

# NCTM

2013

## Regional Conference & Exposition

LAS VEGAS, NEVADA  
OCTOBER 23-25

See Valuable  
**COUPONS**  
beginning  
page 81



NATIONAL COUNCIL OF  
TEACHERS OF MATHEMATICS

PROGRAM BOOK

# You've never seen **Math** like this before



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TI-Nspire™ technology extends seamlessly across a suite of tools, including handhelds, software and apps, helping teachers integrate engaging content into math instruction. Colorful visuals allow students to make meaningful connections between abstract concepts and the real world. The ability to manipulate graphs, charts and geometry constructions increases student engagement and provides them with a deeper understanding of concepts. No matter what technology you're using in the classroom, you can explore and discover relevant mathematics in the everyday world.

Stop by the TI booth #323 or visit [education.ti.com/nspire](http://education.ti.com/nspire).



## NCTM 2013 Regional Conferences & Expositions LAS VEGAS, NV • OCTOBER 23–25

### HOST

Nevada Council of Mathematics

### MEETING FACILITY

All Regional Conference presentations will be held at the Rio All-Suites Hotel & Casino. See pages 68–70 for floor plans.

### REGISTRATION

Wednesday	5:00 p.m.	–	8:00 p.m.
Thursday	7:00 a.m.	–	3:00 p.m.
Friday	7:00 a.m.	–	3:00 p.m.

### EXHIBITS

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

### BOOKSTORE AND MEMBER SHOWCASE

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

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## www.nctm.org/lasvegas

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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 Las Vegas!



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We're excited you came to celebrate the marvels of the world of mathematics at the NCTM 2013 Regional Conference & Exposition in Las Vegas. As the Battle Born State commemorates her 150th anniversary, we would be remiss not to remember that our own Las Vegas is steeped in the many wonders of mathematics both in our local economy as well as our architectural structures such as the Project City Center located on the "The Strip." With the implementation of the Common Core State Standards and with new assessments on the horizon, we have an incredible opportunity to prepare all students for success in college and careers. It is our hope and expectation that your professional learning and network opportunities over these next two days at the conference will

enrich each of you as we all seek to improve our tools for student sense-making of mathematics at any age, for each and every student.

Viva Las Vegas! There's no shortage of world-class dining, shopping, shows, and attractions in our great city so whatever you're in the mood for, you'll find it. Some of the newest attractions in our city, such as the Mob Museum and the Neon Museum, are in downtown Las Vegas. We encourage you to visit them and witness the revitalization that has taken place in this neighborhood. There's also no shortage of things to do on the famous Las Vegas Strip, ranging from fine art galleries and world-famous dancing fountains to a wax museum and thrill rides.



**David Brancamp**  
*Program Committee Chair  
Nevada Department of Education  
Carson City, Nevada*



**Kelly O'Rourke**  
*Volunteer Committee Co-Chair  
Lois Craig Elementary School  
North Las Vegas, Nevada*



**Derek Fialkiewicz**  
*Volunteer Committee Co-Chair  
Cram Middle School  
North Las Vegas, Nevada*

The NCTM 2013 Regional Conference & Exposition officially begins with the Opening Session starting at 5:30 p.m. on Wednesday. Presentations on Thursday and Friday begin at 8:00 a.m. each day and are scheduled concurrently throughout the day.

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

Please remember:

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

## New and Preservice Teachers Workshop

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

Thursday and Friday  
10:30 a.m.–12:00 noon  
Miranda 1/2

## New Members and First Timers' Orientation

New to NCTM or a first-time attendee at a regional conference? Join us to learn how to maximize your membership experience! From journals, online lessons, tools, and activities to networking and career-advancement opportunities, you'll discover all that NCTM has to offer you. Also, first-time attendees will learn how to make the most of their time at the conference.

Thursday and Friday  
7:15 a.m.–7:45 a.m.  
Brasilia 2

## Professional Development

FOCUS OF THE YEAR 2013–2014

This year's Focus of the Year is **Number and Operations: Be Radical and Get Real!**

The conference will highlight this theme as the topic of Thursday's Learn↔Reflect strand, as well as in many other NCTM activities throughout the year. For more information, visit [www.nctm.org/focus](http://www.nctm.org/focus).

## Learn↔Reflect Strand

NUMBER AND OPERATIONS:  
BE RADICAL AND GET REAL!

THURSDAY, OCTOBER 24

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 among a number of sessions exploring the topic, all marked with the symbol **LCR**. Immerse yourself in the topic, and collaborate with leaders and colleagues. We ask participants to reflect on the following questions throughout the Learn↔Reflect strand and then discuss them at the end of the strand, during the Reflection session:

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?

Learn↔Reflect sessions are open for anyone to attend throughout the day. Participants who attend the Kickoff session, at least one Learn↔Reflect session during the day, and the final Reflection session will receive personalized certificates by mail.

Learn↔Reflect Kickoff Session  
Thursday, 9:30 a.m.  
Palma A/B/E/F

Learn↔Reflect Reflection Session  
Thursday, 3:30 p.m.  
Palma C/D/G/H


# Program Information

## 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 where the speaker relates his or her ideas to an audience. The speaker may use audio-visual equipment, technology, and handouts, and he or she may include audience participation. Rooms are set theatre style and vary in size.

**Gallery Workshops** (90 minutes) have rooms set with round tables for hands-on work and additional gallery seating around the perimeter of the room. The gallery participants will receive the print materials and observe the workshop in a fashion similar to that of a classroom observer.

**Exhibitor Workshops** (60 minutes) are set theatre style for at least 70 people. Exhibitors showcase their products and services away from the Exhibit Hall. Look for the symbol  indicating exhibitor workshops in the program book.

## Grade Bands

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

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

## Program Updates

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

## Tips for a Rewarding Regional Conference & Exposition

- Access the NCTM conference app for conference alerts and up-to-the-minute information. Visit [www.nctm.org/confapp](http://www.nctm.org/confapp).
- Access available speaker handouts at [www.nctm.org/plan](http://www.nctm.org/plan).
- Become familiar with the layout of the conference facilities by reviewing the floor plans on pages 68–70.
- Visit the **NCTM Bookstore** for the latest NCTM educational resources and the **Member Showcase** to learn more about how NCTM can help you professionally and pick up free resources.
- Stop by the Information Booth for information on the local area.
- Wear comfortable shoes and clothes, and dress in layers.
- Turn off cell phones during presentations.
- Be safe! Remove your name badge when you leave the conference facilities at the end of the day.

## Registration and Access to Presentations

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

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

## For Your Child's Safety

Due to the size and nature of the NCTM 2013 Regional Conference & Exposition, this event is not an appropriate setting for children under 16 years of age. Children under age 16 will not be permitted in the Exhibit Hall. We appreciate your understanding and cooperation. Children 16 years and over will need to register as nonteaching guests. To register a nonteaching guest, please visit the Registration Area.

## Member Showcase

Make sure to stop by the **NCTM Member Showcase** located in the Exhibit Hall and let us help you learn more about how your NCTM membership can help you be more successful. A membership provides you access to lessons, teaching tips and strategies, research findings, and more. Classroom-ready activities, sample journals, and other materials will be available for you to take back and use immediately in the classroom.

Whether you are a new member, a current member, or thinking of joining, the NCTM Member Showcase is here to support you with your daily challenges!

**Renew your membership or join NCTM for the first time on site** and you will receive a **free** NCTM 2014 Annual Meeting t-shirt! While supplies last.

## Bookstore

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

**Save 25 percent off the list price** on all purchases made at the NCTM Bookstore in the Pavilion Exhibit Hall. Check out NCTM's newest titles and bestsellers and find NCTM gear for yourself and for friends and family at home. Spreading the word about the importance of math has never been easier. Start your wish list today by previewing NCTM's wealth of resources at [www.nctm.org/catalog](http://www.nctm.org/catalog).

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

The NCTM Bookstore is not equipped to handle shipping from the meeting site. The Rio All-Suites Hotel & Casino Business Center can assist you with your shipping needs.

## Information Booth

The NCTM Information Booth will be in the Rio. Friendly staff can answer your questions about Las Vegas. They will also assist you with directions and local information, from transportation and historical sites to shopping and entertainment.

## Networking Lounge

Prime location to meet up with colleagues between presentations! Whether you want to make connections with fellow conference goers, exchange teaching tips, or catch up with friends, you'll find a comfortable spot in the Network Lounge to do so. Download the Conference App at [www.nctm.org/confapp](http://www.nctm.org/confapp) to receive alerts for scheduled networking meet-ups!

## Lost-and-Found

You may retrieve or turn in lost-and-found items at the NCTM Information Booth. Unclaimed items will be turned over to the Rio All-Suites Hotel & Casino Security.

