3–5) Session

This session will help teachers learn how to support parents as they encourage their children in problem solving and modeling with mathematics. Come learn how videos and other innovations in technology can be used to teach parents about key components of the Common Core, and leave knowing how to help parents help their children.

Julie Amador
University of Idaho, Coeur d'Alene

R05 (CONVENTION CENTER)

552
Celebrating Math and Literature: Promoting a Bright Future for All

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

This session focuses on the introduction of mathematical concepts through the effective use of children's literature. Using literature for a hook, teachers can help students experience mathematical ideas in true-to-life situations. This integration enhances learning and provides a smooth introduction to the learning of mathematical concepts.

Sally C. Mayberry
Florida Gulf Coast University, Fort Myers

230 (CONVENTION CENTER)

553
Chopsticks, Lobsters, and Roadrunners: How Are They Related?

(3–8) Session

The Common Core State Standards call for students to express functional relationships between patterns by grade 5. Explore research-based and classroom-tested tasks promoting students' functional thinking. Gain insight through a learning trajectory approach to students' conceptual development with different representations, classroom video, and student work examples.

Nicole Panorkou
North Carolina State University, Raleigh
Alan P. Maloney
North Carolina State University, Raleigh

225/226/227 (CONVENTION CENTER)

554 CF
Meaningful Approaches to Algorithms for Decimals

(3–8) Session

We discuss a learning path for decimal algorithms based on the Common Core State Standards (CCSS) progressions and the NCTM publication *Focus in Grade 5.* This learning path emphasizes decimals as extending the base-ten system and decimal algorithms as related to and extending whole-number algorithms. We will also highlight opportunities for engaging in the CCSS Standards for Mathematical Practice.

Sybilla Beckmann
University of Georgia, Athens
Karen C. Fuson
Consultant, Fallbrook, California

GRAND SALON 3–6 (HILTON)

555
Middle School Math Sightings

(6–8) Session

Middle school math is not found only in texts. Help your students see the math that surrounds us—in trees, clouds, coffee, music, in their own bodies, on the Web, and on sale. A series of brief investigations and explorations will be presented, each one tied to a Common Core State Standard or two. A Web site serving these and more will be shared.

Mark Roddy
Seattle University, Washington

R09 (CONVENTION CENTER)

3:30 P.M.–4:30 P.M.

556
Explore, Understand, Represent, and Communicate: Using iPads to Create Understandings

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

Expand the educational potential of your iPad with a creative app like Explain Everything. We will share our free collection of teacher-created interactive projects and video demonstrations designed to support discovery and sense making in math. Take it to the next level by challenging students to demonstrate their mastery by creating similar resources themselves.

Tim Pelton
University of Victoria, Canada
Leslee Francis Pelton
University of Victoria, Canada

GREAT HALL A/D (CONVENTION CENTER)

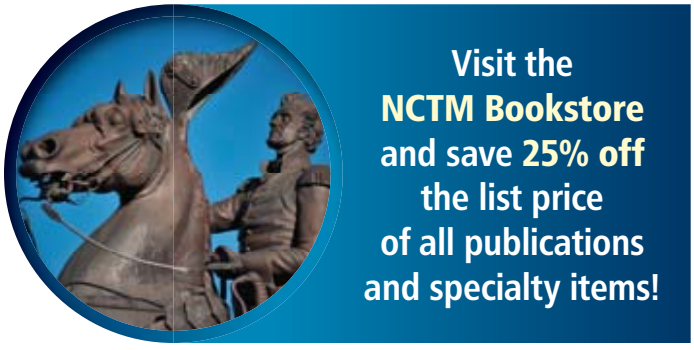
557
Moving Proportions beyond Cross-Multiply and Divide

(6–12) Session

What does it mean to think proportionally? How does this connect to algebraic equations and linear functions? Learn how to use ratio tables, tape diagrams, and double number lines to develop proportional thinking in your students. Come join us for this important domain connecting math, science, college/career readiness, and everyday life!

Elizabeth Peyser
Wichita Public Schools, USD 259, Kansas
Sarah Stevens
Wichita Public Schools, USD 259, Kansas

R03 (CONVENTION CENTER)



558
Predicting Amounts of Change in Quantities

(6–12, Research) Session

When students use amounts of change in one quantity to make predictions about amounts of change in a related quantity, they can draw on relationships between quantities to make sense of linear situations. In this session, attendees will learn ways to support secondary students' use of relationships between quantities to investigate linear situations.

Heather Lynn Johnson
University of Colorado Denver

206 (CONVENTION CENTER)

559
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

ELMWOOD (HILTON)

560
Advanced Algebra with Financial Applications: A Third/Fourth Year Math Option

(9–12) Session

Advanced Algebra with Financial Applications is a substantive Common Core–aligned modeling course that teaches and uses advanced algebra in the content areas of investments, creating a business, banking, credit, automobiles, employment, taxes, home ownership, retirement, and budgeting. In this presentation about the course, sample curriculum materials will be distributed and explored.

Richard J. Sgroi
Bedford Central Schools, New York
Robert K. Gerver
North Shore High School, Glen Head, New York

242 (CONVENTION CENTER)

3:30 P.M.–4:30 P.M.

561
Transformations in Geometry and Algebra

(9–12) Session

The Common Core State Standards call for an emphasis on transformations in high school geometry. In this session, participants will become familiar with techniques for introducing transformations in geometry in a learner-centered environment. Further connections from geometry to algebra will also be investigated.

Paul A. Kennedy
Colorado State University, Fort Collins
Janet Oien
Poudre School District, Fort Collins, Colorado

GRAND SALON 13–16 (HILTON)

562
Developing and Nurturing Mathematics Teacher Efficacy: Implications for Teacher Educators

(Higher Education, Preservice and In-Service, Research) Session

This session describes the validation of an instrument to measure preservice and in-service teacher efficacy to teach elementary mathematics. Based on the Mathematics Teaching Efficacy Beliefs Instrument, revisions to the instrument were made to reflect modifications based on current research. Implications for methods instructors and professional development providers will be discussed.

Elizabeth K. Ward
Texas Wesleyan University, Fort Worth
Elisabeth Johnston
Slippery Rock University, Pennsylvania

223 (CONVENTION CENTER)

563
Revisiting Ma and What I Learned about Fraction Division

(Higher Education, Preservice and In-Service, Research) Session

President's Series presentation

The session revisits Liping Ma's research on fraction division before sharing an instructional approach used to target fraction division understanding as a part of a research project. The work and examples of participating preservice teachers, together with other results from the study, will be presented and compared to Ma's earlier research work.

Mary B. Swarthout
President, Research Council on Mathematics Learning; Sam Houston State University, Huntsville, Texas

R07 (CONVENTION CENTER)

564
A University Partnership Model to Support Early-Career Mathematics Teachers

(Preservice and In-Service) Session

To improve teacher retention, we developed a model to support early-career secondary math teachers. In this model, we developed a partnership with a local university to provide time for our mentor teachers to coach during the school day and give graduate students opportunities to teach. Implementation success stories and obstacles will be shared.

Glenda Huff
Clarke County School District, Athens, Georgia
Ryan C. Smith
University of Georgia, Athens
Summer Tuggle-Smith
Clarke County School District, Athens, Georgia

JASPERWOOD (HILTON)

564.1 ew
Meaningful Math Models and the CCSS

(Pre-K–5) Exhibitor Workshop

Math drawings incorporate several of the Mathematical Practices when students use them to show the mathematical aspects of a situation. Students make math drawings on their MathBoards, and use them to explain his/her solution method. Come learn about math drawings and other math models that can be used in the classroom.

Houghton Mifflin Harcourt
Austin, Texas

209 (CONVENTION CENTER)

3:30 P.M.–4:30 P.M.

564.2 EW
Pearson's CMP3: Get Connected!

(6–8) Exhibitor Workshop

Experience the newest edition of the inquiry-based Connected Mathematics Project. Explore CCSS-aligned content and easy-to-use mobile tools that help with classroom management. Find out how students benefit from interactive digital student pages that allow for instant sharing and more effective group work.

Pearson
Upper Saddle River, New Jersey

218 (CONVENTION CENTER)

564.3 EW
Formative Assessment That Builds Confidence and Skill

(6–12) Exhibitor Workshop

Explore lessons using the TI-Nspire™ CX Navigator™ System and learn how to use immediate student feedback to differentiate your instruction and guide student discussions in class. Learn strategies for building formative assessment into your lessons to help students understand what they know and to empower them to ask for help.

Texas Instruments
Dallas, Texas

219 (CONVENTION CENTER)

564.4 EW
Pearson High School Math and the Common Core

(9-12) Exhibitor Workshop

Learn how this blended print and digital curriculum not only engages grades 8–12 students but also infuses Common Core State Standards and Mathematical Practices throughout each lesson to ensure all learners acquire the critical knowledge and skills necessary to succeed in college and in their careers.

Pearson
Upper Saddle River, New Jersey

208 (CONVENTION CENTER)

4:45 P.M.–5:30 P.M.

565 NT
New Teacher Celebration

(Preservice and In-Service) Gallery Workshop

Celebrate the progress and possibilities as we look for new and early-career teachers and for students working to enter this exciting profession. Learn a little, laugh more, and win wonderful prizes. Come celebrate with us. You are the future.

David Barnes
National Council of Teachers of Mathematics, Reston, Virginia

221/222 (CONVENTION CENTER)

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EW Exhibitor Workshop | CF Teaching Computational Fluency | LT Teachers Leveraging Technology | NCTM Committee | NT New Teacher | PtA Principles to Actions | SJ Social Justice

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Saturday

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Saturday

Highlights

Closing Session: When Punchlines Include Slopes and *Y*-Intercepts (Presentation 653)

Icon	Presentation Numbers
EW Exhibitor Workshops	581.1, 581.2, 581.3, 581.4, 611.1, 611.2, 611.3
NCTM Committee	626
PtA Principles to Actions: Ensuring Mathematical Success for All	609
SJ Social Justice	634

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The BuzzHub

Network at the BuzzHub!
See page 162 for more details.

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Registration Hours

7:00 a.m.–10:00 a.m.

Exhibit and BuzzHub Hours

8:00 a.m.–Noon

Bookstore Hours

8:00 a.m.–Noon

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.

566
Moving the Margins of Ethnomathematics: Reframing Cultural Norms in Math

(General Interest, Research) Session

Equity strand presentation

What happens when researchers turn the lens of ethnomathematics onto mainstream curricular materials? Drawing from critical perspectives, this session focuses on the cultural complexity and messages math texts may carry. Emphasizing equity, diversity, and social justice, we will examine both what and whose knowledge is valued in math texts.

Anita Bright
Portland State University/TODOS: Mathematics for All, Oregon

214 (CONVENTION CENTER)

567
Online Professional Learning Opportunities for Mathematics Educators

(General Interest) Session

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

David C. Wees
Stratford Hall, Vancouver, British Columbia, Canada

R07 (CONVENTION CENTER)

568
Take Action: Encouraging Female Students to Excel in Math

(General Interest) Session

Why do girls often report feeling less capable at learning mathematics than boys? Research by neurologists and psychologists suggests why we see gender inequities in mathematics. This session will review relevant findings and discuss strategies that can be used in the classroom to better support and encourage female students.

Christy W. Gillespie
Kent Place School, Summit, New Jersey

GREAT HALL A/D (CONVENTION CENTER)

569
Talking and Writing: A Means of Making Sense of Mathematics

(General Interest) Session

What does talk that is accountable to the mathematical practice standards sound like? How do we give students opportunities to turn that talk into writing about mathematical understanding? Join us to learn strategies for employing talking and writing in mathematics classroom as a means to thinking, reasoning, and mathematical argumentation.

Victoria Bill
Institute for Learning, University of Pittsburgh, Pennsylvania
Kristin A. Klingensmith
Institute for Learning, University of Pittsburgh, Pennsylvania

230 (CONVENTION CENTER)

570
Experience a Number Bond, For All It's Worth

(Pre-K–5) Session

Participants will experience all that number bonds have to offer students. This session will begin by looking at using number bonds to compose and decompose numbers. The adventure will continue by exploring bonds for elapsed time and converting units of measurement and fractions. Ideas for classroom activities and work samples will be shared.

Kristin Alyssa Hilty
Staff Development for Educators, Peterborough, New Hampshire

R05 (CONVENTION CENTER)

571
Number Lines: Tools for Teachers, Tools for Students

(3–5) Session

Explore the power of number lines as a problem-solving tool for students and as a diagnostic tool for teachers. As students solve problems using number lines, their thinking becomes transparent. This enables teachers to focus on students' work through a diagnostic lens. Join us for this interactive session that includes tasks you can use in your classroom.

Kit Norris
Independent Consultant, Southborough, Massachusetts

245 (CONVENTION CENTER)

572
Equivalent Fraction Misconceptions: 1/4 Is Equivalent to 3/4, Isn't It?

(3–8, Research) Session

Our analysis of Tier 2 students' equivalent fraction misconceptions led to interesting discoveries. Come learn of misconceptions lurking under the surface of students' understanding. Learn how the misconceptions affect student learning, see trajectories of resolution, and observe virtual and physical manipulatives remediation activities.

Arla Westenskow
Utah State University, Logan
Patrica S. Moyer-Packenham
Utah State University, Logan

R01 (CONVENTION CENTER)

573
Sense Making? Aren't We Already Doing That in Literacy?

(3–8) Session

The very first Common Core Standard for Mathematical Practice, telling students to "make sense of problems," includes many ideas that have long been emphasized in literacy instruction. Yet when "math" starts, both teachers and students often leave those good habits behind. We'll look at examples of this phenomenon and explore how to translate literacy routines into good mathematical practices.

Annie Fetter
The Math Forum @ Drexel, Philadelphia, Pennsylvania
Debbie Wile
Wallingford Elementary School, Pennsylvania

R09 (CONVENTION CENTER)

574
Motivating Students via Technology with Three Acts

(6–8) Session

This session will examine how to engage, motivate, and teach the iGeneration (the Internet Generation). Participants will be provided with videos (three-act lessons), websites, and motivational strategies for students in grades 5–10 that can lead to building better number sense and facility with rational numbers.

Eric Milou
Rowan University, Glassboro, New Jersey

225/226/227 (CONVENTION CENTER)

575
Number Talks in the Middle School Math Classroom

(6–8) Session

Integrating number talks into middle school math helps build our students' sometimes fragile number sense as they develop mental math strategies for computation. We will engage in middle-level number talks and discuss how to craft them to maximize student sense making. Classroom climate and the teacher's role in number talks will also be addressed.

Kristi M. Cohen
Math Solutions, Sausalito, California
Sheila Yates
Math Solutions, Sausalito, California

235/236 (CONVENTION CENTER)

576
What Do "Words" Have to Do with Solving Mathematical Problems?

(6–8) Session

Through research, teachers can get a better idea as to why students are not grasping the concept of reading word problems and then solving them successfully. In this session, teachers will engage in working activities and games in each mathematical content area, emphasizing relevant key words in order to solve problems.

Nancy A. Jones
Martin Luther King, Jr. Middle School, Richmond, Virginia

206 (CONVENTION CENTER)

577
Beyond Input-Output Machines: Understanding Functions through Multiple Representations

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

Consider functions in ways you never have before. Through activities and discussions, we will explore different representations to challenge and expand your understanding of functions. We will see how a course designed to emphasize these different representations changed teacher conceptions and how to adapt these activities for classroom use.