## First-Aid Station

There will be a first-aid station at the Rio during the NCTM conference. If you need medical services while in Las Vegas please check with the hotel concierge for the closest medical facilities.

## Your Opinion Counts!


Thank you for attending the NCTM 2013 Regional Conference & Exposition. In the days following the Regional Conference, you will receive an e-mail asking for an evaluation of your meeting experience. Please take a moment to complete the survey. Your feedback is important to us and will be instrumental in the Regional Conference & Exposition planning process.

# General Information

## Exhibits

Be sure to make time in your schedule to visit the NCTM Exhibit Hall. To give you dedicated time to visit the exhibits, no presentations will take place from 4:00 p.m. to 5:00 p.m. on Thursday. Explore, try out, and purchase products and services to use in your classroom or to help you meet your career goals. You'll also be able to meet the people who produce these products, get fresh ideas, and see demonstrations of how products work. Check out the list of exhibits and a map of the Exhibit Hall on pages 70–76. Please note: Children under age 16 will not be permitted in the Exhibit Hall.

## Exhibitor Workshops

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

## Conference App

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

## Tweet

Check out the @NCTM Twitter feed for conference coverage. Be a part of the conversation by adding the #NCTMVegas hashtag to your tweets and access the conference stream to see what conference attendees are saying about the conference.

## Presentation Handouts

Attendees can access available electronic presentation handouts through the conference app and online planner. Handouts will be available until **December 31, 2013**.

## Online Planner

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

## All Year Long

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



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## HIGHLIGHT

Opening Session (Presentation 1): Game Changers: Rethinking the Way We Teach Math



### CONFERENCE APP

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



### FACEBOOK

Interact with your colleagues!  
[www.nctm.org/facebook](http://www.nctm.org/facebook)



### TWITTER

Use Twitter to follow the Conference!  
#NCTMVegas  
[www.twitter.com/nctm](http://www.twitter.com/nctm)

### REGISTRATION AND NETWORKING LOUNGE HOURS

5:00 p.m. – 8:00 p.m.

### BOOKSTORE AND MEMBER SHOWCASE HOURS

5:00 p.m. – 7:00 p.m.

### FIRE CODE

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.

5:30 P.M.–7:00 P.M.

1

## Game Changers: Rethinking the Way We Teach Math

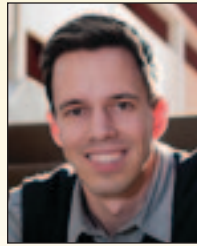
(General Interest) Session

What should effective and innovative math instruction look like, and how can teachers create ideal learning experiences for all students? This discussion, led by NCTM Board member Jon Wray, features the perspectives of four educators whose work is transforming curriculum design and delivery and changing the way students think about mathematics.

Amazon F (Rio)



**Karim Kai Ani**  
Mathalicious,  
Alexandria, Virginia



**Dan Meyer**  
Stanford University,  
Stanford, California



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



**Jon Wray**  
Board of Directors,  
National Council of Teachers of  
Mathematics; Howard County  
Public Schools, Ellicott City,  
Maryland

## Tools, Ideas, and Activities to Make Your Job Easier!

INSPIRING TEACHERS. ENGAGING STUDENTS. BUILDING THE FUTURE.

### Stop by the NCTM Member Showcase On Site

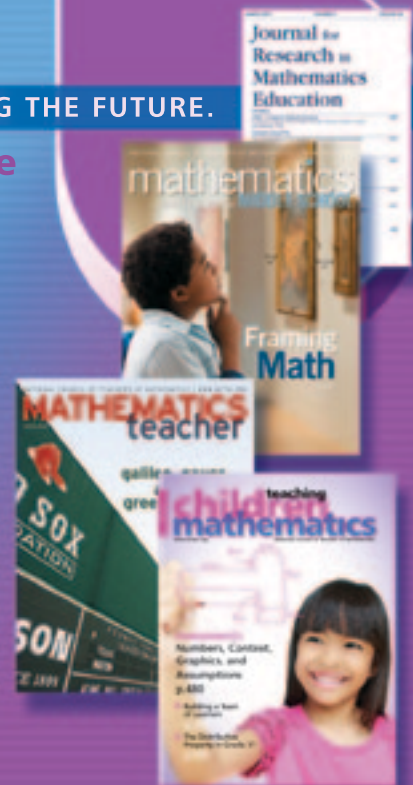
We've got time-saving tips and resources to help you meet the challenges you face on a daily basis. Stop by to pick up...

- Classroom-Ready Activity Sheets
- Sample Journals
- Free Math Resources, Giveaways, and More!

Not a member or want to learn more about membership? Don't worry; we can help you there too! Plus, when you join or renew on site, you'll receive a **free t-shirt**.

### Stop by...

- Wed. 5:00 p.m. – 7:00 p.m.
- Thurs. 7:00 a.m. – 5:00 p.m.
- Fri. 8:00 a.m. – 4:00 p.m.





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## HIGHLIGHTS

- New Members and First Timers' Orientation (Presentation 2)
- Learn↔Reflect Kickoff Session (Presentation 27)
- New and Preservice Teachers Workshop (Presentation 39)
- NCTM President Session (Presentation 64)
- Learn↔Reflect Reflection Session (Presentation 112)

## ICON

## PRESENTATION NUMBERS

 Exhibitor Workshops

14.1, 14.2, 38.1, 38.2, 62.1, 62.2, 74.1, 74.2, 98.1, 98.2, 122.1, 122.2

 Learn↔Reflect

27, 52, 53, 58, 59, 66, 68, 69, 74, 90, 92, 93, 96, 112



## CONFERENCE APP

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



## FACEBOOK

Interact with your colleagues!  
[www.nctm.org/facebook](http://www.nctm.org/facebook)



## TWITTER

Use Twitter to follow the Conference!  
#NCTMVegas  
[www.twitter.com/nctm](http://www.twitter.com/nctm)

## REGISTRATION HOURS

7:00 a.m. – 3:00 p.m.

## EXHIBIT AND NETWORKING LOUNGE HOURS

8:00 a.m. – 5:00 p.m.

## BOOKSTORE AND MEMBER SHOWCASE HOURS

7:00 a.m. – 5:00 p.m.

## FIRE CODE

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7:15 A.M.–7:45 A.M.

## 2 New Members and First Timers' Orientation

(Preservice and In-Service) Session

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

### Trudy Mitchell

Las Vegas Program Committee; bby Publications, San Diego, California

### Peg Cagle

Board of Directors, National Council of Teachers of Mathematics; Vanderbilt University, Nashville, Tennessee

*Brasilia 2 (Rio)*

8:00 A.M.–9:00 A.M.

## 3 Math for All and ELL: Together

(General Interest) Session

What if we taught *all* students as if they were English language learners (ELLs)? How can we reach all students and close gaps? Learn how to ensure an equitable and high-quality mathematics education for all students regardless of culture, language, prior education, and socioeconomic status. The Common Core State Standards for Mathematical Practice will be modeled within the math content.

### Miriam Almaguer Leiva

TODOS: Mathematics for ALL, Charlotte, North Carolina

*Amazon F (Rio)*

## 4 Preparing for CCSSM with Online Simulations

(General Interest) Session

Easily integrate interactive online simulations and labs that are fun, easy to use, and prepare students for the Common Core State Standards for Mathematics (CCSSM) rigorous technology expectations, as well as computer adaptive technological assessments. Also, find out how to use simulations to develop a deep conceptual understanding of challenging concepts through inquiry and exploration.

### Jennifer V. Ranney

Clark County School District, Las Vegas, Nevada

*Amazon D/E (Rio)*

## 5 Tracking CCSSM Using Online Tools

(General Interest) Session

Discover how teachers can track their students' progress on each standard in the Common Core State Standards for Mathematics (CCSSM) using free tools online. Grocery stores, banks, and cancer researchers, to name a few, track data using computers and databases. The online tools empower students and teachers, allowing them to use their independent and class time more effectively.

### Cristina L. Heffernan

Worcester Polytechnic Institute, Massachusetts

### Barbara Delaney

Bellingham Memorial Middle School, Massachusetts

*Brasilia 1/4 (Rio)*

## 6 Common Core Problem Solving: Fun and Easy

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

Learn how to meet Common Core State Standards for problem solving in just minutes per day at no cost to you. Incorporate a system of problem-solving strategies that will move your students from simple to complex, multistep problem solvers. Students will love the real-life applications. You will leave this session armed with ideas and examples.

### Rena Pate

Primary Math Rules, Danville, Illinois

*Palma C/D/G/H (Rio)*

## 7 Brain-Appropriate Practices for the School-Age Child Learning Math

(Pre-K–5) Session

Come explore the role of the brain in learning. We will present brain science discoveries in a fun way by drawing on a balloon, using “braindoughs,” and playing body–mind games so you can experience what brain structures are activated during emotional and learning states.

### Regina R. Lamourelle

Santiago Canyon College, St. Orange, California

### Anne Hauscarriague

Santiago Canyon College, St. Orange, California

### Chantal E. Lamourelle

Long Beach City College, California

*Amazon P/Q (Rio)*

### 8 Culturally Relevant Curriculum to Promote Students' Mathematical Knowledge

(Pre-K–5) Session

We will discuss a study focused on reframing mathematics curricula and pedagogy for struggling students from diverse cultures. Learn how preservice and in-service teachers diagnosed students' misconceptions and developed and used knowledge about students' backgrounds for instructional purposes.

**Sherri Cianca**  
Niagara University, Lewiston, New York

*Brasilia 2 (Rio)*

### 9 Sense Making during Discourse: Moving toward Mathematical Insight and Generalization

(3–5) Session

We will present strategies for moving students through the three stages of effective classroom discourse: explaining reasoning, analyzing other's answers, and bridging to mathematical generalizations. Running a mathematical discussion can be challenging; we will cover specific approaches for accountability and motivation during discourse.

**Claudia M. Bertolone-Smith**  
Douglas County School District, Minden, Nevada

**Teruni Lamberg**  
University of Nevada, Reno

*Jaguar (Rio)*

### 10 Rethinking Professional Development: Focus on Coherence and Rigor of Mathematics

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

We will present a professional development program, Arizona Mathematics Partnership, supported by an National Science Foundation–funded Math and Science Partnership (MSP) project. The program emphasizes coherence and rigor in middle school mathematics for improving the teaching and learning of mathematics. You will have an opportunity to work through various mathematics activities.

**April Strom**  
Scottsdale Community College, Arizona

**Ted Coe**  
Scottsdale Community College, Arizona

**Trey Cox**  
Chandler-Gilbert Community College, Arizona

*Palma A/B/E/F (Rio)*

### 11 Incredible Math Tasks! Developing the Standards for Mathematical Practice

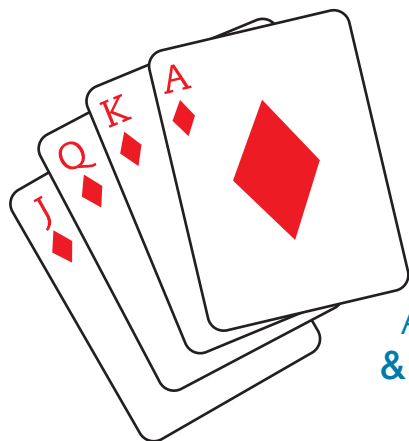
(6–12) Session

Work through and receive a set of excellent, worthwhile math tasks with strategies for developing abstract reasoning and effective classroom discourse. We will focus on the development of all eight Common Core State Standards for Mathematical Practice in this engaging session. Leave with resources that can be used on Monday!

**William Barnes**  
Howard County Public School System, Ellicott City, Maryland

**Jennifer Novak**  
Howard County Public School System, Ellicott City, Maryland

*Conga (Rio)*



## NCTM newbie?

Attend the **New Members & First Timers' Orientation** to learn how to enhance your conference experience and maximize your membership's benefits.

See **page 10** for details.

8:00 A.M.–9:00 A.M.

## 12 Preparing for and Doing Great Mathematics Tasks

(6–12) Session

How do we motivate unmotivated students to engage in high cognitive tasks in mathematics? I will focus on researched motivational principles in learning mathematics along with aligned formative assessment strategies. These tools will motivate and engage students and give them the starting points, confidence, and desire they need to persist in doing such tasks.

**Linda M. Fulmore**  
Education Consultant, Cave Creek, Arizona

*Brasilia 5 (Rio)*

## 13 Lesson Study and Transformation to Equity in High School Instruction

(9–12) Session

Using student work and video from four lesson study cycles, we will chronicle how teachers teach equitably. They use new instructional strategies intentionally and reflect on the student outcomes in their high school mathematics classes. Leave with protocols for enacting lesson study and looking at student work.

**Katherine W. Kanim**  
New Mexico State University, Las Cruces, New Mexico

**Gema Salcedo**  
Gadsden Independent School District, Anthony, New Mexico

*Amazon N/O (Rio)*

## 14 Diagrammatic Reasoning Skills of Preservice Mathematics Teachers: An Investigation

(Higher Education, Research) Session

I will report on a study that explored a relationship between the geometric knowledge of preservice secondary mathematics teachers and their diagrammatic reasoning skills. In the course of this study, preservice mathematics teachers were presented with visual proofs of certain theorems and asked to “reason from the diagram.”

**Margaret Karrass**  
Borough of Manhattan Community College, City University of New York, New York

*Coco A/B (Rio)*

## 14.1 enVisionMATH Common Core: Lesson Structure That Successfully Implements the CCSSM

(Pre-K–5) Exhibitor Workshop

Explore the important qualities of a lesson, such as problem-based learning that engages students in the Common Core practice standards and the accompanying questioning strategies that support teachers, in order to make sense of concepts and develop proficiency.

**Pearson**  
Upper Saddle River, New Jersey

*Tango (Rio)*

## 14.2 Math Digital Learning

(3–8) Exhibitor Workshop

Think Through Math (TTM) provides unprecedented differentiation with a distinctive and powerful blend of highly adaptive instruction and just-in-time support. By providing adaptive lesson pathways that are uniquely personalized, TTM deepens understanding of critical mathematical concepts and improves higher-order thinking and problem-solving skills.

**Think Through Math**  
Pittsburgh, Pennsylvania

*Amazon B/C (Rio)*

8:30 A.M.–10:00 A.M.

## 15 Time In: Tools for Time Skill and Concept Development

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

An abstract measurement that children must be familiar with is time. Readiness activities that begin in kindergarten or preschool are necessary to understand how time is measured and how a clock is read. Explore innovative, classroom-tested, hands-on tools and ideas to develop and anchor such skills and concepts.

**William R. Speer**  
University of Nevada, Las Vegas

*Amazon H (Rio)*

8:30 A.M.–10:00 A.M.

## 16 Integrating the CCSS Mathematical Practices into your Daily Lessons

(Pre-K–5) Gallery Workshop

As teachers, our goal is to help students become mathematically proficient. Part of this objective requires that we teach our students how to reason and problem solve effectively. Are you thinking, “Easier said than done!” This session will help teachers understand how to integrate the Common Core State Standards (CCSS) for Mathematical Practice into their daily lesson planning.

**Amber Evenson**  
McREL, Denver, Colorado

*Lambada (Rio)*

## 17 It’s All in the Process: Strategies for Addressing Reasoning—Elementary

(Pre-K–5) Gallery Workshop

Learn strategies for problem solving to assist students in making sense of problems, decontextualizing and contextualizing, and constructing viable arguments as they formulate their own ideas about the meaning of the problem and predict outcomes.

**Tammy L. Jones**  
TLJ Consulting Group, Lebanon, Tennessee

**Leslie A. Texas**  
Leslie Texas Consulting, Louisville, Kentucky

*Amazon R/S/T (Rio)*

## 18 Letting Students Drive Their Way to Math Literacy

(Pre-K–5) Gallery Workshop

We will model and explain ways to move students from being passengers to drivers on their journey to math literacy using interactive learning and discussion in an elementary classroom. One focus will be on meeting the needs of diverse students in a Title I school.

**Gayle J. Thyrring**  
Stafford County Public Schools, Virginia

**Sara Frazier**  
Stafford County Public Schools, Virginia

**Ruth Harbin Miles**  
Stafford County Public Schools, Virginia

*Miranda 7/8 (Rio)*

## 19 Elapsed Time . . . Why So Much Confusion?

(3–5) Gallery Workshop

Let’s look closely at elapsed time to determine why students have so much difficulty with this concept. We will use traditional methods and analyze errors to conclude that this grade 3–5 concept is anything but elementary! We will compare traditional and reform models, and you will discover how reform models easily translate from concrete to pictorial.

**Barbara Ann Spotts**  
Johnny’s Key, Trevorton, Pennsylvania

*Miranda 5/6 (Rio)*

Thursday



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

8:30 A.M.–10:00 A.M.

## 20 A Dicey Situation

(3–8) Gallery Workshop

Work through a variety of unusual dice activities that effectively build students' understanding of chance.

**Ralph D. Connelly**

Faculty of Education—Brock University, St. Catharines, Canada

*Amazon I/J (Rio)*

## 21 Three Dozen Games with Three Dozen Dice

(3–8) Gallery Workshop

Who knew regular dice could be used to teach and practice operations, order of operations, fractions, place value, patterning, data management and analysis, probability, and more! Come prepared to play with easy-to-find regular spotted dice and learn three dozen ways to motivate and engage your students. Great for differentiation.