Christy Pettis
University of Minnesota, Twin Cities
Christopher Danielson
Normandale Community College, Bloomington, Minnesota
Aran W. Glancy
University of Minnesota, Twin Cities

242 (CONVENTION CENTER)

578
Are Students Using Technology or Is Technology Using Them?

(6–12) Session

The popularity of e-textbooks, Khan Academy, and massive open online courses (MOOCs) continues to grow. This session will reflect on the fundamental question: "Is technology used to meet the needs of my students or are my students used to meet the needs of technology?" Come discuss the pros and cons of these technologies, and help make a wish list for version 2.0.

Avery Pickford
The Nueva School, Hillsborough, California

223 (CONVENTION CENTER)

579
Exploring the CCSS S-ID and S-IC Categories with NASA Data

(9–12) Session

Engage in an algebra 2 lesson co-developed by the National Math and Science Initiative and NASA to show how to address topics applicable to algebra 2. These topics include those found in the interpreting data (S-ID) and the making inferences and justifying conclusions (S-IC) clusters of the Common Core State Standards (CCSS). The lesson utilizes simulated NASA data and aligns to both NCTM and CCSS standards.

Curtis R. Brown
National Math and Science Initiative, Dallas, Texas
Lori Edwards
National Math and Science Initiative, Dallas, Texas

R03 (CONVENTION CENTER)

580
Not the Math Students Hate

(9–12) Session

Equity strand presentation

Students scream from the rooftops, "I hate math." After attending this presentation, teachers will be able to make functions, slope, transformations, and quadratics relevant to students. By making connections, students' retention level will improve, and they might now say to their friends, "I can prove the importance of math."

Frank R. Davis
Benjamin Banneker Association, North Central Representative, Chicago, Illinois

243 (CONVENTION CENTER)

581
Mathematical Modeling: The Core of the Common Core State Standards (CCSS)

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

As part of the CCSS content standards and one of the Standards for Mathematical Practice, mathematical modeling affords a rich opportunity for developing and unifying the mathematical content of the high school conceptual categories and the other Mathematical Practices. We will examine several illustrative modeling tasks using NCTM's free software Core Math Tools.

Christian R. Hirsch
Western Michigan University, Kalamazoo

GREAT HALL B/C (CONVENTION CENTER)

581.1 EW
On Ramp to Algebra

(General Interest) Exhibitor Workshop

Despite a variety of approaches to attack the problem, the algebra fail rate has remained stubbornly high in many of our schools. Learn about onRamp to Algebra. Pearson's intervention solution using explicit instruction, peer-assisted learning, and independent practice with scaffolded supports.

Pearson
Upper Saddle River, New Jersey

209 (CONVENTION CENTER)

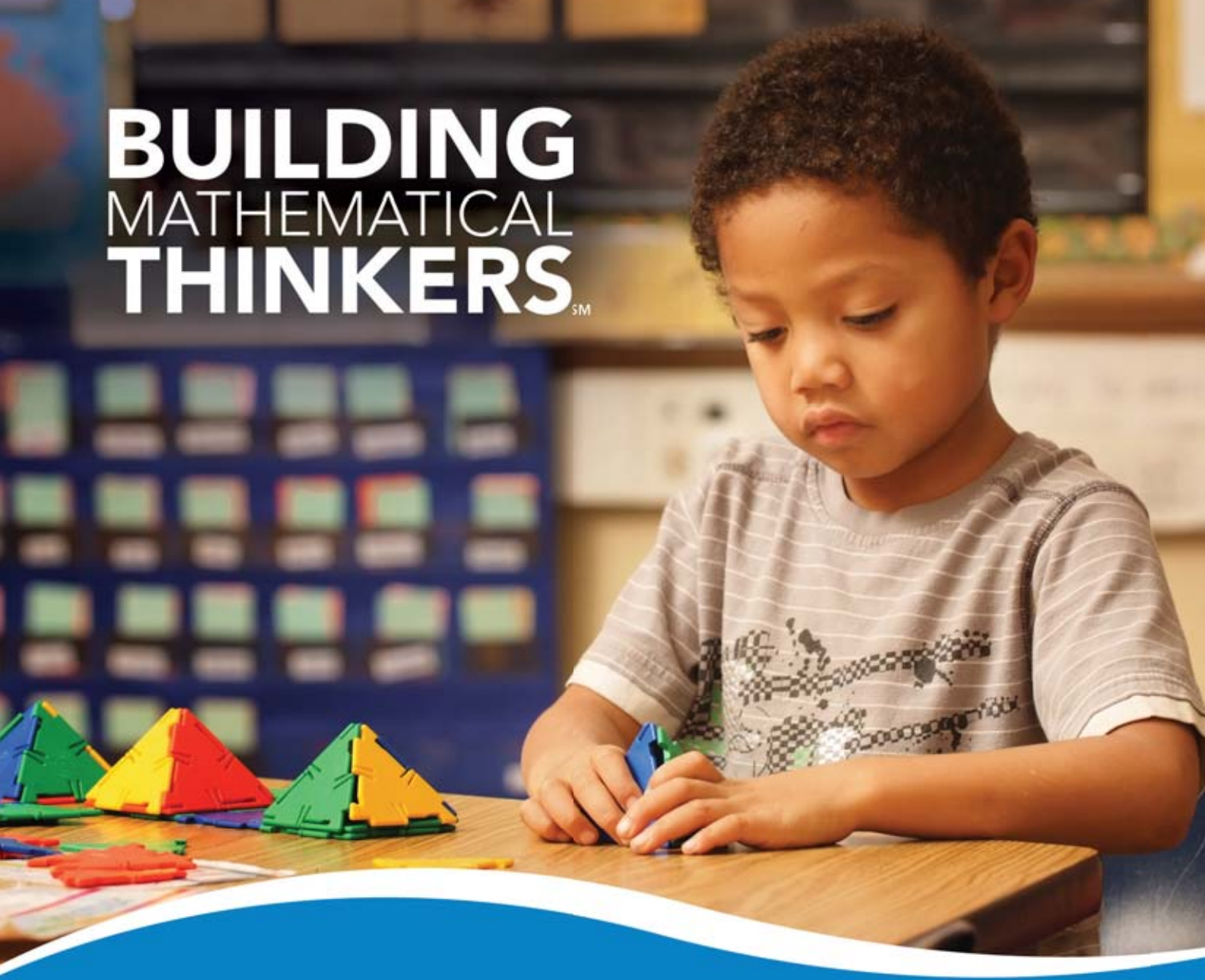
581.2 EW
Saxon Math in the Elementary Grades WORKS!

(Pre-K–5) Exhibitor Workshop

The What Works Clearinghouse gave Saxon Math for Grades K-5 a thumbs up in a recent report. Saxon Math was found to have potentially positive effects on mathematics achievement for elementary students. Come see how Saxon Math includes math conversations that engage students in learning. Sample activities will be shared plus more!

Houghton Mifflin Harcourt
Boston, Massachusetts

208 (CONVENTION CENTER)



Learn more about Bridges Second Edition

Join us for a presentation

Friday, April 11, 9:30–10:30, Room #219

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

Visit The Math Learning Center booth

Meet the development team, receive a giveaway and try our free apps.

Booth 1124

BRIDGES® IN MATHEMATICS

8:00 A.M.–9:00 A.M.

581.3 EW
Conquer Times Tables in Only Three Weeks—Guaranteed!

(3–8) Exhibitor Workshop

Learn how your students can conquer the times tables in only three weeks—guaranteed! Our programs are research-based, multi-sensory, and RtI-optimized. If your class average isn't 90 percent on the final test—100 percent refund. This session will also cover other products to help students add, subtract, divide, and do fractions. You can see our three-minute videos at www.rhymesntimes.com and www.clockwisemath.com.

Rhymes 'n' Times
Lewisville, TX

219 (CONVENTION CENTER)

581.4 EW
Cinch Learning: Make It Personal

(6–12) Exhibitor Workshop

Go hands-on with CINCH Learning. We provide convenient cloud-based access to quality math and science content. Choose what you want to teach, what resources you want to use, and what device you want to use to deliver the lesson. Create a compelling learning experience that is uniquely yours and highly personalized to your students.

McGraw-Hill Education
Columbus, Ohio

218 (CONVENTION CENTER)

8:00 A.M.–9:15 A.M.

582
Mathematically Powerful Students Know Numbers and Recognize Relationships. Do Yours?

(Pre-K–2) Gallery Workshop

Engage in activities and use tools that develop students' in-depth understanding of numbers, quantities, and relationships. The activities and tools, many developed by teachers, have been used in the past three years to address the Common Core for all students, including English language learners and students with disabilities. Activities, links, and resources will be shared.

Nora Ramirez
Nora G. Ramirez Consulting, Tempe, Arizona

207 (CONVENTION CENTER)

583
Stop, Help! There Is More Than One Answer?

(Pre-K–2) Gallery Workshop

Learn ways to encourage students to reason through situations, validate their thinking, and communicate their thoughts with problem-solving techniques. This session will focus on using visualizing and reasoning to solve open ended, technically enhanced questions with multiple solutions. Attendees will engage in making sense of problems that address students' misconceptions.

Laura L. Gray
Norfolk Public Schools, Virginia
Brenda Dorman
Norfolk Public Schools, Virginia

211/212 (CONVENTION CENTER)

584
Developing and Assessing Addition Fact Fluency

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

What does it really mean to be fluent with addition facts, and how is this idea reflected in the Common Core State Standards for Mathematics? Come explore how we can use strategies, games, and activities in meaningful ways to develop a trajectory for helping all students become fluent with addition facts, and consider ways to authentically assess fact fluency.

Gina Kling
Western Michigan University, Kalamazoo
Jennifer M. Bay-Williams
University of Louisville, Kentucky

228/229 (CONVENTION CENTER)

8:00 A.M.–9:15 A.M.

585
A Number-Sense Approach to Multiplication Facts: Critical to Common Core

(3–5) Gallery Workshop

Experience a systematic approach to teaching basic facts that encourages reasoning while building fluency. Counting tapes with multiple markers and unique array flash cards help to build connections among multiplication, division, and fractions. Materials will be provided.

Janet Gillespie
Retired, Portland Public Schools, Oregon

240/241 (CONVENTION CENTER)

586
Be Strategic: Connect Multiplication and Division

(3–5) Gallery Workshop

What does it mean to teach conceptually? The Common Core State Standards for Mathematics elevate the need to teach for conceptual understanding. By developing the richness of mathematics through models and reasoning, students in grades 3–5 can connect concepts of multiplication and division. Let's teach students how to think rather than what to think!

Rob Nickerson
ORIGO Education, St. Charles, Missouri

238/239 (CONVENTION CENTER)

587
Modeling Area and Perimeter

(3–5) Gallery Workshop

Participants will use tangram pieces, pattern blocks, and geoboards to model the concepts of area and perimeter. Patterns, problem-solving methods, and the Standards for Mathematical Practice will be addressed.

Celine J. Przydzial
Kutztown University, Pennsylvania

210 (CONVENTION CENTER)

588
Examining Fraction Multiplication: 12 x 3/4 or 3/4 of 12?

(3–8) Gallery Workshop

This interactive session will examine the meaning of fraction multiplication through math activities and analysis of classroom video. Various representations of fractions and multiplication will allow us to focus on the question of how 12 x 3/4 and 3/4 of 12 are the same and how they are different. Common Core Standards for Mathematical Practice #2 and #3 will be highlighted.

Virginia Bastable
Mount Holyoke College, South Hadley, Massachusetts

R04 (CONVENTION CENTER)

589
Thinking about Numbers? Support That Foundation with Geometry

(3–8) Gallery Workshop

Teaching numbers and geometry in isolation can be hazardous to good mathematical thinking. Join us as we work with and build two-dimensional and three-dimensional structures that can be examined through a number lens. See how number properties and patterns can emerge.

Al Mendle
University of California, Davis

221/222 (CONVENTION CENTER)

590
Unpacking NASA's Museum in a Box

(6–8) Gallery Workshop

NASA's Museum in a Box (MIB) program brings the physical sciences of flight to students in kindergarten–grade 12. This presentation allows teachers to experience math-based activities found in the MIB program, provides information on how to access lessons and materials, and shows how to connect math, physical science, and the principles of flight.

Jennifer L. Kennedy
Einstein Fellow, NASA Aeronautics Research Mission Directorate, Washington, D.C.

244 (CONVENTION CENTER)

8:00 A.M.–9:15 A.M.

591
Coordinate Plane Transformations: Have You Got the Right Image?

(6–12) Gallery Workshop

Manipulatives and the TI-Nspire Navigator will be used to explore strategies to engage students in generalizing the pattern of sets of ordered pairs under various transformations. After exploring the image of a geometric figure, each participant will create a picture and its image under a variety of transformations.

Margaret A. Bambrick
Volusia County Schools, Orange City, Florida
Ruth Casey
Teachers Teaching with Technology, Frankfort, Kentucky

203/204/205 (CONVENTION CENTER)

592
I Hate Math! Strategies for Creating Positive Disposition toward Mathematics

(6–12) Gallery Workshop

President's Series presentation

These are the words often heard by students who have been unsuccessful in mathematics. This session will describe a variety of strategies, games, and technology that can be used to motivate eighth-grade and algebra 1 students to engage in challenging mathematics and experience success.

Vanessa E. Cleaver
Little Rock School District, Arkansas
Marcelline Carr
Little Rock School District, Arkansas

R08 (CONVENTION CENTER)

593
STEM Topics: Making Them Engaging and Meaningful

(6–12) Gallery Workshop

Participants will experience a lesson that engages students in the Standards for Mathematical Practice as they investigate aerodynamics. This exercise seamlessly weaves together the STEM components as a context for deeper investigations in modeling with equations and functions. Literacy connections through a selection of books will also be made.

Leslie A. Texas
Leslie Texas Consulting, Louisville, Kentucky
Tammy L. Jones
TLJ Consulting Group, Nashville, Tennessee

217 (CONVENTION CENTER)

594
Matching, Sorting, and Exploring: Discovering Function Families

(9–12) Gallery Workshop

Join us as we match, sort, and explore with cards galore! Experience and leave with classroom-ready tasks focused on discovering characteristics to classify function families using problem situations, graphs, and equations. Walk away with completed graphic organizers for linear, exponential, quadratic, absolute value, and piecewise function families.

Samantha G. Briceno
Carnegie Learning, Pittsburgh, Pennsylvania
Kasey Bratcher
Carnegie Learning, Pittsburgh, Pennsylvania

R06 (CONVENTION CENTER)

595
You Mean I Can Do This WITHOUT a Calculator?!

(9–12) Gallery Workshop

Students often arrive with the hope that the calculator will guarantee their success in the course. This session will focus on using TI-Nspire technology to initially give students an idea of a relationship, but then encourage them to use non-calculator techniques to develop their own personal number/operation sense. Patterns are the secret and they are everywhere!

Cindy Percival
Des Moines School District, Iowa
Jeffrey Marks
Des Moines School District, Iowa

215/216 (CONVENTION CENTER)

8:00 A.M.–9:15 A.M.

596
From Conjecturing to Justification and Proof Using Geometry Explorations

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

Providing students with rich tasks that are fertile ground for making conjectures and developing mathematical arguments is essential in getting them to unpack their mathematical ideas and become ready for proof. We will share tasks that can be used to create a classroom culture where proof is a means to understand geometry ideas.

Mark A. Creager
Indiana University, Bloomington
Enrique Galindo
Indiana University, Bloomington
Zulfiye Zeybek
Indiana University, Bloomington

R02 (CONVENTION CENTER)

9:30 A.M.–10:30 A.M.

597
Making NAEP Work for You: Results and Resources

(General Interest) Session

Learn how students performed on the 2013 National Assessment of Educational Progress (NAEP) mathematics assessment and how to use actual NAEP questions to compare your students' math performance to the nation, states, and some urban districts. NAEP is conducted by the U.S. Department of Education and has been assessing student performance since 1969.

Melissa Spade Cristler
Hager Sharp, Washington, D.C.
Lauren Werner
Hager Sharp, Washington, D.C.

R01 (CONVENTION CENTER)

598
Literature Makes Fun of the Common Core State Standards for Mathematics

(Pre-K–2) Session

Create engaging math lessons based on the Common Core State Standards for Mathematics and great stories from children's literature. Join the award-winning author of fifteen children's books and bring even more imagination into your lesson plans.

M. W. Penn
Author, Hamden, Connecticut

225/226/227 (CONVENTION CENTER)

599
Cardinality Concept and Number Sense Acquisition in Young Children

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

This session will focus on the importance of developing the concept of cardinality in young children using a variety of hands-on activities for the mathematics classroom. The activities are designed to foster concept development and number sense acquisition by making connections to real-life situations.

Maria Jose Campitelli
Miami-Dade County Public Schools System, Florida

223 (CONVENTION CENTER)

600
Number and Operations Success through Tier 1 Instruction

(Pre-K–5) Session

Are you looking for ways to meet individual needs while creating and maintaining a classroom community? Learn classroom-researched strategies for using self-assessment, tiered problems, menus, and the arts to engage all students at just the right level, while debriefing as a class. See video clips of teachers implementing these ideas in kindergarten–grade 5 classrooms.

Linda Dacey
Lesley University, Cambridge, Massachusetts
Jayne Bamford Lynch
Cambridge Public Schools, Massachusetts

R05 (CONVENTION CENTER)

601
What Are They Really Thinking? Assessing for Depth of Understanding

(Pre-K–5) Session

Before we can determine an appropriate instructional path or design effective intervention experiences, we must first determine students' depth of understanding. Easier said than done! Join us for this interactive session as we examine a model for formative assessments that utilizes whole-class interviews.

Sandy Atkins
Creating AHAs, St. Petersburg, Florida

242 (CONVENTION CENTER)

602
Teaching Mathematics Using Historical and Cultural Quilt Block Patterns

(3–8) Session

This session will explore symmetry, fractions, shapes, patterns, problem solving and other mathematical concepts using quilt blocks associated with historical events and various cultures. Participants will examine paper quilt blocks created by elementary and middle school students, and they will also create their own historical quilt blocks.

Edna L. Holbrook
Jackson State University, Mississippi
Alicia Jefferson
Jackson State University, Mississippi

R07 (CONVENTION CENTER)

603
The Language of Mathematics: English Language Learners Talk about Math

(3–8) Session

This presentation will highlight the findings of a study that examined the discourse English language learners engage in during problem-solving sessions and explored how meaning is made as they work through nonroutine word problems. Educators will learn how to support the language needs of these students and will gain strategies to scaffold the academic language in the classroom.

Susan M. Kontos
Community Schools of Frankfort, Indiana

214 (CONVENTION CENTER)

604
Let's Examine Conjectures about Numbers Using Algebraic and Geometric Reasoning

(6–8) Session

Instruction can take a lively turn when conjectures about rational and irrational numbers are teacher given and investigated, or student formulated and defended. Students explore with appropriate tools, learn to reason carefully, argue the pros and cons, and communicate their results with conviction. Several rich examples will be explored.

Margaret J. Kenney
Boston College, Chestnut Hill, Massachusetts

243 (CONVENTION CENTER)

605
The 3 R's (Reading, Writing, and 'Rithmatic) and Math

(6–8) Session

We will examine how language use in the math class can be an obstacle for English language learners (ELLs). We will also learn strategies to help ELLs increase their content and academic vocabulary and improve their writing. This session is for anyone who works with ELL students but has not had any formal training in working with second language learners.

Lorie Banks
Holyoke Public Schools, Massachusetts

R03 (CONVENTION CENTER)

606
Numerical Problem Posing Based on Photographs

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

We will describe an experience carried out over the last six years in which digital photography is used as a resource for doing mathematics in the classroom. We will present activities on numerical problem posing and solving, show preservice teacher productions, and give ideas for work with pupils in grades 6–8.

Carmen Burgues
Faculty of Education, University of Barcelona, Spain
Roser Codina
Faculty of Education, University of Barcelona, Spain

230 (CONVENTION CENTER)

607
Helping Girls Develop Financial Literacy Skills

(6–12) Session

Equity strand presentation

This session presents strategies and resources for helping girls and other students develop financial literacy within the Common Core State Standards. Teaching ideas and a handout will be provided to support teachers' efforts to help girls reason quantitatively about personal finances, thereby enhancing girls' math and real-world knowledge and skills.

Heather Crawford-Ferre
University of Nevada, Reno
Lynda R. Wiest
University of Nevada, Reno
Stephanie Vega
University of Nevada, Reno

245 (CONVENTION CENTER)

608
Beyond Right Triangles: Exploring Trigonometry with New Technology

(9–12) Session

New handheld technologies such as arbitrary relation graphers and dynamic geometry allow for great opportunities to explore unit circle trigonometry. Attendees will experience a new handheld device in the context of four mini-lessons: wrapping functions; when inverses misbehave; the cosine addition formula; and DeMoivre's theorem.

Michael J. Grasse
Prospect High School, Arlington Heights, Illinois

235/236 (CONVENTION CENTER)

609 PtA
NCTM's *Principles to Actions: Ensuring Mathematical Success for All Students*

(9–12) Session

This spring, NCTM is publishing *Principles to Actions: Ensuring Mathematical Success for All.* We will discuss this statement of what is essential for achieving excellence in mathematics education and how it relates to the high school mathematics program.

W. Gary Martin
Auburn University, Alabama

GREAT HALL A/D (CONVENTION CENTER)

610
The Mathematics of Angry Birds

(9–12) Session

We will use the popular game Angry Birds as motivation for explorations of projectile motion, focusing on parametric relations to develop a model for motion. The exploration will study how the variables of angle and initial velocity affect the graph, the motion, and the game. We'll check the results for motion in other images and video captures.

John J. Diehl
CTAC, Plano, Texas

R09 (CONVENTION CENTER)

611
What If? Developing Statistical Reasoning through Structured Questioning and Assessment

(9–12) Session

Structured questioning and assessment can be used to develop conceptual understanding and enhance communications skills in Common Core and AP Statistics. Participants will discover how to utilize an inferential questioning format and assessments for learning and will develop a strategy to implement effective formative feedback in any mathematics classroom.

Jason M. Molesky
Lakeville Area Public Schools, Lakeville, Minnesota
Doug Tyson
Central York High School, York, Pennsylvania

206 (CONVENTION CENTER)

9:30 A.M.–10:30 A.M.

611.1 EW
IXL: Changing the Way Math is Practiced!

(General Interest) Exhibitor Workshop

Come learn how IXL is using web-based practice to change the way students and teachers approach math! Aligned to the Common Core State Standards, IXL engages students with dynamic content, interactive questions, and virtual awards. IXL's advanced reporting suite provides powerful tools for teachers to monitor students' progress. Grades K-12

IXL Learning
San Mateo, California

209 (CONVENTION CENTER)

611.2 EW
Get in the Kno™

(General Interest) Exhibitor Workshop

Come see how we are changing educators' approach to math instruction in a Common Core world. Whether you are in a 1:1 or BYOD environment, or simply have one iPad in your class, join us to learn how Kno for Schools™ interactive textbooks integrate digital content, collaborative tools and behavioral analytics to engage today's connected learners.

Houghton Mifflin Harcourt
Austin, Texas

208 (CONVENTION CENTER)

611.3 EW
From Physical Materials to Abstract Reasoning

(Pre-K–5) Exhibitor Workshop

From modeling mathematics to strategic use of tools to reasoning abstractly, Math Recovery® professional development and assessments help teachers gain insights into students' understanding. Teachers learn to support their students' progressive mathematization in order to develop sophistication and precision, with a session focus on place value.

US Math Recovery Council®
Apple Valley, Minnesota

218 (CONVENTION CENTER)

9:45 A.M.–11:00 A.M.

612
Math Practices in Action

(Pre-K–2) Gallery Workshop

Participants will discuss operational definitions of the Standards for Mathematical Practice and explore ways to develop authentic Common Core State Standards aligned classroom applications. The workshop will focus on how these practices prepare students in becoming proficient thinkers in their approach to mathematics.

David Whitcomb
College Board, New York, New York
Robin J. Clark
Saint David's School, New York, New York

215/216 (CONVENTION CENTER)

613
Cut, Paste, and Glue: Math Manipulatives for Understanding and Practice

(Pre-K–5) Gallery Workshop

Participants will construct math materials for understanding and practice that cover such topics as counting, place value, operations, time, and fractions. These materials will provide motivation for students learning basic math relationships as well as drill and practice of basic facts. All materials will be provided. Bring scissors if possible.

Carole J. Reesink
Retired, Minnesota State University-Bemidji

207 (CONVENTION CENTER)

614
Early Algebraic Reasoning and Misconceptions of the Equal Sign

(Pre-K–5) Gallery Workshop

Actively participate in an early algebraic learning experience for the kindergarten–grade 6 level. Using manipulatives, representations, and collaboration, we will engage in problem solving that highlights algebraic reasoning and students' misconceptions of the equal sign.

Lorelei Coddington
Whittier College, California
Wayne Snyder
Claremont Graduate University, California
Kristen Baldridge
Claremont Graduate University, California

R06 (CONVENTION CENTER)

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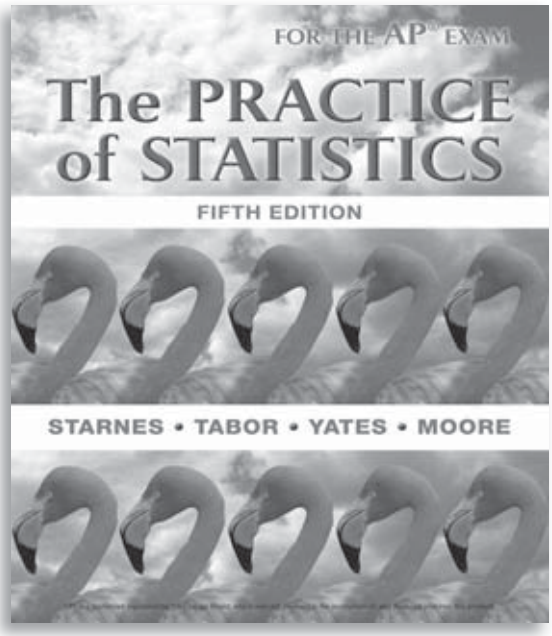

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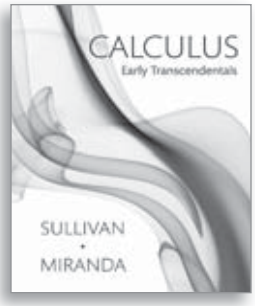

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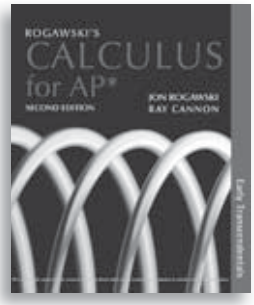
Kathleen Miranda



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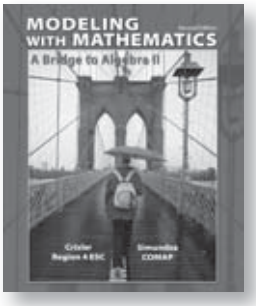
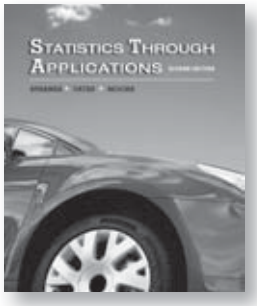
Address the Common Core with our modeling and statistics texts.



Modeling With Mathematics: A Bridge to Algebra II
SECOND EDITION
Nancy Crisler • Gary Simundza
Region IV Educational Service Center
COMAP, Inc.



Statistics Through Applications
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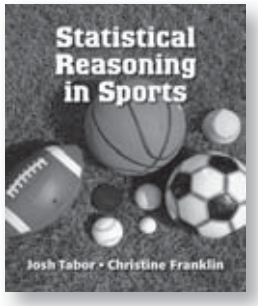

Statistical Reasoning In Sports
Josh Tabor • Chris Franklin

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For more about these and many other titles, please visit the BFW booth #1700 in the Exhibit Hall.

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9:45 A.M.–11:00 A.M.

615
Spaces for Children's Development of Structure, Pattern, and Repeated Reasoning

(Pre-K–5) Gallery Workshop

Patterns and repeated reasoning are key features of two Standards for Mathematical Practice (SMP), namely #7, "Look for and make use of structure," and #8, "Look for and express regularity in repeated reasoning." Attendees will explore the difference through a task designed for learners of differing abilities and connect the SMP and the mathematics content exhibited through the task engagement.

Gabriel T. Matney
Bowling Green State University, Ohio
Jonathan D. Bostic
Bowling Green State University, Ohio

R02 (CONVENTION CENTER)

616
Fraction Multiplication and Division: Beyond Invert and Multiply

(3–5) Gallery Workshop

Using concrete materials and ideas about multiplying and dividing whole numbers and properties of operations as a foundation, teachers can deepen their own understanding of these operations and consider strategies that support students learning how to multiply and divide fractions with understanding.

Lu Ann Weynand
Math Solutions, Sausalito, California
Mary Mitchell
Math Solutions, Sausalito, California

210 (CONVENTION CENTER)

617
Helping Children Master Multiplication Facts in a Meaningful Way

(3–5) Gallery Workshop

What does it mean for students to be fluent with multiplication facts? How can we help them meet the facts goals of the Common Core State Standards for Mathematics? Through analysis of student work and group collaboration, participants will explore meaningful and effective multiplication fact strategies and discuss how to help children learn and apply those strategies.

Amanda Ruch
Center for Elementary Mathematics and Science Education, University of Chicago, Illinois
Gina Kling
Western Michigan University, Kalamazoo
Ellen Dairyko
Center for Elementary Mathematics and Science Education, University of Chicago, Illinois

211/212 (CONVENTION CENTER)

618
Floats and Anchors: Games and Models That Build Integer Understanding

(3–8) Gallery Workshop

The stories and activities you choose when teaching integer addition and subtraction have a big impact on student understanding. Learn the keys to creating helpful metaphors as we discuss samples of student work and play instructional games designed to help move students from concrete models to symbolic understanding.

Aran W. Glancy
University of Minnesota, Twin Cities
Christy Pettis
University of Minnesota, Twin Cities
Tamara J. Moore
University of Minnesota, Twin Cities

240/241 (CONVENTION CENTER)

Relax and mingle with other attendees, take advantage of **free Wi-Fi** to check your email, and stay connected in the **BuzzHub Networking Lounge**, located inside the Exhibit Hall

EW Exhibitor Workshop · NCTM Committee · PtA Principles to Actions · SJ Social Justice

9:45 A.M.–11:00 A.M.

619
Combining Math, Art, and Poetry to Support the Common Core

(6–8) Gallery Workshop

Explore the use of short illustrated poems to deepen students' understanding of mathematics. Engage in math activities using student work from whole number operations to math properties to factoring. Discuss instructional advantages and constraints. View a variety of formats for artwork and create your own. Leave the session ready to implement what you've learned.

Sue McMillen
SUNY Buffalo State, New York

R08 (CONVENTION CENTER)

620
Transforming Students into Motivated, Successful Learners Using Choice and Technology

(6–8) Gallery Workshop

Equity strand presentation

Come discover how choice menus infused with technology have transformed our students into motivated, engaged, and successful learners. TI Technology, Mathematics in Movies clips, iPads, SMART Boards, Google Earth, and Voki avatars will be highlighted. Participants will leave with many free resources that can be readily implemented in the classroom on Monday.