**Jane Felling**

Box Cars & One-Eyed Jacks, Edmonton, Canada

*Tropical E/F/G/H (Rio)*

## 22 MathBreaks: Fun Games That Teach

(6–8) Gallery Workshop

Try some math games that engage as well as teach. The criteria are that they are fun enough to entertain, yet educational enough that it is time well spent during class. These activities are chosen to be enticing breaks from your usual routine.

**Nina Chung Otterson**

The Hotchkiss School, Lakeville, Connecticut

*Miranda 1/2 (Rio)*

## 23 Investigations and Activities in Algebra: Get Students Involved!

(6–12) Gallery Workshop

Get involved with hands-on materials that provide practice on algebra ideas: order of operations, exponents, solving linear and quadratic equations, integer arithmetic, multiplying monomials and binomials, and many others. Materials provided.

**Don S. Balka**

Saint Mary's College, Notre Dame, Indiana

*Miranda 3/4 (Rio)*

## 24 Making the Functions Domain Meaningful in Algebra 1

(6–12) Gallery Workshop

Wondering how to help your students make sense of the functions domain? This activity incorporates many of the functions standards in a way that will help your students connect the concept of a function to different representations and introduce your students to the functions explored in algebra 1: linear, quadratic, and exponential.

**Jenny Salls**

Washoe County School District, Reno, Nevada

**Carrie L. Hair**

Washoe County School District, Reno, Nevada

*Amazon K/L/M (Rio)*

## 25 “Multitasking” through CCSS Using Learning Cycles

(6–12) Gallery Workshop

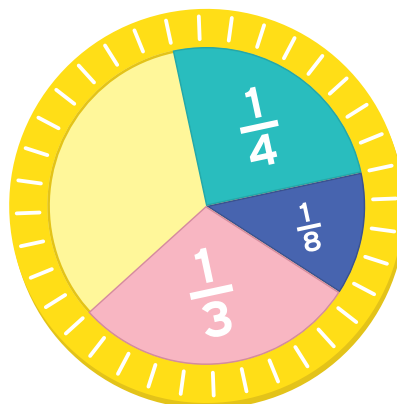
“Multitasking” is an innovative way of thinking about instruction—recognizing that single tasks can address multiple Common Core State Standards (CCSS), while multiple tasks can solidify a single standard. We will examine a sequence of tasks illustrating a multitasking perspective for teaching and learning.

**Scott Hendrickson**

Brigham Young University, Provo, Utah

*Brasilia 3 (Rio)*

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





8:30 A.M.–10:00 A.M.

**26**

## The Many Faces of Differentiation in Algebra

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

Investigate various types of differentiated material, discussing when, why, and how they can be used. Working from scenarios, we'll create material. Some of the differentiation methods discussed include tiered activity sheets, graduated-difficulty problem sets, differentiated questioning, and different contexts or instructional mode. Support and challenge all!

**Allan E. Bellman**  
University of California, Davis

*Tropical A/B/C/D (Rio)*

9:30 A.M.–10:30 A.M.

**27**



## Learn↔Reflect Kickoff: Making Sense of Numbers—More Than Computation

(General Interest) Session

Numbers are foundational to understanding how the world operates. What can we do to help students understand numbers from both contextual and mathematical perspectives? How do we help students understand fractions, percents, rates, and ratios? And what is the role of irrational and complex numbers in engaging students in mathematical reasoning and sense making?

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

*Palma A/B/E/F (Rio)*

**28**

## Making Math More Like Things Students Like: Video Games

(General Interest) Session

Students around the world are playing thousands of hours of video games every 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 of all time 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

*Amazon F (Rio)*

**29**

## Beyond “Why?”: Exploring and Supporting Reasoning with Early Learners

(Pre-K–2) Session

What does reasoning look like for early learners? Children often come to us being able to reason about mathematics. How can we support children's reasoning and ensure that it is not taught out of them? This session will explore reasoning in early learning settings, ways to support this reasoning, and tools and resources to help make connections.

**Denise N. Trakas**  
Washoe County School District, Reno, Nevada

*Brasilia 1/4 (Rio)*

**30**

## Now You See Me: Hiding Assessment as a Differentiated Center

(Pre-K–5) Session

Learn how to take the hiding assessment, finding the “start and change” unknown, and modify it to fully meet the differentiated needs of your students. We will define what the hiding assessment is, how it relates to math instruction, and how it can be differentiated and used as a center activity.

**Lloyd Goldberg**  
Clark County School District, Las Vegas, Nevada

**Lacey Peckham**  
Clark County School District, Las Vegas, Nevada

**Ann Moody**  
Clark County School District, Las Vegas, Nevada

*Amazon D/E (Rio)*

**31**

## Great Tasks to Encourage Your Students to Demonstrate the Practices

(3–5) Session

We will work with three tasks that revolve around interesting problems. The tasks are aligned with specific Common Core standards and practices and have multiple components. They start with a launch, progress to a core task, and include extensions. We will look at sample student work with a focus on number sense, geometry, and algebraic reasoning.

**Connie S. Schrock**  
Emporia State University, Kansas

*Brasilia 5 (Rio)*

**32****Teaching the Common Core to Students Who Struggle in Mathematics**

(3–5) Session

Students with disabilities often struggle in mathematical achievement. We will focus on the use of the concrete–semi-concrete–abstract model of teaching concepts to students who struggle in mathematics. You will apply content to video case studies that focus on the Common Core State Standards for Mathematics (CCSSM).

**Amy Lingo**

University of Louisville, Kentucky

**Karen S. Karp**

University of Louisville, Kentucky

*Conga (Rio)***33****Matching Tasks with Goals for Student Learning**

(6–8) Session

Some mathematics tasks have the potential to engage students in complex forms of thinking and reasoning while others focus on memorization or the use of rules and procedures. Matching the appropriate level of cognitive demand to the appropriate task should be determined by the goal for student learning.

**Pamela H. Dallon**

Alpine School District, American Fork, Utah

*Palma C/D/G/H (Rio)***34****Keeping It Real: Teaching Math through Real-World Topics**

(6–12) Session

How long does it take to burn off the calories in 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 the Common Core State Standards in a fresh, new way: one that fosters a rigorous understanding of math while also challenging students to think about the world more critically.

**Karim Kai Ani**

Mathalicious, Alexandria, Virginia

*Amazon N/O (Rio)***35****Dart Mathematics: Using Paper, Nerfs, Graphing Calculators, and SMART Boards**

(9–12) Session

Discover the math of playing darts with Nerf boards and technology simulations. We will look at the concepts of geometric area for squares, circles, and sectors, as well as geometric probability. We'll use random numbers to locate dart hits on a coordinate plane and calculate experimental and theoretical probability.

**Kathleen Cage Mittag**

Retired, University of Texas at San Antonio

*Brasilia 2 (Rio)***36****Students as Mathematicians: A (CCSS) Modeling Approach**

(9–12, Higher Education) Session

When we expect students to behave as mathematicians, they learn to address meaningful problems while developing the necessary mathematical tools in an environment of creative collaboration, modeling, and communication. I will share favorite modeling activities, helpful tips, and connections to the Common Core State Standards (CCSS).

**Greta Mills**

Hanover High School, New Hampshire

*Amazon P/Q (Rio)***37****Our Force: Focusing on Retention and Combining Efforts**

(Higher Education) Session

Learn about the success of Our Force, an intrusive developmental mathematics advising intervention. Discuss best practices that can be implemented across community college campuses.

**Rosanne B. Benn**

Prince George's Community College, Largo, Maryland

*Jaguar (Rio)*

9:30 A.M.–10:30 A.M.

**38**

## BLAST: On-Demand Common Core Professional Development

(Preservice and In-Service) Session

BLAST (Bringing Learning and Standards Together) provides on-demand, open-source professional development modules that clarify the meaning of the Common Core State Standards for Mathematics (CCSSM). Modules contain information about assessment, instruction, questioning strategies, resources, and opportunities for collaboration.

**Jo Imlay**

Clark County School District, Las Vegas, Nevada

**April Holloway**

Clark County School District, Las Vegas, Nevada

*Coco A/B (Rio)*

**38.1** 

## 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!

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*Amazon B/C (Rio)*

**38.2** 

## Pearson's CMP3: Get Connected!

(6–8) Exhibitor Workshop

Experience CMP3, the newest edition of the inquiry-based Connected Mathematics Project. See new updated Common Core–aligned content and easy-to-use mobile tools. Find out how twenty-first-century social-networking technology connects CMP3 teachers and how students benefit from interactive digital student pages that allow for instant sharing.

**Pearson**

Upper Saddle River, New Jersey

*Tango (Rio)*

10:30 A.M.–12:00 P.M.