Melissa G. Jackson
New Jersey Department of Education, Clarksboro
JoAnn Berkley
New Jersey Department of Education, Clarksboro
Darlyne de Haan
New Jersey Department of Education, Clarksboro

221/222 (CONVENTION CENTER)

621
Learning to Prepare Mathematics Teachers of English Language Learners

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

Equity strand presentation

In this workshop, we will model how to facilitate a professional development session for mathematics teachers of English language learners. The latest research-based instructional techniques will be modeled and illustrated utilizing tasks with a high level of cognitive demand and appropriate hands-on materials.

M. Alejandra Sorto
Texas State University/TODOS: Mathematics for All, San Marcos
Carlos Mejia Colindres
Texas State University/TODOS: Mathematics for All, San Marcos
Aaron Wilson
University of Texas-Pan American, Edinburg

228/229 (CONVENTION CENTER)

622
Exploring Functions in 3-D

(6–12) Gallery Workshop

Discover new ways to enhance your middle or high school math instruction with unique 3-D patterning tasks. We will share video of students engaged in these hands-on activities that relate measurement, algebra, and geometry. Come investigate students' strategies and leave with new tasks that can help you implement the Common Core in your classroom.

Melike Kara
New York University, Normal, Illinois
Cheryl L. Eames
Illinois State University, Normal
Amanda L. Miller
Illinois State University, Normal

R04 (CONVENTION CENTER)

9:45 A.M.–11:00 A.M.

623
Strategies Used to Promote Discourse in Math Classrooms

(6–12) Gallery Workshop

In many classrooms, students sitting together in teams does not guarantee effective mathematical discourse. Defending one's position is important, but everyone needs to be heard. We will model activities that encourage students to talk, write, and share ideas. Some of the activities will address the important issue of status within the classroom.

Christine Mikles
CPM Educational Program, Sacramento, California
Karen Wootton
CPM Educational Program, Sacramento, California

238/239 (CONVENTION CENTER)

624
To Students, They're Calculators. To Teachers, They're Teaching and Learning Tools

(6–12) Gallery Workshop

Participants will employ a hands-on approach to link the effective use of TI-Nspire CX handhelds to the Common Core State Standards (CCSS) for both mathematical content and practice. Participants will collect and investigate real-time data (sound, voltage, and motion) to make graphical analyses and CCSS correlations.

Delbra S. Robinson
Retired, Detroit Public Schools, Michigan

244 (CONVENTION CENTER)

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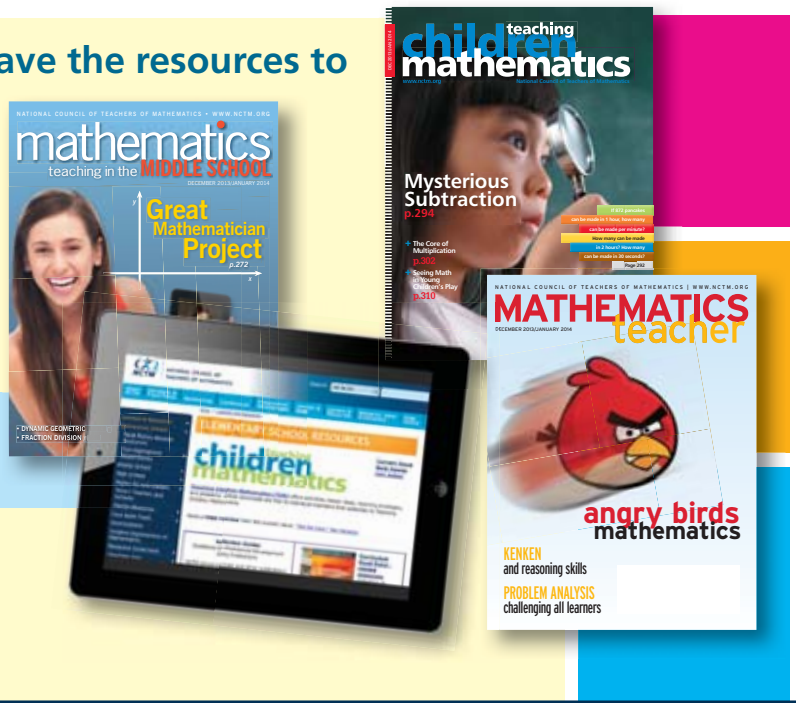

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Saturday

EW Exhibitor Workshop NCTM Committee PtA Principles to Actions SJ Social Justice

9:45 A.M.–11:00 A.M.

625
Exploring Rates of Change from Algebra to Calculus

(9–12) Gallery Workshop

With the help of technology, teachers will experience investigations designed to help students understand rates of change from algebra to calculus. Activities will focus on guiding students from a conceptual understanding of average rates of change to understanding instantaneous rates of change.

Vicki M. Carter
West Florence High School, South Carolina

203/204/205 (CONVENTION CENTER)

626
NCTM PDS Committee: Building Mathematics Learning Communities Using NCTM Reflection Guides

(Preservice and In-Service) Gallery Workshop

Engage actively in exploring journal articles that NCTM's Professional Development Services Committee has enhanced with reflection guides, available for free online. The session's facilitators will model how to use the reflection guides to build school-based, professional learning communities.

NCTM Professional Development Services Committee
National Council of Teachers of Mathematics, Reston, Virginia

217 (CONVENTION CENTER

11:00 A.M.–12:00 P.M.

627
Punz and Puzzles

(General Interest) Session

Puzzles motivate students more than story problems. Humor reduces anxiety and provokes thought. Using both can help to foster an environment where students are willing to take risks. Come share a fun hour with the author of Math Jokes 4 Mathy Folks, and learn how and why humor can improve your classroom. Be ready to laugh your asymptote off!

G. Patrick Vennebush
Discovery Education, Silver Spring, Maryland

214 (CONVENTION CENTER)

628
Latina/o Students' Trajectories of Participation in an Emerging Scholars Workshop

(General Interest, Research) Session

Equity strand presentation

In this session, I will present findings on how Latina/o undergraduate students' math and racial identities influenced positive shifts in their participation in a culturally diverse calculus workshop for Emerging Scholars at an urban university. The findings will deepen practitioners' understanding of how to design identity-affirming and equitable math classrooms.

Sarah B. Oppland-Cordell
Northeastern Illinois University/TODOS: Mathematics for All, Chicago

243 (CONVENTION CENTER)

629
Variations in Both-Addends-Unknown Problems

(Pre-K–2) Session

Starting in kindergarten, the Common Core State Standards call for students to solve a variety of word problems. We will share a framework for thinking about the variations in the least well-researched problem type: both addends unknown. We will include video clips and student work demonstrating patterns in student thinking and solution strategies.

Claire M. Riddell
Duval County Public Schools, Jacksonville, Florida
Zachary Champagne
Florida Center for Research in Science, Technology, Engineering, and Mathematics (FCR-STEM), Tallahassee
Robert Schoen
Florida Center for Research in Science, Technology, Engineering, and Mathematics (FCR-STEM), Tallahassee

242 (CONVENTION CENTER)

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11:00 A.M.–12:00 P.M.

630
When In Doubt—Add!

(Pre-K–2) Session

Students *can* go beyond finding the numbers and adding in every problem-solving situation. Developing meaning for addition and subtraction situations will be shown using graphic organizers, story mats, number lines, and songs.

Kathy Davis
Retired Teacher and Administrator, Lubbock Independent School District, Texas

235/236 (CONVENTION CENTER)

631
Teaching Number Sense: The Role of Cognitive and Explicit Instruction

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

This study evaluated the effectiveness of number sense instruction on the acquisition and maintenance of mathematics competence by kindergarten students. A total of 137 students from two schools in Connecticut participated in the study. Results indicated significant differences favoring the treatment of students on all measures.

Sheetal Sood
University of Hartford, West Hartford, Connecticut

R01 (CONVENTION CENTER)

632
It's All in the Words: Developing Multiplication through Contextual Situations

(3–5) Session

Come explore the various contextual situations that set the foundation for developing multiplicative thinking. You will study the various problem formats, explore representations of the situations, and leave with a clear understanding of the importance of the role of unknown factor problems.

Beth A. Schefelker
Milwaukee Public Schools, Wisconsin
Connie Laughlin
University of Wisconsin–Milwaukee

230 (CONVENTION CENTER)

633
Formative Assessment: How Real-Time Feedback Moves a Lesson Forward

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

We will present findings from a mixed-methods study of instructional practices of fourth-grade teachers. Our major theme will be the use of formative assessment, with particular attention given to formative assessment as means of moving a lesson forward toward a mathematical goal in real time. Examples and suggestion for practice will be provided.

Holly Henderson Pinter
Western Carolina University, Cullowhee, North Carolina
Barbara A. Swartz
McDaniel College, Westminster, Maryland

223 (CONVENTION CENTER)

634 SJ
Discourse Practices and Equity for Students with Learning Disabilities

(3–8) Session

Mathematical discourse is critical if all students are to improve their communication and problem-solving skills. The NCTM and Common Core standards acknowledge the importance of discourse, yet we still need to examine how students with learning disabilities can fully participate in regular or special education classrooms. The tensions found in each setting will be discussed.

John Woodward
University of Puget Sound, Tacoma, Washington

R03 (CONVENTION CENTER)

635
Using Benchmark Numbers to Access Fraction, Decimal, and Percent Understanding

(3–8) Session

How can we make understanding fractions, decimals, and percents easier? We explore how benchmark numbers such as 0, 1/2, and 1 are powerful tools allowing students to reason abstractly and quantitatively. You'll leave with ways your students can use benchmarks for number sense and understand how you can incorporate these ideas in the classroom tomorrow!

Diana Quincannon
The Children's School, San Diego, California
Cara Dunn
The Child's Primary School, San Diego, California

206 (CONVENTION CENTER)

636
Using Models to Develop Ratios and Proportional Relationships

(6–8) Session

Participants will explore tasks that highlight the use of the tape diagram, ratio table, and double number line to help students solve problems involving ratios and proportional relationships. The connection of these models to later work with rates and linear relationships will be investigated.

Barbara Diliegghio
Self-Employed Consultant, Clarkston, Michigan

R09 (CONVENTION CENTER)

637
Problem-Based Learning (PBL) Is More Than Solving Problems

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

Engaging students in problem-based learning (PBL) is so much more than asking them to solve problems. It makes connections between the content standards in NCTM's *Principles and Standards* and the Common Core's Standards for Mathematical Practice. Learn how students construct questions, do research to get answers, create problems, and reason through multiple solution strategies. Let's begin with a PBL scenario.

L. Diane Miller
Middle Tennessee State University, Murfreesboro
Brandon Banes
Lipscomb University, Nashville, Tennessee

245 (CONVENTION CENTER)

638
Two Birds, One Stone: Transformations, Functions, and the Common Core

(6–12) Session

In grades 7–12, the Common Core State Standards for Mathematics emphasize functions and geometric transformations, and they state 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
21st Century Partnership for STEM Education, Philadelphia, Pennsylvania
Daniel Scher
KCP Technologies, New York, New York

225/226/227 (CONVENTION CENTER)

639
Conjecture and Proof in Geometry: A Practical Unit of Study

(9–12) Session

Many geometry texts focus on proving triangles congruent under a variety of conditions. In this presentation, we start from a property common to all quadrilaterals and prove that it is a common property. Then we extend our thinking to a set of conjectures that students can come up and then actually prove by themselves.

GT Springer
Hewlett-Packard, Fort Collins, Colorado

R05 (CONVENTION CENTER)

640
Making Sense of Factoring Methods through Visualization

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

Many procedures for factoring trinomials like $6x^2 + 5x - 4$ exist, but most make little or no sense. Using a unique transformational approach to graphing, the presenter of this session will show why methods like Slip and Slide and AC work, while also strengthening the important connections among algebraic, graphical, and numerical representations of quadratic functions.

Jeffrey J. Steckroth
Christopher Newport University, Newport News, Virginia

R07 (CONVENTION CENTER)

11:30 A.M.–12:00 P.M.

641
Math Games Supporting CCSS and Meaningful Independent Practice

(General Interest) Burst

The games highlighted within this session support and sustain a math workshop model, while complementing any math curriculum. These games support standards, with an emphasis on the Common Core domains of Operations and Algebraic Thinking, and Number and Operations in Base Ten, from kindergarten through grade five.

Jamee Petersen
Eden Prairie Schools, Minnesota

203/204/205 (CONVENTION CENTER)

642
Say This . . . Not That!

(General Interest) Burst

Call it what it is! Learn how using the correct mathematics vocabulary will enhance your students' academic growth and test performance. Discover ways to help your students gain the robust academic vocabulary needed within the Common Core. Walk away with strategies to help your students make real world connections with mathematics vocabulary.

Stephanie A. Bowman
Lawton Public Schools, Oklahoma
Lisa A. Bell
Lawton Public Schools, Oklahoma
Pamela L. Ramey
Lawton Public Schools, Oklahoma

R06 (CONVENTION CENTER)

643
Subitizing Activities That Promote Number Sense with Pre-K Students

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

Learn how to incorporate engaging subitilizing activities that promote number sense into your daily classroom routines. Specific activities as well as videos of pre-kindergarden-aged students participating in these activities will be shared.

Sararose D. Lynch
Westminster College, New Wilmington, Pennsylvania
Diana Reed
Westminster College, New Wilmington, Pennsylvania

238/239 (CONVENTION CENTER)

644
"Knock Some Sense" into Your Warm-Ups

(Pre-K–5) Burst

Number sense, that is. This workshop includes number sense routines that wake up students' minds and bodies. Learn how incorporating movement into warm-ups can increase motivation, deepen student understanding of number relationships, and close the math experience gap. Walk away with an array of activities to amp up your math class.

Renee Snyder
Gahanna Jefferson Public Schools, Ohio
Devin Anderson
Gahanna Jefferson Public Schools, Ohio
Susan M. Signet
Gahanna Jefferson Public Schools, Ohio

240/241 (CONVENTION CENTER)

645
Pizza Math—It's Delicious!

(3–5) Burst

Taking orders for pizza for Friday lunches was a challenging but rich experience for a group of students in grades 3 and 4. Calculating profit, predicting total slices ordered for the year, and dealing with the data generated were only a few of our projects. We'll look at what students gained from the experience—and find out how tall the pile of a year's worth of pizza boxes would have been!

Stephen Currie
Poughkeepsie Day School, New York

R02 (CONVENTION CENTER)

646
Ten Lies My Math Teacher Told Me

(3–5) Burst

Precision is one of the Standards for Mathematical Practice in the Common Core. But precision isn't just for students—teachers must also be precise in their language. The ten "lies" we will expose in this session lead to misconceptions that hinder student understanding of mathematics and may be caused by teachers' unknowing use of imprecise language. Follow us to uncover the "truth."

Michelle R. Reel
Metropolitan School District of Washington Township, Indianapolis, Indiana
Laura K. Sellars
Metropolitan School District of Washington Township, Indianapolis, Indiana

R08 (CONVENTION CENTER)

11:30 A.M.–12:00 P.M.

647
Got Linear Equations? Now Let's See What They Mean

(6–12) Burst

You have taught function, tables, graphs, intercept, and slope, but do your students really get it? In the lesson presented here, students use the Common Core's modeling standards to work through stations to gather data and model the linear relationship. Worksheets, extensions, rubrics, and samples of the final project will be shared.

Stacy M. Remphrey
Unionville-Chadds Ford School District, Kennett Square, Pennsylvania

215/216 (CONVENTION CENTER)

648
Invest in Financial Literacy—and Common Core Content, Too!

(6–12) Burst

Both financial literacy and mathematical proficiency are critical goals for all students. We will share middle and high school lessons and resources for meaningfully embedding financial literacy into mathematics instruction that is aligned to the Common Core State Standards.

Sherri L. Martinie
Kansas State University, Manhattan
Susan A. Peters
University of Louisville, Kentucky
Sarah B. Bush
Bellarmine University, Lousville, Kentucky

R04 (CONVENTION CENTER)

649
Jazzing Up Algebra through Modeling: Supporting Student Understanding and Success

(6–12) Burst

The Common Core State Standards include modeling as one of the Standards for Mathematical Practice and as a conceptual category of the high school standards. This session describes a modeling approach to algebra with technology integrated throughout to provide students access to dynamic representations of algebra concepts.

Judith Olson
University of Hawaii, Honolulu
Fay Zenigami
University of Hawaii, Honolulu
Linda Venenciano
University of Hawaii, Honolulu

210 (CONVENTION CENTER)

650
Sometimes Rational, Sometimes Irrational, Always Decimals, Never Fuzzy

(6–12) Burst

Are your students lost in the transition from learning rational to irrational numbers? Discover how decimals can enhance students' learning experience by providing a common ground that is often discussed but seldom detailed. Explore multiple strategies to link decimals with rational and irrational numbers.

Hartono Tjoe
Rutgers University, New Brunswick, New Jersey

221/222 (CONVENTION CENTER)

651
Bringing the (Signal and the) Noise!

(9–12) Burst

Many teachers are hesitant to use a nontraditional text in math class. Yet integrating the storytelling and narratives of such texts can significantly improve the quality of your classes. In this presentation, I will share my experiences incorporating Nate Silver's best-selling nonfiction book *The Signal and the Noise* into my statistics class.

Brandon D. Price
Khabele School, Austin, Texas

228/229 (CONVENTION CENTER)

11:30 A.M.–12:00 P.M.

652
Learning to Mentor Preservice Mathematics Teachers in Urban Schools

(Higher Education, Preservice and In-Service) Burst

Cooperating teachers working with preservice mathematics teachers participated in a yearlong effort to develop their mentoring skills. We will share activities, mentoring self-assessment scales developed collaboratively, and the perceived impact of the training on cooperating, student teachers' development, and student mathematics learning.

Ruth H. Yopp
California State University, Fullerton
Mark W. Ellis
Board of Directors, National Council of Teachers of Mathematics; California State University, Fullerton
Richard Quiroz
Loara High School, Anaheim, California

207 (CONVENTION CENTER)

12:30 P.M.–1:30 P.M.

653

When Punchlines Include Slopes and *Y*-Intercepts

Closing Session by Bill Amend

Remarks by NCTM President Linda M. Gojak

FoxTrot cartoonist Bill Amend has been injecting math and science humor into North America's funny pages for more than 25 years. He'll share examples and stories as he discusses the joys and challenges of bringing math to the masses.

Bill Amend is the creator of the comic strip *FoxTrot*, published nationwide for more than 25 years. He holds a Bachelors Degree in physics from Amherst College, although usually he puts it down while working. His strip has spawned several dozen book collections, a popular website, and somehow earned him the National Cartoonists Society's Reuben Award for Cartoonist of the Year in 2006. He currently lives in the Midwest with his wife and two children.

Bill Amend
Cartoonist, Creator of *FoxTrot*

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July 10–12, 2014 | San Diego

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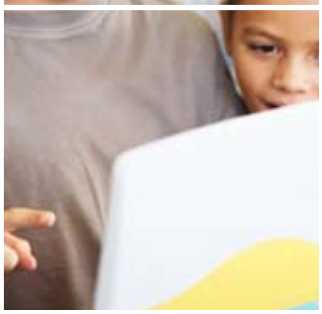

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- increase your understanding of the mathematical content of the Common Core domains that emphasize number; and
- consider how *Principles to Actions: Ensuring Mathematical Success for All* can regularly affect your implementation of CCSSM as you consider access and equity, learning, teaching, curriculum, assessment, and your own professional development.

Visit **www.nctm.org/number** to learn more and register.

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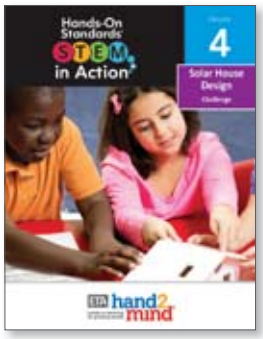

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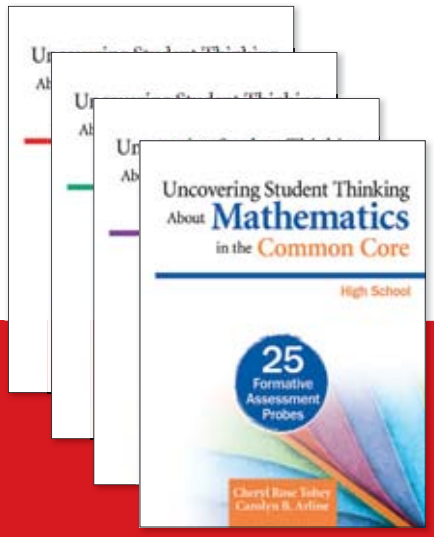

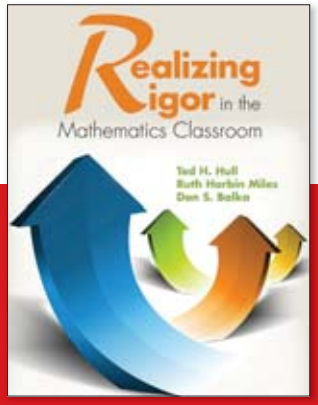

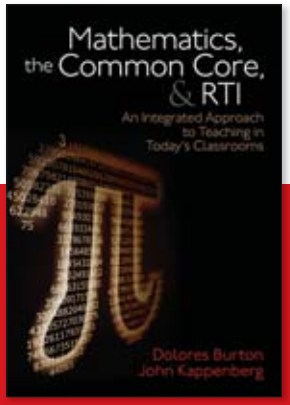

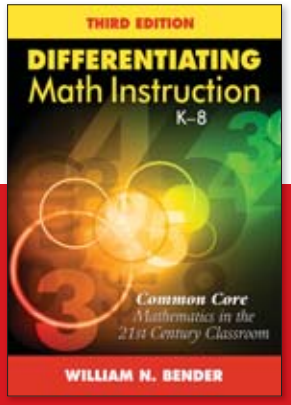

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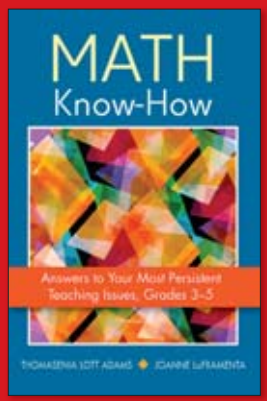

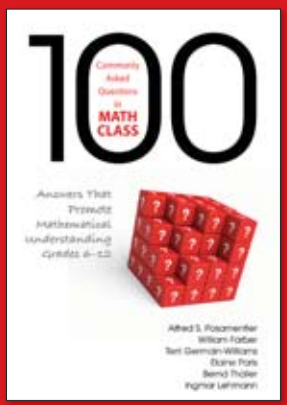

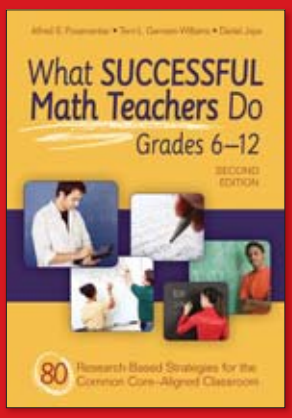

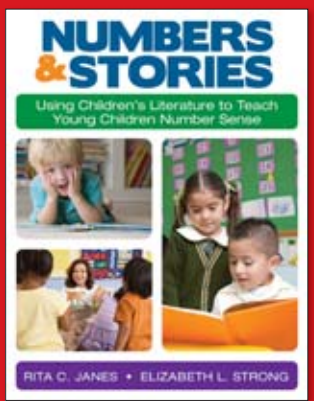

General Info

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Tips for a Rewarding Annual Meeting & Exposition

- Access the Conference App for conference alerts and up-to-the-minute information. Visit **www.nctm.org/confapp**.
- Access speaker handouts at **www.nctm.org/planner**.
- Become familiar with the layout of the Ernest N. Morial Convention Center and the Hilton New Orleans Riverside by reviewing the floor plans on pages 166–171.
- Visit the NCTM Bookstore for the latest NCTM educational resources, and the Member Showcase, where you can pick up free resources and learn more about how NCTM can help you professionally.
- Visit the Exhibit Hall, where more than 200 exhibitors will share the latest educational products.
- Stop by the New Orleans Information Booth or the Concierge Desk for information on the New Orleans area.
- If attending the conference with colleagues, attend different presentations and share your learned knowledge after the conference.
- Silence cell phones during presentations.
- The more you participate in the presentations, the more you will get from the conference.
- Tell us about your conference experience by responding to the post-conference online survey.
- 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. NCTM will charge a $10 fee for replacement badges.

By registering for the NCTM 2014 Annual Meeting & Exposition, participants grant NCTM the right to use, in promotional materials, their likeness or voice as recorded on, or transferred to, videotape, film, slides, audiotape, or other media.

Research Conference

The Research Conference, jointly sponsored by the NCTM Research Committee and the Special Interest Group on Research in Mathematics Education of the American Educational Research Association, will take place Monday–Wednesday, April 7–9, at the Ernest N. Morial Convention Center. The Research Conference Registration Area is in Lobby A of the Ernest N. Morial Convention Center.

The Research Conference will open with a poster session in Rooms 217/218 beginning at 5:45 p.m. The Opening Session will take place at 7:00 p.m. on Monday, April 7 in Rooms 208/209/210 followed by a welcome reception at 8:30 p.m. in Rooms 220/221/222. Concurrent sessions will begin at 8:30 a.m. on Tuesday, ending with a research poster session. The Wednesday program begins at 8:30 a.m. The Linking Research and Practice Plenary is at 10:15 a.m.–11:15 a.m. in Room 208/209/210. Concurrent sessions will run until 4:00 p.m. Registered NCTM Annual Meeting attendees may attend Wednesday's Research Conference presentations at no extra charge with their badge.

Technology at Your Fingertips

Wi-Fi Access

The Ernest N. Morial Convention Center offers complimentary wireless access in the food court atrium and some common areas. The NCTM BuzzHub is the only place on the Exhibit Hall floor that offers complimentary Wi-Fi.

Conference App

The NCTM conference app for iPhones and iPads, also available as a mobile Web app for Android, Windows Mobile, and BlackBerry devices, keeps you connected with every aspect of the Annual Meeting. The free app allows you to search sessions, speakers, and exhibits; view the Exhibit Hall floor plan; highlight your favorite presentations; get a Twitter feed update (official Twitter hashtag #NCTMNOLA); and rate presentations. Stay up to date with the latest program changes. Visit **www.nctm.org/confapp** for more information.

Online Planner

The online planner is a great way to search the conference program book, set up your schedule, and download presentation handouts. The online planner is up to date with the latest program changes and presentation information. Visit **www.nctm.org/planner**.

Presentation Handouts

Attendees can access available electronic presentation handouts through the conference app and online planner.

All Year Long

When you return home, don't forget to download NCTM's free Android or iPhone app. The NCTM app gives you 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. You can be up to the minute on NCTM activities, teaching tips, and classroom resources. The new app also includes Facebook and Twitter feed updates. Visit **www.nctm.org/nctmmobile/** for more information and to download the app.

NCTM BuzzHub

Check out the NCTM BuzzHub. This exciting area has everything "NCTM" all in one convenient location, right in the middle of the Exhibit Hall, and is the only place on the Exhibit floor that offers complimentary Wi-Fi access.

- Pick up free take-home activities and resources, sample journals, and more at the **Member Showcase**. You'll have the chance to update your membership information, learn more about the benefits, and participate in a prize drawing. Plus, when you join or renew your NCTM membership you will receive a free t-shirt. Supplies are limited.
- View and play online math strategy games while learning about NCTM's **Illuminations** Project and other online resources at Calculation Nation®.
- Listen to NCTM journal editors present short sessions that discuss how to write an article for NCTM journals, become a reviewer, and more at the **Networking Lounge**. A schedule is available on pages 8 and 72 and in the on-site *Daily News*.
- Relax and mingle with other attendees, check your email, and stay connected with the latest social media updates in the **Networking Lounge**. Download the conference app to receive alerts for scheduled networking meetups!

The NCTM BuzzHub is a dynamic space, with new ideas to help you in every way imaginable. Check us out in the Exhibit Hall during exhibit hours.

NCTM Bookstore

Save 25% off the list price on all purchases made at the on-site NCTM Bookstore, located in the Exhibit Hall at the Ernest N. Morial Convention Center. 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.**

Note on Sales Tax Exemptions: To qualify for sales tax exemption in the NCTM Bookstore, you must furnish a copy of a Louisiana tax exemption certificate, issued by the state, at the time of purchase. The law requires NCTM to keep a copy of the certificate, which we cannot return to you. You must pay with a purchase order, check, or credit card from the school to which the exemption certificate is issued. NCTM cannot accept personal checks, personal credit cards, and cash in conjunction with tax exemption certificates.

The NCTM Bookstore is not equipped to handle shipping from the meeting site. A business center located at each meeting facility is ready to assist you with your shipping needs.

Shuttle Service

Attendees who reserved their hotel room through NCTM's official housing company will receive complimentary shuttle service from hotels in the NCTM housing block to the Ernest N. Morial Convention Center. Some hotels are within walking distance of the convention center and will not have shuttle service. Routes and schedules will be posted in your hotel lobby and can be found online at www.nctm.org/neworleans_general. The schedule will be followed as closely as possible. If you have questions, please visit the shuttle desk located at the shuttle area entrance of the Ernest N. Morial Convention Center.

Airport Shuttle

Please visit the Concierge Desk or the General Information page of the NCTM 2014 Annual Meeting website (www.nctm.org/neworleans_general) for more information on a special discount for NCTM Annual Meeting attendees.

Information Booth

The NCTM Information Booth is located in the lobby of the Ernest N. Morial Convention Center. Local staff will be available to answer your questions.

Lost-and-Found

You may retrieve or turn in lost-and-found items at the NCTM Information Booth. At the end of each day, all lost-and-found items will be turned over to Convention Center Security.

Restaurant Reservations

Explore the fabulous restaurants of New Orleans! Stop by the Concierge Desk located in the lobby at the Ernest N. Morial Convention Center. The friendly staff will be available to offer recommendations and make reservations. They can also assist you with directions and local information, from transportation and historical sites to shopping and entertainment.

Bag and Coat Check Service

A bag and coat check service is available for you to store your belongings during conference hours for a nominal fee. During conference hours, you can check your items at the bag check, located in the lobby of the Ernest N. Morial Convention Center, Thursday through Saturday. Please pick up all items each day by closing time; you may not leave items overnight.

First Aid

A first-aid station will be staffed at the Ernest N. Morial Convention Center during the NCTM program. If you need medical services while in New Orleans, please check with the hotel concierge for the closest medical facilities. For any medical emergency, call 911 without hesitation.

For Your Child's Safety

Because of the size and nature of the NCTM 2014 Annual Meeting & Exposition, this event is not an appropriate setting for children under 16 years of age. Your hotel concierge will be able to recommend activities available for children while you attend the conference. We appreciate your understanding and cooperation. Children 16 years and over will need to register as nonteaching guests. To register a nonteaching guest, stop by the Registration Area at the Ernest N. Morial Convention Center.

NCTM Clear Air Act

In accordance with a resolution of the 1978 Delegate Assembly, smoking is permitted only in designated areas.