**39**

## New and Preservice Teachers Workshop

(General Interest) Session

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

**David Barnes**

National Council of Teachers of Mathematics, Reston, Virginia

*Miranda 1/2 (Rio)*

Thursday



**Cracking the Code of Algebra**

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**40****Building Strong Number Sense with Place Value for Pre-K–2***(Pre-K–2) Gallery Workshop*

Explore how to build strong number sense with place value. Learn how to teach the concepts of place value from the conceptual level through abstraction. Experience literature, music, games, and hands-on manipulatives for this difficult area.

**Kim P. Sutton**  
Arcata, California

*Tropical EIF/GIH (Rio)***41****Envisioning 1, 2, 3 . . .***(Pre-K–2) Gallery Workshop*

When your students think of a number, what do they visualize? Explore techniques to draw students' attention to the importance of being able to mentally picture what a number looks like. This will include subitizing and mental math strategies using tools such as dot cards, beaded measures, and ten-frames.

**Carol A. Matsumoto**  
Retired, Seven Oaks School Division, Winnipeg, Canada

**Angela Bubnowicz**  
Seven Oaks School Division, Winnipeg, Canada

*Miranda 7/8 (Rio)***42****Place, Properties, and Relationships: Getting to Addition and Subtraction***(Pre-K–2) Gallery Workshop*

Help your students add and subtract in second grade by using place value, properties of operations, and the relationship between addition and subtraction. Earlier grades lay the foundation. Experience activities that will engage your students and make your life easier. Get activities ready to use on Monday.

**Cynthia L. Schneider**  
Charles A. Dana Center, Austin, Texas

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

*Amazon K/L/M (Rio)***43****A Hands-On Approach to Algebraic Thinking in the Elementary Classroom***(3–5) Gallery Workshop*

Learn ways to introduce and use algebraic thinking in the grades 3–5 classroom. Join us for hands-on activities to explore concepts. You'll walk away with materials and lesson ideas to develop students' algebraic thinking.

**Beverly J. Ferrucci**  
Keene State College, New Hampshire

**Christina Anderson**  
Keene State College, New Hampshire

*Amazon I/J (Rio)***44****Reading Mathematics***(3–8) Gallery Workshop*

Reading, writing, speaking, and listening in math? Consider how the Common Core State Standards for English Language Arts can help us improve our students' conceptual knowledge of mathematics.

**Amy Weber-Salgo**  
Washoe County School District, Reno, Nevada

*Lambda (Rio)***45****Write Proofs! How the Logic in Games Develops Proof-Like Reasoning***(3–8) Gallery Workshop*

Creating viable arguments (a Common Core State Standards expectation) is challenging for many students with special needs. We will show how we used games and strategy discussions to develop students' critical thinking and oral and written communication. We will also share student work to trace the evolution of their writing, as well as games and lessons.

**Antonia Marie Cameron**  
Metamorphosis Teaching Learning Communities, New York

**Lauren O'Neill**  
New York City Department of Education, Brooklyn

**Karine Kelley**  
New York City Department of Education, Brooklyn

*Brasilia 3 (Rio)*

10:30 A.M.–12:00 P.M.

**46**

## Algebraic Thinking and English Language Learners: Building Background and Success

(6–8) Gallery Workshop

We will share algebraic thinking activities (aligned to the Common Core State Standards for middle school grades) accessible to English language learners (ELLs). These activities are helpful because they include building background and meaningful contexts, as well as many ways to engage students in the mathematics and using language.

**Rose M. Glasser**

Jefferson County Public Schools, Louisville, Kentucky

**Latricia Bronger**

University of Louisville, Kentucky

**Jennifer M. Bay-Williams**

University of Louisville, Kentucky

*Amazon H (Rio)*

**47**

## Integers on the Number Line: A CCSS Approach

(6–8) Gallery Workshop

Come explore adding and subtracting integers on the number line. Learn approaches that are tactile, visual, and sense making and will help you move forward into a Common Core world. Activities are connected to the Common Core State Standards (CCSS) and the Standards for Mathematical Practice.

**Mark Goldstein**

Center for Mathematics and Teaching, Los Angeles, California

*Miranda 5/6 (Rio)*

**48**

## How Can I Solve It? Using Manipulatives for Deeper Understanding

(6–12) Gallery Workshop

Come participate in sample lessons and problems that use algebra tiles to build a deep understanding of working with negatives, simplifying expressions, solving equations, and multiplying and factoring polynomials. Receive ideas and materials that you can use in your own prealgebra and algebra classrooms.

**Staci Shackelford**

Whittier Union High School District, California

*Miranda 3/4 (Rio)*

**49**

## Bowling for Rational Expressions

(9–12) Gallery Workshop

Use tennis balls to bowl for rational expressions. You will also use an umbrella to determine the equation of a parabola and participate in a double-elimination rock–paper–scissors tournament to compare theoretical and experimental probability.

**Claudia D. Maness**

Texarkana Arkansas School District

*Tropical A/B/C/D (Rio)*

**50**

## You've Got To Move It! Transforming Mathematics

(9–12) Gallery Workshop

Let's get moving! Come explore various ways to excite your students to explore transformations in mathematics. Using the Common Core State Standards as a guide, we will collect data, use technology, and of course, *move* to discover properties of functions and create models to predict mathematical behavior.

**Jennifer M. North Morris**

Professional Development Consultant, Tucson, Arizona

*Amazon R/S/T (Rio)*

11:00 A.M.–12:00 P.M.

**51**

## Engaging Students with Children's Literature

(Pre-K–2) Session

Children love stories. Using books to introduce the lesson will grab students' attention and focus them on the day's topic. Students will enjoy exploring patterning, graphing, and addition with literature as the starting point. I will offer lesson plans.

**Patty Morrison**

Fresno Unified School District, California

*Amazon D/E (Rio)*

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Thursday

# Engage Students and Inspire Learning

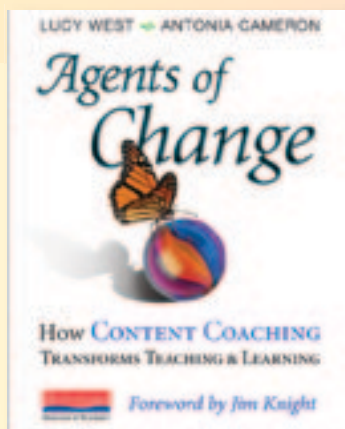
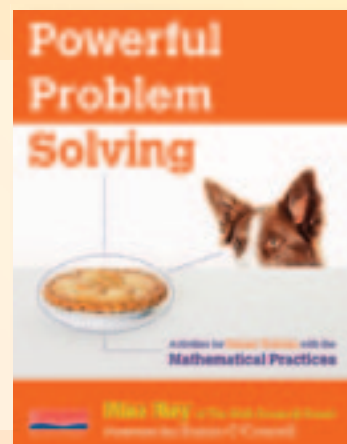
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**52** **In the Beginning!**

(Pre-K–2) Session

A strong numeracy foundation is crucial for mathematics. Just as a house requires a strong foundation to remain erect, students require a deep and solid conceptual understanding in mathematics. Perceptual, figurative, and abstract progressions are significant stages students need to move from a unitary to a composite way of thinking.

**Beth Miracle Meiman**

Kentucky Center for Mathematics, Highland Heights

*Conga (Rio)***53** **Mastering Mental Mathematics: Number Facts and Beyond**

(Pre-K–5) Session

Mental math should be a major goal of all mathematics programs. It is used every day and is essential for high school math. I will use pictorial representations to show how to achieve that goal, beginning with strategies to master basic number facts for all four operations. These strategies are then extended to examples beyond the facts.

**Calvin Irons**

Queensland University of Technology, Brisbane, Australia

*Palma CID/G/H (Rio)***54****Teaching the Tough Topics: Number Sense, Fact Fluency, and Fractions**

(Pre-K–5) Session

Is there a way to teach computational skills that develops number sense, leads to fact fluency, prepares students for word problems, and helps visual learners become abstract thinkers? Join *Grapes of Math* author and Kakooma inventor Greg Tang as we apply model-drawing strategies to arithmetic. You'll wonder why math isn't always taught this way!

**Greg Tang**

Scholastic, New York, New York

*Amazon F (Rio)***55****Math + Technology = Learning**

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

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

**Tammy G. Worcester**

ESSDACK, Hutchinson, Kansas

*Amazon N/O (Rio)***56****Beyond the Textbook: Math Activities That Enrich and Extend**

(3–8) Session

Discover a variety of low- or no-cost math games and activities that will challenge your students and sharpen their math skills. Learn math and logic games to add to your math repertoire and build your classroom game center. Discuss examples of tiered activities and variations that make some well-known games more challenging.

**Daniel M. Rosenberg**

The Pegasus School, Huntington Beach, California

*Jaguar (Rio)***57****Every Day Is Mathematical**


(3–8) Session

We all know that March 14 is Pi Day, and many of us celebrate October 10 as Metric Day. But is it possible to find a mathematical connection to every day of the year? This session will show you how to motivate students and review important numerical concepts in a fun and engaging way. Yes, every day is mathematical!

**Rita H. Barger**

University of Missouri–Kansas City

*Brasilia 2 (Rio)*

**58** **Ratios: Graphing on the Cartesian Coordinate Plane****(6–8) Session**

Fraction as ratio can be represented through graphing. This visual representation makes working with rational numbers accessible to all students. Students will see the relation of ratios to slope, thus making the transition to algebraic thinking seamless.

**Anne M. Collins**

Lesley University, Cambridge, Massachusetts

*Palma A/B/E/F (Rio)***59** **Making the Connection between Mathematics and Forensic Science****(9–12) Session**

Topics from forensic science are ideal for introducing students to real-world applications in mathematics. Data will be used to explore relationships among height, shoe size, and stride length to determine the height of a source of blood spatter at a crime scene and to recreate accident scenes. We'll analyze data using the TI-84 Plus.

**Mary Wagner-Krankel**

St. Mary's University, San Antonio, Texas

*Brasilia 5 (Rio)***60****Using Clickers to Spark the Discussion****(9–12, Higher Education) Session**

Clicker question use in classrooms has grown rapidly, but how does a teacher effectively integrate them into instruction? While clicker questions provide feedback, they are significantly more useful in engaging students in discussion. We will examine in-depth what makes a good question using examples from precalculus and calculus.

**Brandon Milonovich**

Syracuse University, New York

**Helen M. Doerr**

Syracuse University, New York

**Collin Bruce**

Syracuse University, New York

*Brasilia 1/4 (Rio)***61****New Standards for Preparing Future Mathematics Teachers****(Higher Education, Preservice and In-Service) Session**

NCTM has revised the standards for NCATE's program review process. Examine new standards, content addenda, and rubrics for the preparation of secondary, middle-grades, and elementary math specialists. Explore how these changes will affect the review process leading to national recognition of programs by NCATE and CAEP.

**Judy O'Neal**

National Council of Teachers of Mathematics, Reston, Virginia

*Coco A/B (Rio)***62****Growing the Common Core in a Rural State****(Preservice and In-Service) Session**

Montana's size and sparse population calls for a unique, multi-phase approach to supporting rural teachers as they implement the Common Core State Standards content. In this session we describe a blended approach where workshops, online learning modules, mentoring, and public lessons are used in preparing "seed teachers" to enact the Common Core in grades 4–7.

**Jennifer Luebeck**

Montana State University, Bozeman, Montana

**Georgia A. Cobbs**

The University of Montana, Missoula, Montana

*Amazon P/Q (Rio)***62.1** **CCSS Math Practices? Trust CPM's Twenty Years of Writing Experience****(6–12) Exhibitor Workshop**

Try some lessons and take home samples of CPM's Core Connections series (2013). The third generation of CPM blends CCSS content and practice standards in a coherent sequence from 6th grade through algebra 2. Course elements include problem solving, mathematical thinking, problem-based lessons, and mathematical discourse in a student-centered format.

**CPM Educational Program**

Sacramento, California

*Tango (Rio)*



11:00 A.M.–12:00 P.M.

## 62.2

### Addressing CCSS for High School Mathematics

(9–12) Exhibitor Workshop

Learn how the Discovering Mathematics series exemplifies the CCSS. With a strong emphasis on the Standards for Mathematical Practice for algebra and geometry, the series helps bring all students to mastery while making math meaningful for all learners. You'll also get a sneak peek at the new edition of *Discovering Algebra!*

**Kendall Hunt Publishing Company**  
Dubuque, Iowa

*Amazon B/C*

12:30 P.M.–1:30 P.M.

## 63

### Improving Teaching Practice through Mathematics Video Clubs

(General Interest) Session

Teachers and administrators can start their own video-analysis clubs, similar to traditional book clubs, to support and improve professional practice in mathematics. I'll discuss the implications for professional learning communities, department-wide professional development, and new teacher induction programs.

**Patrick Robert McGuire**  
University of Colorado Colorado Springs

*Coco A/B (Rio)*

## 64

### NCTM President Session: It's Raining Rich Problems!

(General Interest) Session

A rich problem is the umbrella for incorporating standards of practice with mathematics content in the elementary grades. Here are some practical suggestions to turn this vision into practice.

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

*Amazon F (Rio)*

## 65

### Building Formative Assessment Practices to Support the Common Core

(Pre-K–2) Session

Understanding of number is crucial to students' development in mathematics. Explore formative assessment as a tool for building the level of number understanding necessary for mathematical proficiency. Focus will be on multiple assessment practices dealing with major concept areas in elementary mathematics.

**David Pugalee**  
University of North Carolina at Charlotte

*Brasilia 2 (Rio)*

## 66



### Build Number Sense with Visual Models and Games

(Pre-K–2) Session

Be more efficient and selective about time devoted to number. Explore number relationships by using visual models, including dot cards, ten-frames, number lines, grids, and hundred charts. Leave with classroom-ready games and strategies, based on the Common Core State Standards, to help you enhance number sense and build confidence in your students.

**Laura L. Choate**  
Fallbrook Union Elementary School District, California

*Amazon D/E (Rio)*

## 67

### Mathematics Specialists: Increasing the Odds for Success

(Pre-K–5) Session

Successful mathematics specialists improve their odds for success by partnering with the principal and supporting teachers' professional growth. Get practical guidance for operating as an elementary mathematics specialist, as suggested by successful specialists who have collaborated on a new NCTM publication.

**Vickie L. Inge**  
University of Virginia, Charlottesville, Virginia

*Conga (Rio)*

**68** 

## Is That a Fact! Developing Fact Fluency

**(3–5) Session**

The Common Core State Standards for Mathematics set fluency expectations for students. I will discuss the meaning of fluency related to multiplication and division facts, look at what the research has revealed about the learning sequence that leads to fluency, and suggest instructional strategies for achieving this goal.

**Linda K. Griffith**

University of Central Arkansas, Conway

*Brasilia 5 (Rio)***69** 

## Meaningful and Motivating Alternative Algorithms

**(3–5) Session**

Do your students struggle with long division, double-digit multiplication, or other Common Core skills? Do they mindlessly go through the motions without understanding procedures? We can help! Come explore meaningful, motivating alternative ways to teach the four operations while building number sense with whole numbers, fractions, and decimals.

**Lisa M. Hall**

Lakeside Elementary School, Richmond, Virginia

**John H. Hinton**

Long Island University Post Campus, Brookville, New York

*Palma A/B/E/F (Rio)***70**

## Math Expedition: A Journey with Project-Based Learning

**(3–8) Session**

The math expedition provides students with the opportunity to solve real-world problems in their homes, schools, or communities. Students grow in their ability to collaborate and communicate mathematically while incorporating the Common Core State Standards for Mathematical Practice. Implement project-based learning in your math curriculum tomorrow—handouts provided!

**Susan Vohrer**

Anne Arundel County Public Schools, Annapolis, Maryland

*Brasilia 1/4 (Rio)***71**

## Multiple Models for Fraction Division: Higher-Level Thinking in CCSS

**(6–8) Session**

The Common Core State Standards (CCSS) require students to be able to interpret and create meaning for fraction division. Students need multiple models to flexibly make sense of the division of fractions and their resulting quotients. We will explore different models and how students can create and internalize understanding of the interpretations.

**Robert M. Afonso**

Boston University, Massachusetts

**Laura Kyser-Callis**

Boston University, Massachusetts

*Amazon P/Q (Rio)***72**

## STEM: Silos or a Farm?

**(6–12) Session**

Common Core, Standards for Mathematical Practice, Literacy in Science, Next Generation Science Standards. How can anyone do it all? We will focus on how science, technology, engineering, and math (STEM) can be used to frame a unified vision of purpose (the farm) while still maintaining the integrity of the individual content areas (silos).

**Diana L. Suddreth**

Utah State Office of Education, Salt Lake City

*Amazon N/O (Rio)***73**

## Exploring Flipped Classrooms

**(9–12, Higher Education) Session**

Learn about the flipped classroom. Explore findings from recent research conducted in two lower-level undergraduate mathematics content courses, and discuss classroom and online implications for implementing a flipped classroom.

**Shannon M. Guerrero**

Northern Arizona University, Flagstaff

**Chris Lamb**

Northern Arizona University, Flagstaff

**Melissa Beal**

Northern Arizona University, Flagstaff

*Jaguar (Rio)*

12:30 P.M.–1:30 P.M.