Your Opinion Counts

Thank you for attending the NCTM 2014 Annual Meeting & Exposition. In the days after the Annual Meeting, you will receive an e-mail asking you to evaluate your meeting experience. Please complete the conference attendee 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.

Exhibit Hall Information

Exhibits

Make time to visit the NCTM Exhibit Hall. The hours allow ample opportunity to explore, try out, and purchase products and services for your classroom or to help you meet your career goals. You can also meet the people who produce these products, get fresh ideas, and see how products work. The hall will be open on Thursday from 8:00 a.m to 5:00 p.m., Friday from 8:00 a.m. to 6:00 p.m., and Saturday from 8:00 a.m. to 12:00 p.m. To give you dedicated time to visit the exhibits, no presentations will take place between 5:00 p.m. and 6:00 p.m. on Friday. Check out the list of exhibitors and a floor plan of the Exhibit Hall on pages 178–179.

Exhibitor Workshops

Do you want more in-depth and personal interaction with exhibitors? Plan to attend the Exhibitor Workshops. Held on Thursday, Friday, and Saturday, these workshops offer a wide variety of topics. See the program for Exhibitor Workshop offerings, indicated by EW after the presentation number.

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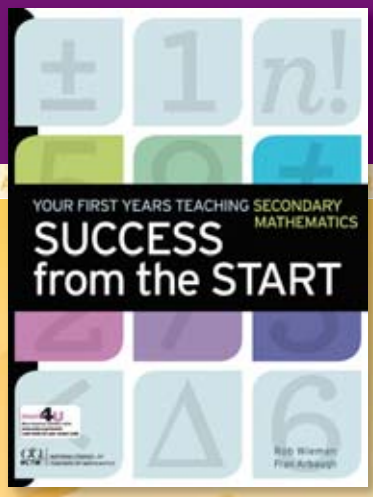

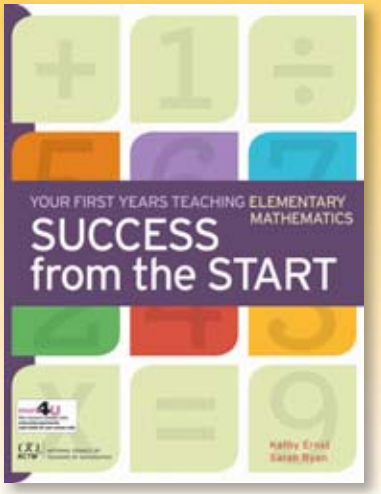

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BY ROB WIEMAN AND FRAN ARBAUGH
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The Host Affiliate for the NCTM 2014 Annual Meeting & Exposition and the Affiliates-at-Large are listed below. E-mail the Affiliate contact for membership information.

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 at **www.nctm.org/affiliates/**.

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Dorothy Buerk, buerk@ithaca.edu

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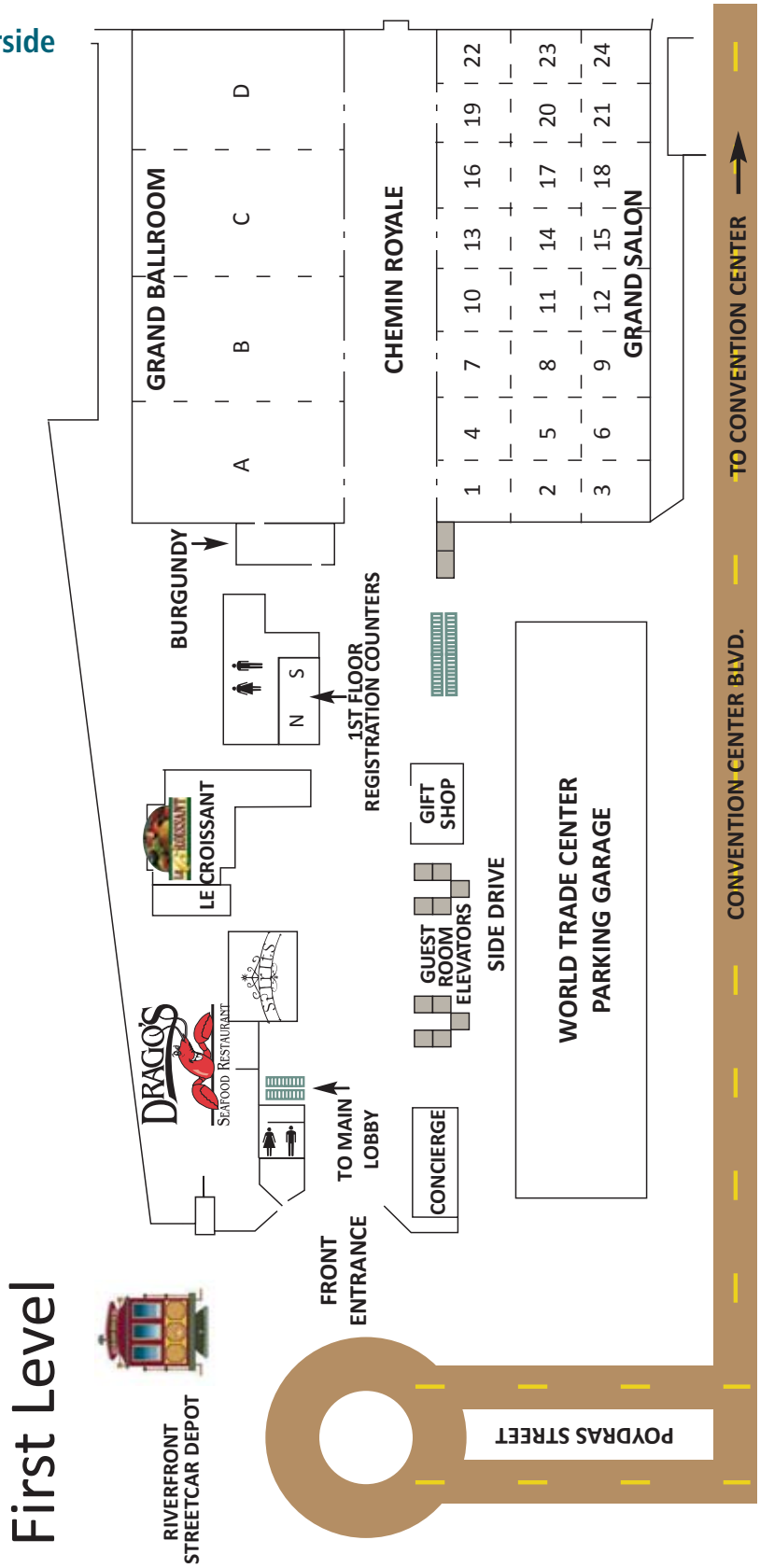
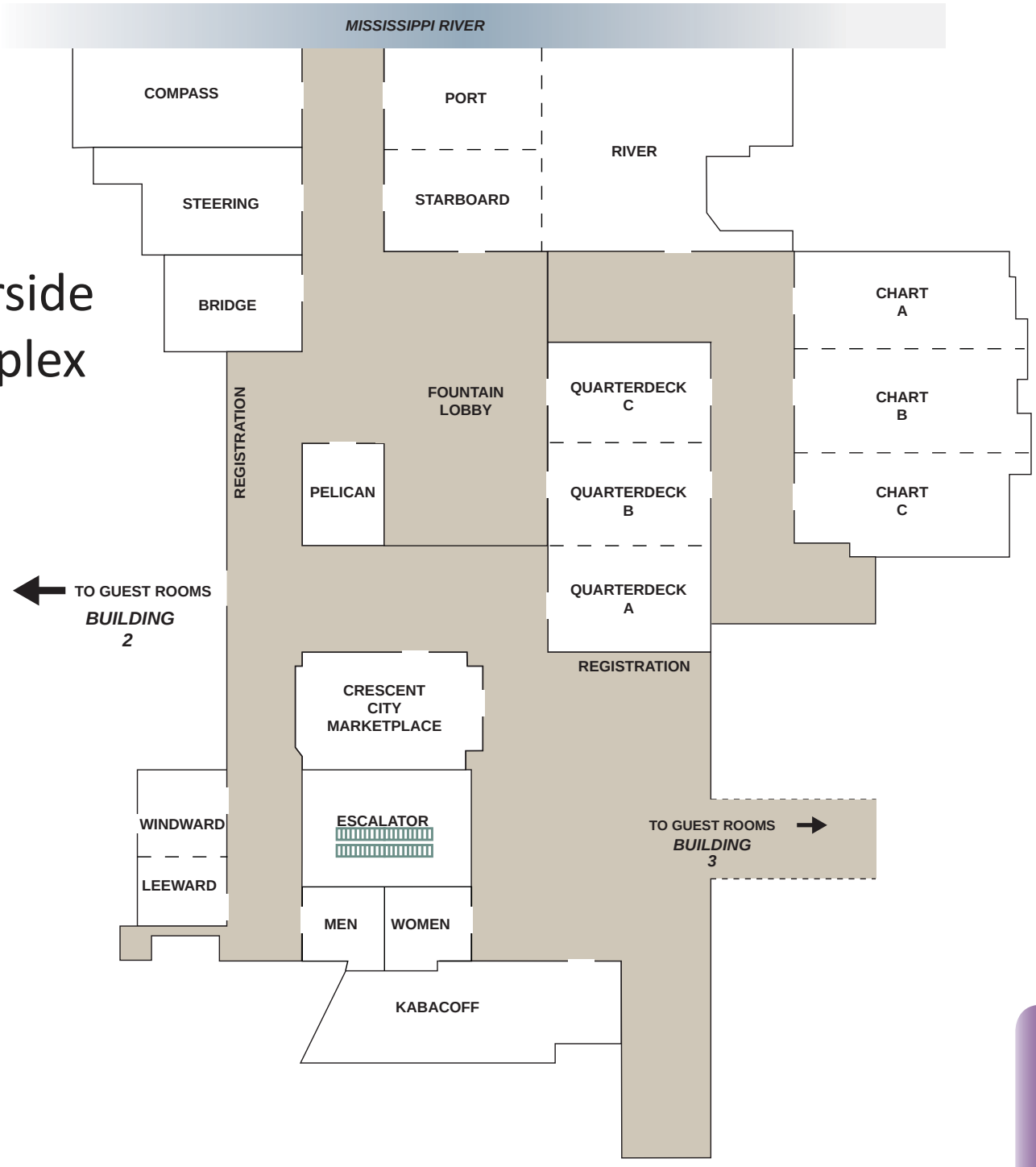
Hilton New Orleans Riverside