**74**   
**Removing Barriers to Reasoning  
and Sense Making**

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

In the grades 9–12 curriculum there are a number of common “shortcuts” that misrepresent mathematics. We will discuss how they limit students’ ability to reason and make sense of mathematical concepts and how teachers can avoid using these shortcuts and help their students build conceptual understanding.

**Daniel R. Ilaria**  
West Chester University, Pennsylvania

*Palma C/D/G/H (Rio)*

**74.1**   
**Teaching Look 4s: Tools and  
Resources Focused on the  
Mathematical Practices**

(General Interest) Exhibitor Workshop

The eight Common Core math practices provide purpose for change and require shifts in classroom practice. Instructional shifts are an opportunity to focus on observable teaching skills. This session provides an overview of coaching resources to support teachers, as you talk about specific skills that develop desired academic behaviors in students.

**Pearson**  
Washington, D.C.

*Tango (Rio)*

**74.2**   
**Digital World of Mathematics  
and Beyond!**

(General Interest) Exhibitor Workshop

Come experience McGraw-Hill’s brand new technology for any device. Learn new ways to engage students and incorporate the Common Core State Standards with ease. You will receive your own code to use back in the classroom.

**McGraw-Hill**  
Columbus, Ohio

*Amazon B/C*

12:30 P.M.–2:00 P.M.

**75**  
**A Tool to Develop Students’  
Number Sense**

(Pre-K–2) Gallery Workshop

Are you frustrated with students’ lack of number sense? A tool from the Netherlands can help. Explore using a rekenrek (aka MathRack) to help facilitate students’ development of number sense.

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

*Brasilia 3 (Rio)*

**76**  
**Supporting Understanding of  
Number and Operations with  
Graphic Organizers**

(Pre-K–2) Gallery Workshop

Graphic organizers help all students explore relationships between addition and subtraction. Explore student understanding of equality, numbers, fact families, number combinations, missing addends, and word problems. You will receive the graphic organizers and lesson ideas.

**Allison J. Davis**  
Chandler Unified School District, Arizona

**Socorro H. Tapetillo**  
Chandler Unified School District, Arizona

*Amazon R/S/T (Rio)*

**77**  
**Developing Fact Fluency**

(Pre-K–5) Session


We will highlight research findings related to math fact fluency and provide you with ideas for classroom tasks that can support students’ development of fluency in basic math facts.

**Sam Strother**  
Developing Mathematical Thinking: Center for School Improvement at BSU, Boise, Idaho

**Sarah Appleton**  
Caldwell School District, Idaho

*Tropical EIF/G/H (Rio)*

Thursday



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

12:30 P.M.–2:00 P.M.

## 78 Pattern and Place-Value Connections

(Pre-K–5) Gallery Workshop

Explore engaging activities and instructional strategies using pattern to help students in grades 1–3 develop place-value understanding and number sense. Take home ready-to-implement ideas to guide your students to conceptual understanding. See aha moments happen in your classroom.

**Susan Kunze**  
Bishop Unified School District, California

**Michelle Kubiak**  
Bishop Unified School District, California

*Tropical A/B/C/D (Rio)*

## 79 Make It Real—Make It Stick!

(3–5) Gallery Workshop

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

**Dacia Jones**  
Durham Public Schools, North Carolina

*Miranda 7/8 (Rio)*

## 80 Understanding Operations with Fractions through Hands-On Activities

(3–8) Gallery Workshop

Experience activities that show you how to use manipulatives and questioning to teach fractions, equivalent fractions, and operations with fractions. Division of fractions will finally make sense! Activities are based on a progression through the three stages of learning—concrete, pictorial, and abstract—and focus on students making sense of the math.

**Barbara Schallau**  
East Side Union High School District, San Jose, California

*Miranda 5/6 (Rio)*

## 81 Mathematics and Rational Art

(6–8) Gallery Workshop

We will discuss various artists and how their artwork can be used to reinforce instruction on converting between fractions, decimals, and percents. I will give brief backgrounds on the artists, and you will create your own artwork while finding the percentage of your work painted various colors. We'll use water-based paints.

**David W. Thomas**  
Jefferson County Public Schools, Louisville, Kentucky

*Amazon I/J (Rio)*

## 82 Technology + Choice = Success

(6–8) Gallery Workshop

Do you long to hear your students say these three little words, “I love math”? Come discover how hands-on lessons infused with technology and choice have transformed our students into highly motivated, engaged, successful learners. Highlighted technology includes TI technology, math in movie clips, SMART Board, Google Earth, and Voki avatars.

**Melissa Jackson**  
Deptford Township Schools, New Jersey

**Meredith A. Howell**  
Deptford Township Schools, New Jersey

*Miranda 3/4 (Rio)*

## 83 Rethinking Geometry: Why Transformations?

(6–12) Gallery Workshop

The high school Common Core State Standards for Mathematics call for students to understand congruence and similarity in terms of transformations. Why is this important to do? How does this change the content we teach in geometry, including how we think about proofs? We will work several examples chosen to help us think about answers to these questions.

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

*Amazon H (Rio)*

12:30 P.M.–2:00 P.M.

**84**

## Are Your Questions Meaningful? The Influence of CCSSM and Technology

(9–12) Gallery Workshop

Technology can make many school mathematics questions seem pointless. Should we ban technology? Instead, how might we change our questions? Explore problems motivated by the Common Core State Standards for Mathematics (CCSSM) that build understanding with technology: teach factoring with CAS? Explore infinite series? Use recursive and iterative processes? Bring your tech tools, and explore with us!

**Roger Day**

Glencoe-McGraw Hill School Mathematics Group, Normal, Illinois

**Tami S. Martin**

Illinois State University, Normal

*Lambada (Rio)*

**85**

## Be More Than a One Hit Wonder in Your Classroom

(9–12) Gallery Workshop

Have you ever done a great activity in your classroom only to realize later that it was just a fun activity rather than a learning experience? A great activity by itself is a one hit wonder. This workshop will help you learn how to implement a sequence of rich tasks to maximize your students' reasoning and sense-making skills.

**Janet M. Sutorius**

Mathematics Vision Project, Salt Lake City, Utah

**Travis Lemon**

Mathematics Vision Project, Salt Lake City, Utah

*Amazon K/L/M (Rio)*

**86**

## The Perfect Math Marriage: Edmodo and the Mathroom Teacher

(Preservice and In-Service) Gallery Workshop

Edmodo is a secure, social learning platform for teachers, students, schools, and districts. It provides a safe and easy way for your class to connect and collaborate, share content, and access homework, grades, assessments, and notices. Edmodo allows teachers to share content easily, and free apps for iPhones and Androids makes Edmodo mobile!

**Shonda K. Brooks**

St. Landry Parish School System, Opelousas, Louisiana

*Miranda 1/2 (Rio)*

2:00 P.M.–3:00 P.M.

**87**

## Coaching Tools to Support CCSS Content and Mathematical Practices

(General Interest) Session

A dual focus on the content and mathematical practices of the Common Core State Standards (CCSS) leads to mathematically proficient students. We will share tools (resources, templates, and activities) for mathematics coaches, leaders, and teachers that can support professional development efforts to ensure all students become mathematically proficient.

**Jennifer M. Bay-Williams**

University of Louisville, Kentucky

**Maggie B. McGatha**

University of Louisville, Kentucky

**Beth Kobett**

Stevenson University, Baltimore, Maryland

*Jaguar (Rio)*

**88**

## Implementing the Mathematical Practices: Does Your Classroom Look Like This?

(General Interest) Session

Let's examine sample lessons and examples of student work and discourse, all of which demonstrate students' use of the Common Core State Standards for Mathematical Practice in action. We'll discuss recommendations and share participant input on the challenge, "How do I support and expand the mathematical behaviors of my students?"

**Henry S. Kepner**

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

*Amazon F (Rio)*

**89**

## Math Misconceptions . . . Does "Altogether" Mean Add?

(Pre-K–2) Session

Come and discuss common math misconceptions and why they may exist. You will leave this session with activities to help correct some of the most common errors that have been found in K–grade 2 math lessons. These activities will lead to a deeper understanding of math for the student, as well as the teacher.

**Jean Bingham**

Central Elementary, Barbourville, Kentucky

*Amazon N/O (Rio)*

Thursday

**90** 

## Are You Ready for Some Number Interventions?

(Pre-K–5) Session

Are you looking for strategies to develop flexible student thinkers with an understanding of number? Explore three effective components promoting an awareness of number that we've adopted as we transitioned to the Common Core State Standards for Mathematics. We will share home–school connections, school-based interventions, and after-school program ideas.

**Kelly Krownapple**

Howard County Public School System, Columbia, Maryland

**Karen Simcock**

Howard County Public School System, Columbia, Maryland

*Palma A/B/E/F (Rio)*

**91**

## Using Discourse to Increase Number Sense

(Pre-K–5) Session

Learn strategies to develop and encourage mathematical discourse and increase students' number sense, reasoning, and problem-solving skills.