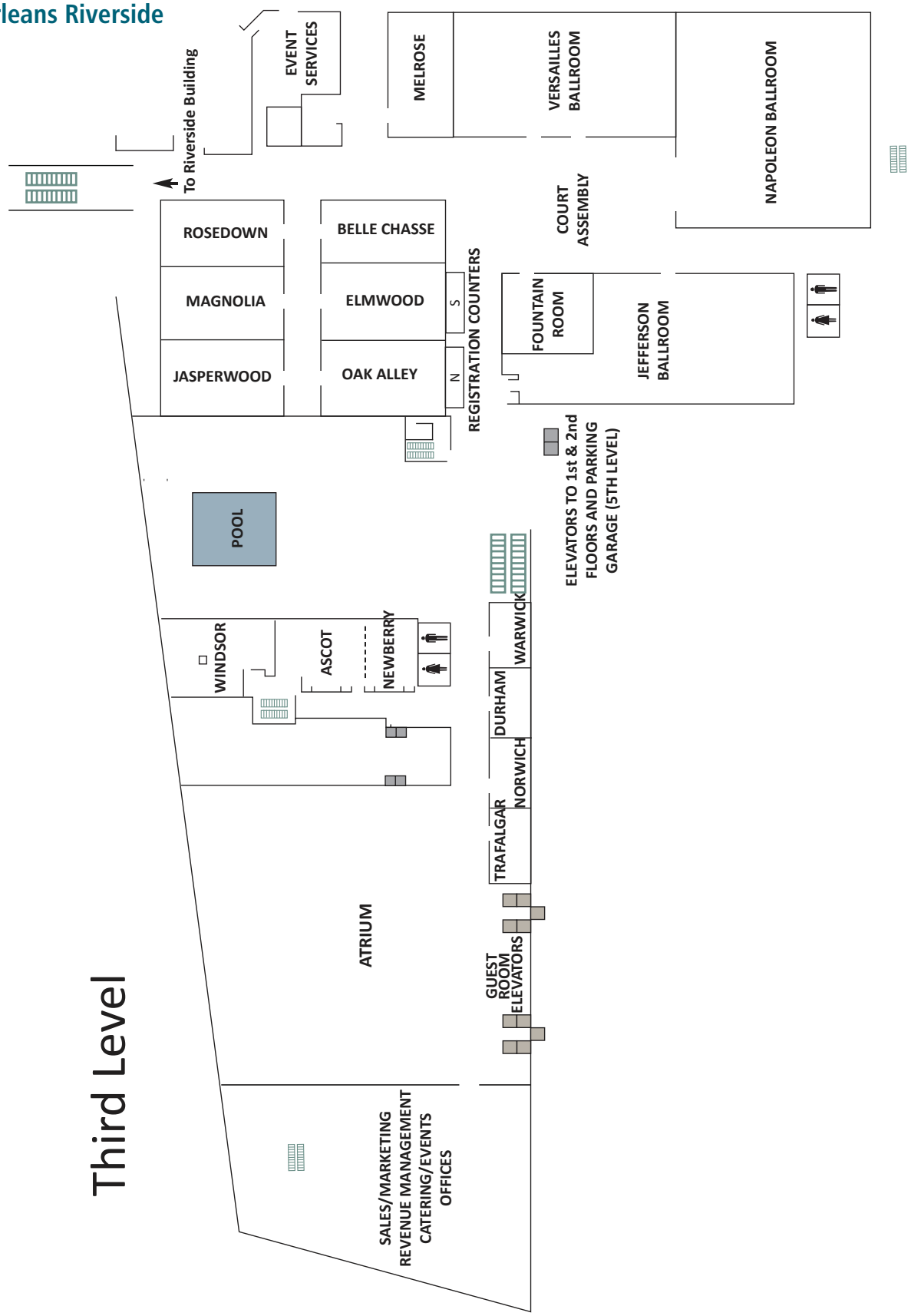


Hilton New Orleans Riverside

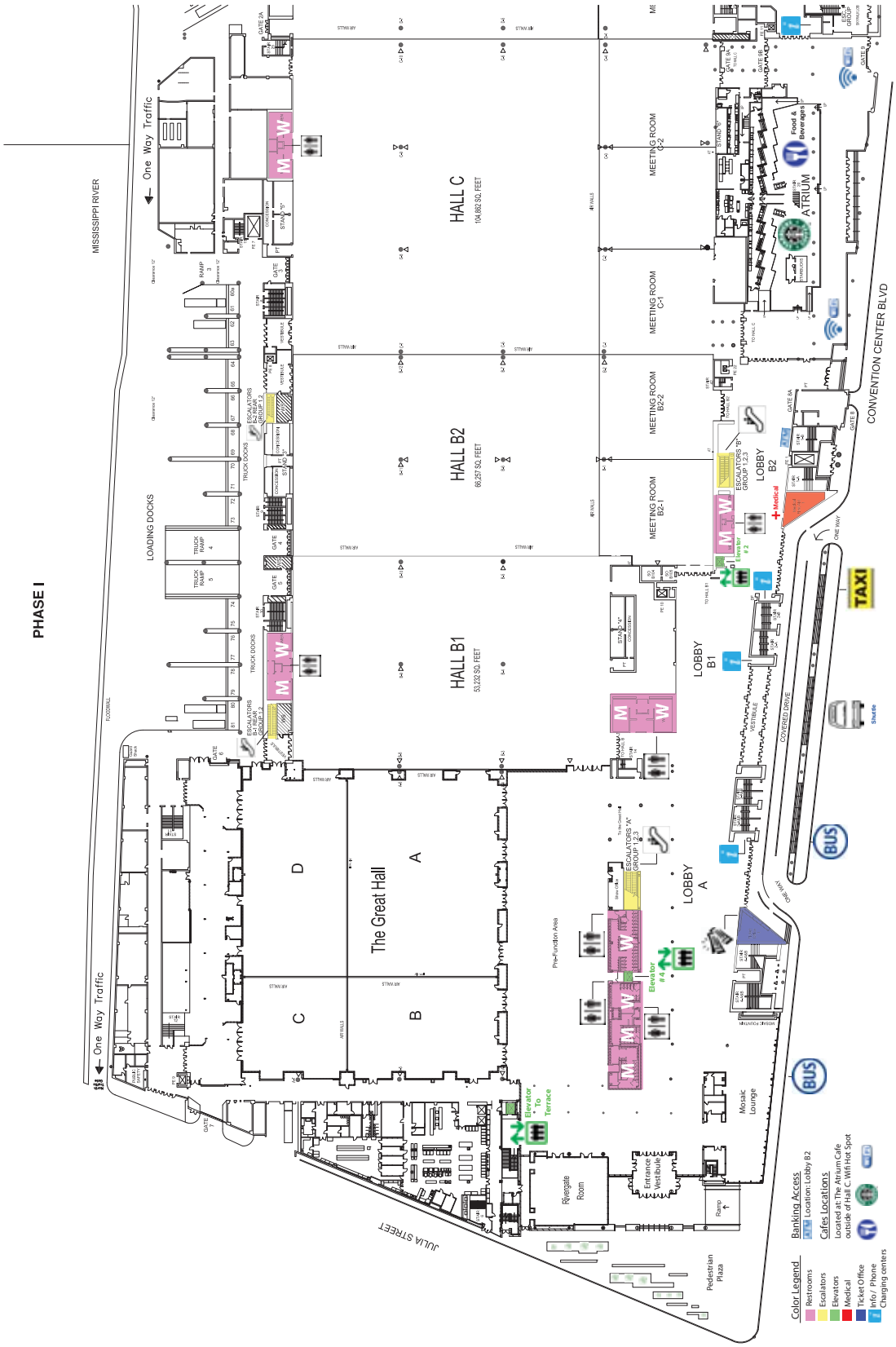
Riverside Complex



Hilton New Orleans Riverside

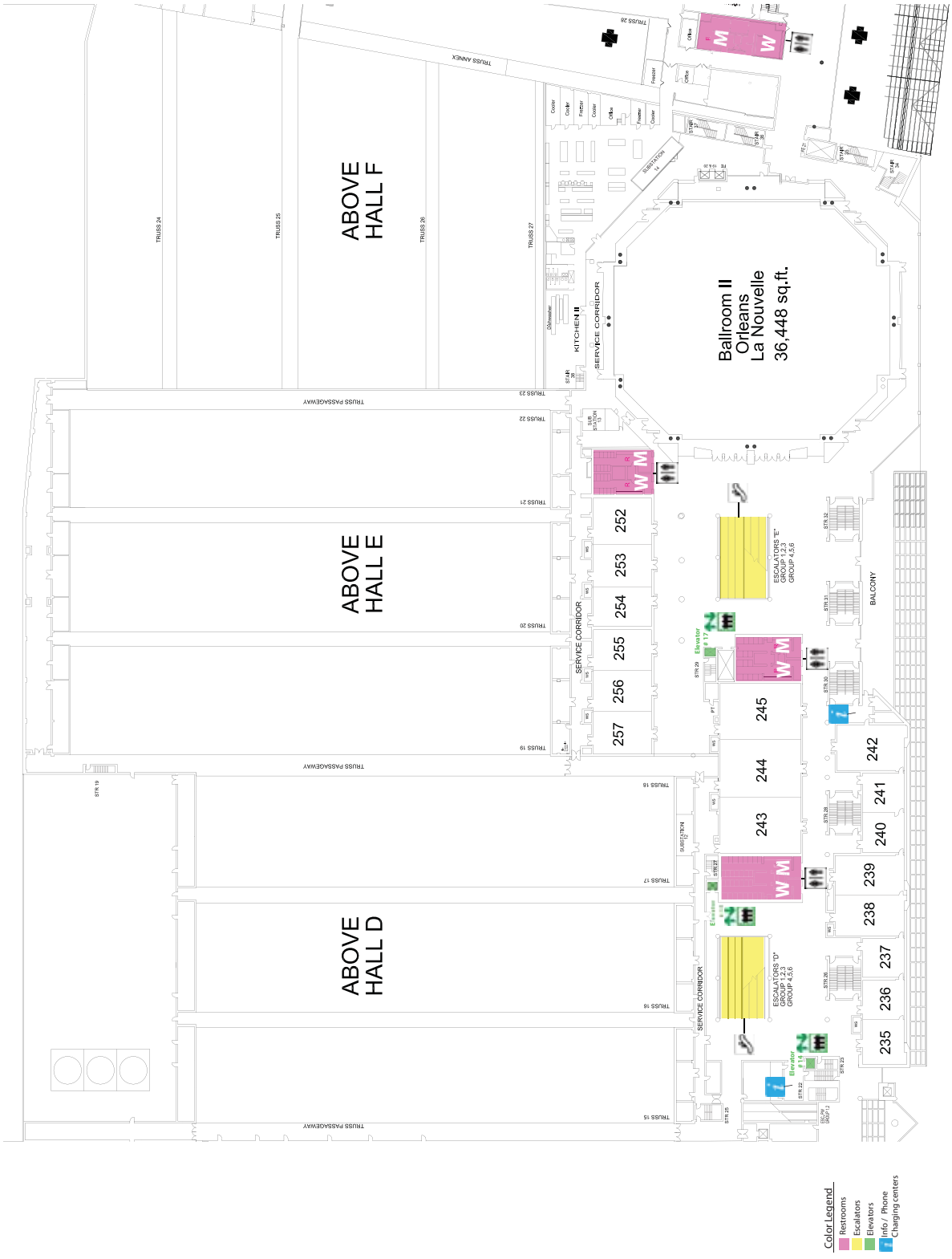


Ernest N. Morial Convention Center



Ernest N. Morial Convention Center

Ernest N. Morial Convention Center



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Map #	Hotel	Single	Double	Double/ Double	Triple	Quad	# of Blocks from Convention Ctr.
1.	Courtyard by Marriott Convention Center	$209	$229	$229	$249	$269	1.5
2.	Courtyard Downtown St. Charles	$209	$229	$229	$249	$269	7.5
3.	Doubletree Hotel New Orleans	$189	$209	$209	$229	$249	4.5
4.	Embassy Suites New Orleans	$215	$215	$215	$235	$255	1.5
5.	Hampton Inn & Suites Convention Center	$190	$200	$200	$200	$200	across street
6.	Hilton Garden Inn Convention Center	$169	$169	$169	$189	$209	1
7.	Hilton Riverside New Orleans (HQ)	$220	$240	$240	$265	$285	2
8.	Hyatt Place New Orleans	$209	$209	$209	$229	$249	across street
9.	JW Marriott New Orleans	$239	$259	$259	$279	$299	7
10.	Loews New Orleans Hotel	$259	$259	$259	$289	$319	8
11.	New Orleans Marriott Convention Center	$239	$259	$259	$279	$299	across street
12.	New Orleans Marriott Canal Street	$229	$249	$249	$269	$289	6
13.	Renaissance Arts Hotel	$239	$259	$259	$279	$299	3.5
14.	Residence Inn Convention Center	$219	$239	$239	$259	$279	2
15.	Sheraton New Orleans	$219	$239	$239	$264	$289	6
16.	SpringHill Suites Convention Center	$219	$239	$239	$259	$279	2
17.	W New Orleans	$249	$249	$249	$269	$289	3
18.	Westin New Orleans Canal Place	$219	$229	$229	$239	$249	3.5
19.	Wyndham Riverfront New Orleans	$189	$189	$189	$209	$209	1

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The National Council of Teachers of Mathematics is the public voice of mathematics education, supporting teachers to ensure equitable mathematics learning of the highest quality for all students through vision, leadership, professional development, and research. With nearly 80,000 members and more than 200 Affiliates, NCTM is the world's largest organization dedicated to improving mathematics education in prekindergarten through grade 12. The Council's *Principles and Standards for School Mathematics* includes guidelines for excellence in mathematics education and issues a call for all students to engage in more challenging mathematics. NCTM is dedicated to ongoing dialogue and constructive discussion with all stakeholders about what is best for our nation's students.

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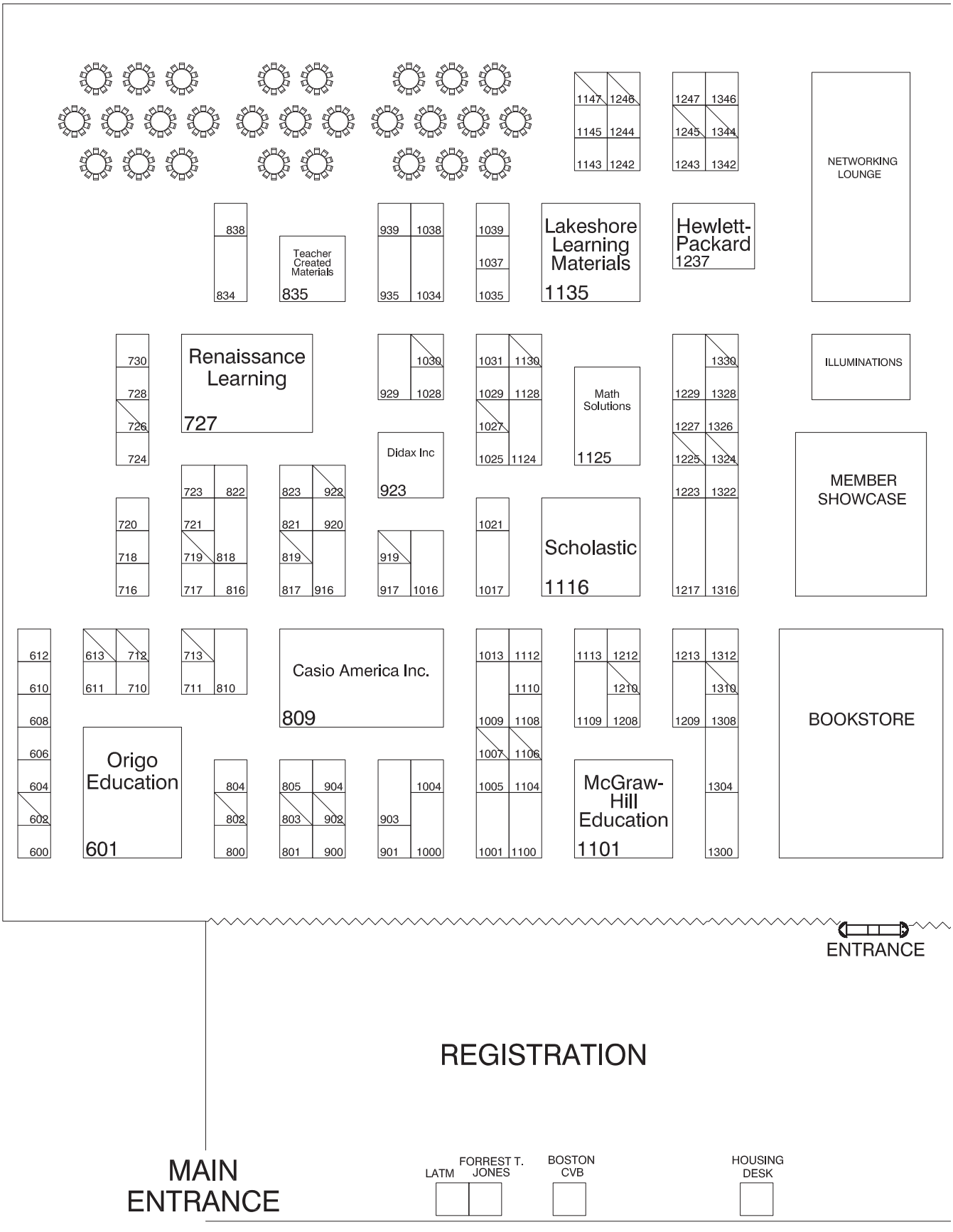

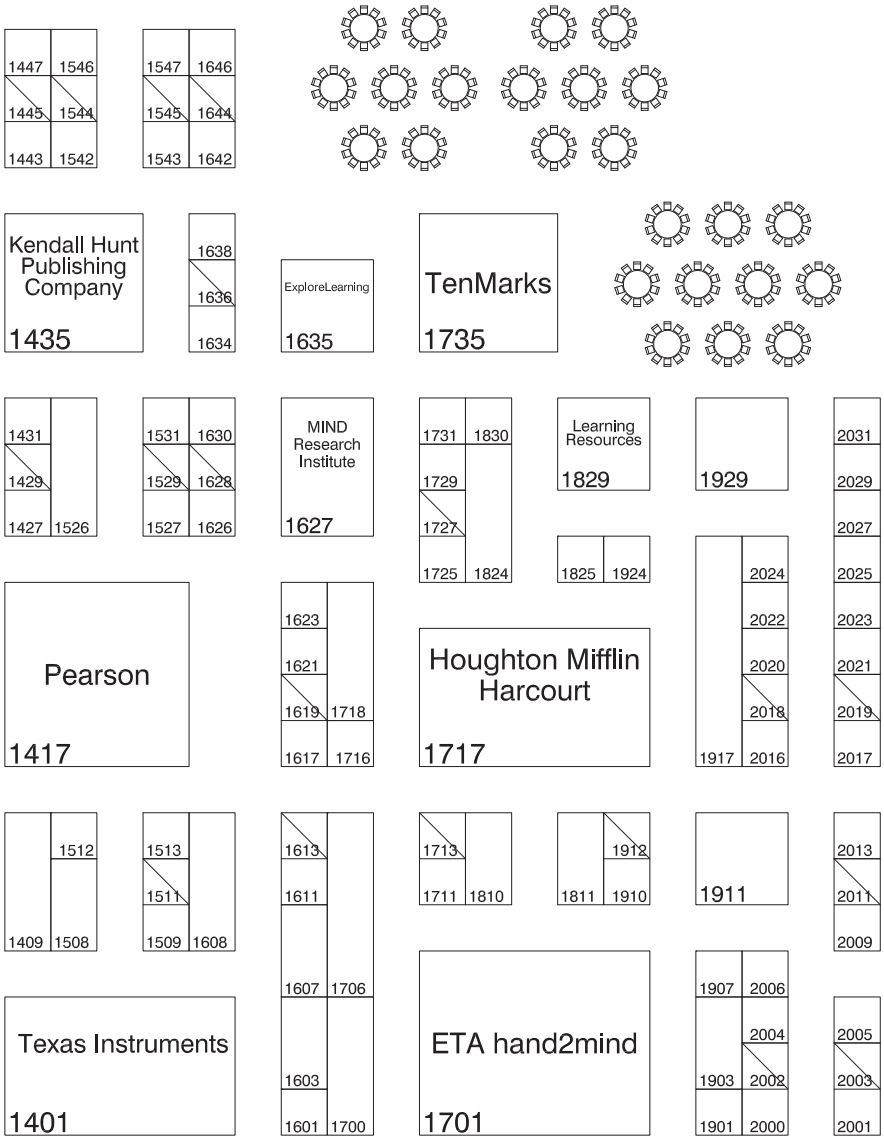
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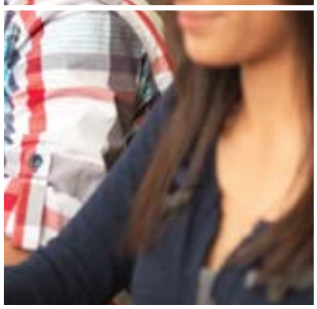

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Carnegie Learning, Inc. is a leading publisher of innovative, research-based math curricula for middle school and high school students. Providing differentiated instruction to schools across the United States, Carnegie Learning is helping students to succeed in math, creating a gateway to graduation and preparing them for the 21st century.

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www.collegeboard.org

The College Board is a mission-driven not-for-profit organization that connects students to college success and opportunity. Founded in 1900, the College Board was created to expand access to higher education. Today, this membership association is made up of over 6,000 of the world's leading educational institutions and is dedicated to promoting excellence and equity in education.

Common Core
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Washington, DC
PH: 202-223-1854
www.commoncore.org

Common Core is the author of the engaging math curriculum (Eureka Math) that recently received a Tier 1 ranking by the Louisiana Department of Education. Eureka Math lessons are recognized as exemplars by Student Achievement Partners and EQuiP. A nonprofit founded in 2007 to help provide all students with a content-rich education, Common Core works with extraordinarily talented teachers and scholars to craft curricula and to deliver professional development based on the Common Core State Standards.

Conceptua Math
Booth: 1109
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www.conceptuamath.com

Conceptua Math for Grades 3–5 is a core curriculum solution that brings the power of digital learning and rich classroom discussions to upper elementary mathematics. The program uses a combination of visual models, story problems, classroom discussion guides, and real-world investigations to create an environment where both students and teachers thrive. This program is an extension of the popular Conceptua Fractions curriculum.

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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.

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www.ecybermission.com

eCYBERMISSION is a free, web-based, STEM competition for students in grades 6–9. Students work in teams to identify a community-based problem and solve it by using either scientific practices or engineering design process. Students compete for state, regional, and national awards. The competition is one of the US Army Educational Outreach Programs (AEOP) and is administered by the National Science Teachers Association (NSTA).

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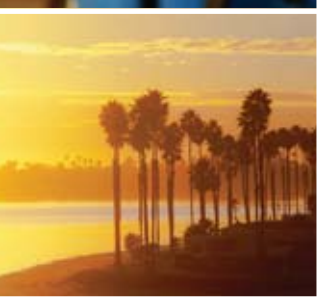

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J

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jumpmath.org

JUMP Math is a nonprofit organization dedicated to closing the math achievement gap in children grades 1 to 8. Through its classroom curriculum (which is being carefully rewritten to adhere to the Common Core State Standards), JUMP helps teachers guide discovery in their students, which leads to deeper problem-solving skills.

K

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L

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www.mathandmovement.com

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www.mathcounts.org

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The Math Learning Center

Booth: 1124

Salem, Oregon
PH: 800-575-8130 800-575-8130
www.mathlearningcenter.org

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

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www.newpathlearning.com

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North American Study Group on Ethnomathematics

Booth: 1242
Estes Park, Colorado
PH: 970-371-0167
nasgem.rpi.edu

Ubiratan D'Ambrosio and others coined ethnomathematics to describe math practices of identifiable cultural groups. More broadly, it can refer to those of larger groups also of small sects. Mathematical practices include symbolic systems, spatial designs, practical construction techniques, algorithms, measurement, ways of reasoning, etc., for which formal representation is possible. The North American Study Group on Ethnomathematics (NASGEm) and Educators of Native American Students (EONAS) work to promote culturally responsive math education practices.

O

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www.uwyo.edu/smtc

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AMP21: Applied Mathematics Practices in the 21st Century is a curriculum designed by Wayne State University to develop and enrich critical student skills in mathematics practices. It includes multi-criteria decision models; linear programming with EXCEL and sensitivity analysis; waiting in line with polynomials; inventory management; ratios, proportions, and rates; and decisions using probabilistic-thinking PD workshops on mathematics practices. One-day introductory and four-day algebraic modeling sessions are available.

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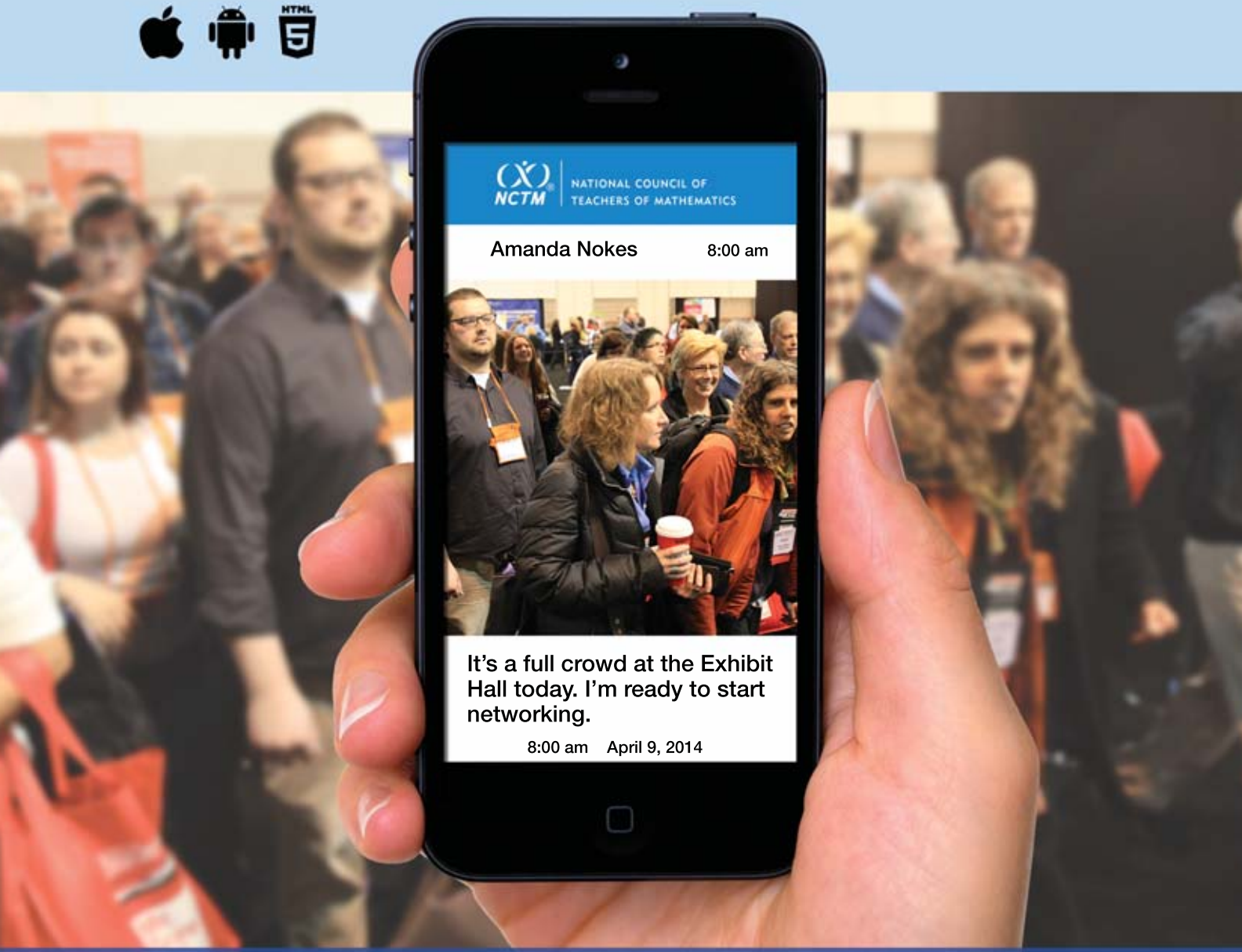

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www.wme-usa.org

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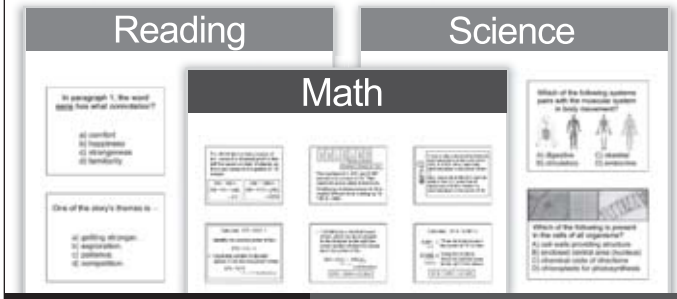

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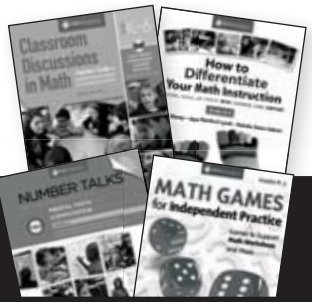

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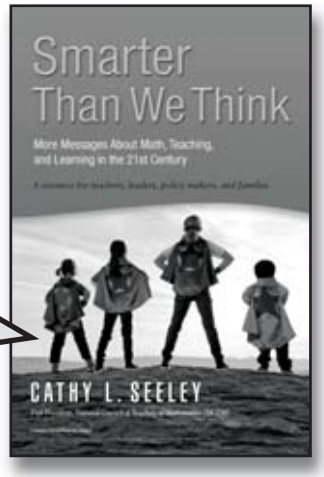

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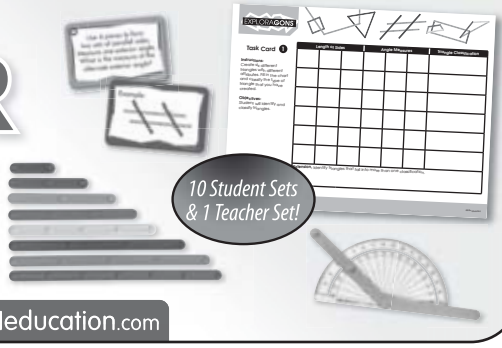

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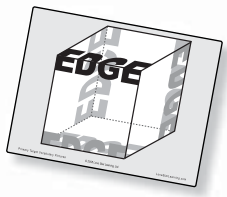

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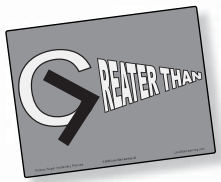

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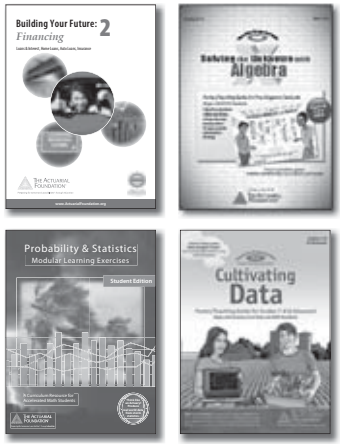

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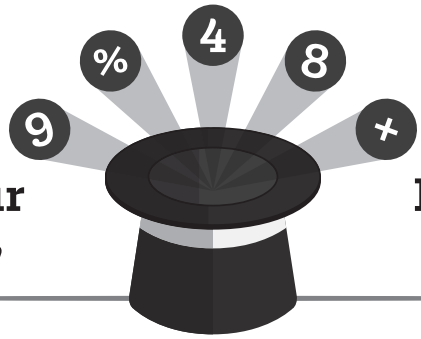

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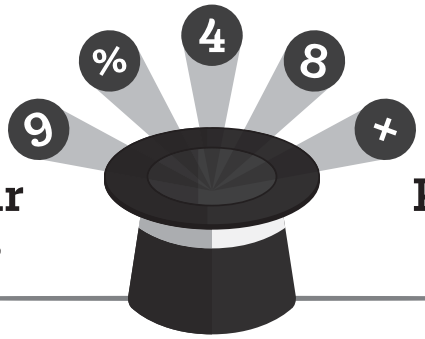

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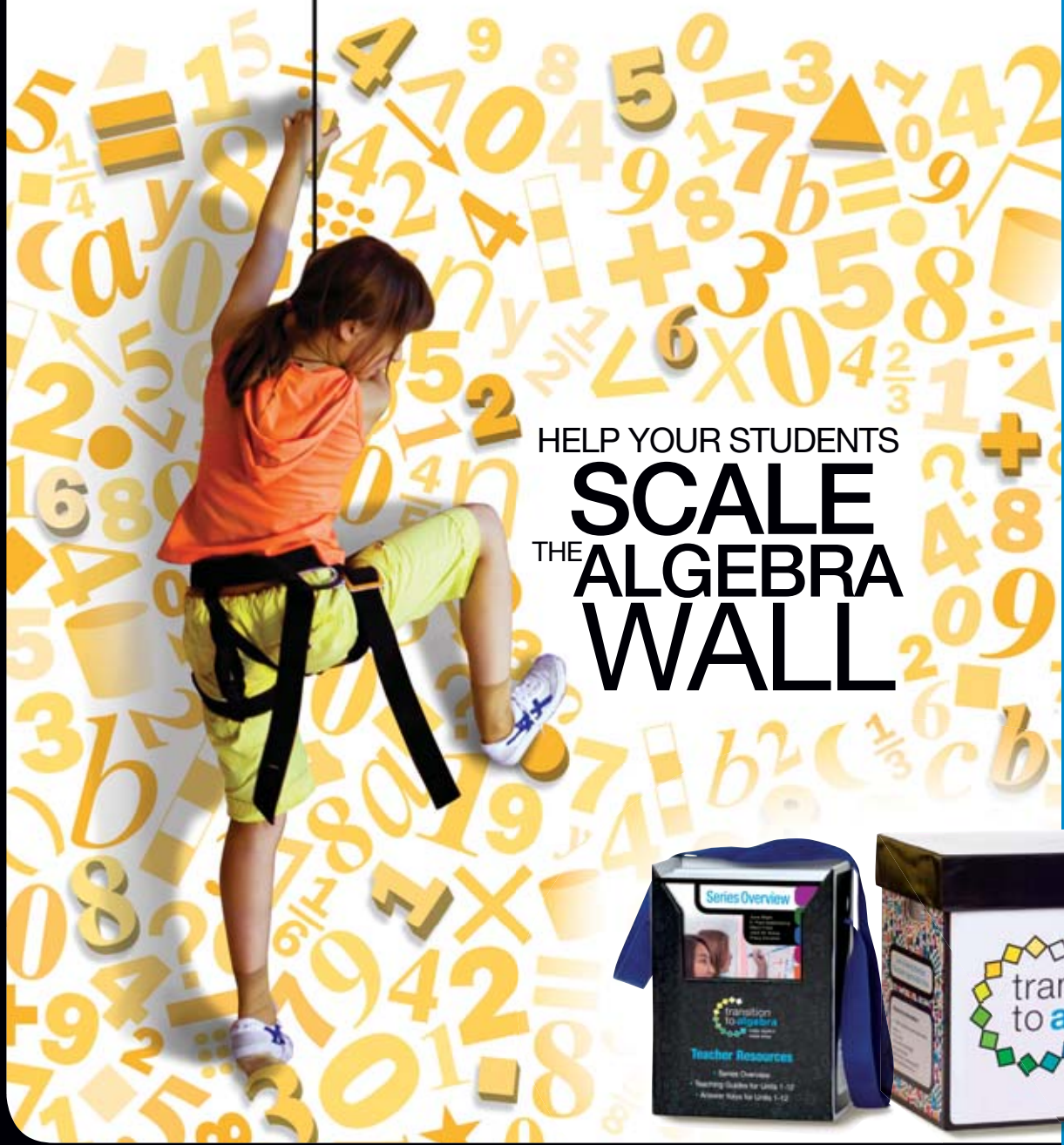

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