**Lisa J. Drakulich**

Clark County School District, Las Vegas, Nevada

**Bethany Farmer**

Clark County School District, Las Vegas, Nevada

**Ruby Mora**

Clark County School District, Las Vegas, Nevada

*Palma C/D/G/H (Rio)*

**92** 

## 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 more effective ways to differentiate instruction and efficiently implement the Common Core State Standards. Generous handout includes engaging activities to enhance mathematical reasoning as students improve their number sense and computation skills.

**Leigh Childs**

San Diego County Office of Education, California

*Amazon D/E (Rio)*

**93** 

## Examining the Fanatical Fraction Focus in the Common Core

(3–8) Session

There is little doubt that implementing the Common Core State Standards for Mathematics in grades 3–8 poses a great challenge to all. This challenge can be viewed as an opportunity to improve mathematics instruction. I will demonstrate strategies, activities, and technology that can enhance the teaching and learning of number sense and rational numbers.

**Eric Milou**

Rowan University, Glassboro, New Jersey

*Brasilia 1/4 (Rio)*

**94**

## With CCSSM, Mathematics Coaches Need Professional Development, Too!

(3–8) Session

Mathematics coaches need professional development to increase their mathematics content and coaching knowledge to increase their effectiveness. Engage in hands-on activities in Common Core State Standards for Mathematics (CCSSM) number and operations content that teachers have difficulty teaching and in activities to increase your own coaching knowledge.

**John Sutton**

RMC Research Corporation, Denver, Colorado

**Arlene P. Mitchell**

RMC Research Corporation, Denver, Colorado

**Clare E. Heidema**

RMC Research Corporation, Denver, Colorado

*Amazon P/Q (Rio)*

**95**

## Challenging All Students, Even Gifted Ones, without Going Crazy

(6–12) Session

Learn how to create manageable enrichment activities you can use to support and challenge all students' mathematical learning. Walk away with strategies for developing engaging activities that push not only gifted but all students into higher-order thinking while supporting both the Common Core State Standards and reasoning and sense making.

**Carrie L. Hair**

Washoe County School District, Reno, Nevada

**Jenny Salls**

Washoe County School District, Reno, Nevada

*Conga (Rio)*

2:00 P.M.–3:00 P.M.

**96** 

## Mathematical Modeling with Fantasy Football

(6–12) Session

Fantasy football provides a rich source of data for mathematical reasoning. We'll explore how to develop a mathematical model for drafting and maintaining an expert-beating fantasy football team using the concepts of addition, division, mean, median, standard deviation, and more! Attention will also be given to testing the model to improve it.

**Benjamin Galluzzo**

Shippensburg University of Pennsylvania

**Dave I. Kennedy**

Shippensburg University of Pennsylvania

*Brasilia 5 (Rio)*

**97**

## Residuals in the Common Core

(9–12) Session

In the Common Core State Standards, students are expected to analyze residuals. This topic is new to the curriculum in many states and can be implemented at any level in grades 9–12. We will explore ways to teach residuals with both a hands-on activity and with technology.

**Sharon Taylor**

Georgia Southern University, Statesboro

**Kathleen Cage Mittag**

Retired, University of Texas at San Antonio

*Brasilia 2 (Rio)*

**98**

## Wait, I Don't Have to Come to Class? Awesome.

(Higher Education) Session

Why do we make students sit through topics they are already familiar with? Learn a different method for college algebra: students attend class only for topics they are not proficient with. This approach allows those who need extra help to get it. Explore details of the class and results, as well as suggestions for implementation.

**Paula R. Stickles**

Millikin University, Decatur, Illinois

*Coco A/B (Rio)*

**98.1** 

## Making Elementary Math Journals Fold-tastic!

(Pre-K–5) Exhibitor Workshop

Cut, fold, and more, in this hands-on workshop as you transform basic classroom materials into Notebook Foldables that are sure to make your student math journals fold-tastic. Depart with a mini-composition book made on site that is filled with immediately usable ideas.

**Dinah-Might Adventures**

San Antonio, Texas

*Amazon B/C (Rio)*

**98.2** 

## Walk the Number Line for Research-Based Results

(Pre-K–5) Exhibitor Workshop

Elementary learners need a number line for powerful concepts like multiples, regrouping, making change, elapsed time, rounding, factoring, and fractions! You will be amazed by Kim Sutton's unique strategies for K–5 and ready for action on Monday morning using the most important visual!

**Creative Mathematics**

Arcata, California

*Tango (Rio)*

2:30 P.M.–4:00 P.M.

**99**

## Developing Mathematical Concepts and Oral Language Strategies for Primary Students

(Pre-K–2) Gallery Workshop

Learn research-based strategies to help students in the primary grades develop oral language skills and build conceptual understanding. Experience hands-on manipulative activities and games. Children's literature will illustrate how math concepts may be applied in real-world situations.

**Susie Whisnant**

Math Teachers Press, Minneapolis, Minnesota

**Caryl Pierson**

Math Teachers Press, Minneapolis, Minnesota

*Amazon R/S/T (Rio)*

Thursday

## 100

### Get Your Math Tool Box Together for Pre-K–2

(Pre-K–2) Gallery Workshop

Join us for this make-and-take math tool box session!

**Kacey Edgington**  
WCSD, Reno, Nevada

**Jane Bantz**  
WCSD, Reno, Nevada

*Amazon H (Rio)*

## 101

### Tackling the Twelve Problem Situations in Common Core Table 1

(Pre-K–2) Gallery Workshop

We're expected to give students a variety of problem situations for adding and subtracting. Explore the meaning of each situation through thematic examples, a variety of hands-on and reasoning solution strategies, and creating a set of situation problems. You'll be ready to teach K.OA-1 and -2, 1.OA-1, and 2.OA-1.

**Patty E. Smith**  
Educational Resources Group, Charleston, South Carolina

*Tropical AIB/C/D (Rio)*

## 102

### Which One of These Things Doesn't Belong?

(Pre-K–2) Gallery Workshop

Explore methods of teaching classifying. Focal points will be use of the question "Which one of these things doesn't belong?" as well as children's books and manipulatives (insects, people, etc.) to teach use of objects' traits to categorize items, number sense, critical-thinking skills, and set concepts.

**Michael D. Hardy**  
Saint Xavier University, Chicago, Illinois

*Amazon I/J (Rio)*

## 103

### It's the Praxis That Counts

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

Explore the importance of using the same practices in professional development as we expect teachers to use in their own classrooms. We will model a session using the Common Core State Standards for Mathematical Practice to increase teachers' understanding of the complexities of number sense and of effective ways to develop and support it in students.

**Mary Hynes-Berry**  
Erikson Institute, Chicago, Illinois

**Rebeca Itzkowich**  
Erikson Institute, Chicago, Illinois

*Lambda (Rio)*

## 104

### Concept Games for Common Core Mathematical Practices

(3–5) Gallery Workshop

Games are tremendous motivators for students. Participants in this session will be actively involved in concept games that make student thinking visible.

**Ted H. Hull**  
LCM: Leadership, Coaching, Mathematics, Pflugerville, Texas

**Don S. Balka**  
Saint Mary's College, Notre Dame, Indiana

**Ruth Harbin Miles**  
Consultant/Trainer at LCM: Leadership, Coaching, Mathematics, Washington, D.C.

*Miranda 3/4 (Rio)*

## 105

### The Power of Context: Making Sense of Multiplication and Division

(3–5) Gallery Workshop

How can context help students understand multiplication and division more deeply? Explore the power of context by examining a variety of multiplication and division story problems and connecting the context to computational strategies that support conceptual understanding of operations.

**Andria Disney**  
University of Montana, Missoula

*Miranda 1/2 (Rio)*



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2:30 P.M.–4:00 P.M.

## 106

### Exceptional, Free Online Resources for Teaching Probability

(3–8) Gallery Workshop

NCTM's Illuminations (<http://illuminations.nctm.org>) has a treasure trove of excellent resources for the middle grades, including lesson plans, online activities, and math strategy games. Immerse yourself in Illuminations lessons, play an online math strategy game, and discuss how all these resources can be used in your classroom to get students excited about probability!

**David Barnes**

National Council of Teachers of Mathematics, Reston, Virginia

*Amazon K/L/M (Rio)*

## 107

### Fifty Types of Pi: An Irrational Exploration

(3–8) Gallery Workshop

Explore a hands-on approach to introducing your students to the concept of pi as an irrational number, part of circle equations, and a ratio. Experience a unique and wide variety of activities to bring pi alive in your classroom, including the celebration of Pi Day (March 14). Handouts, materials, and ready-to-use activities provided.

**Brianne Tuzzolino**

AD Henderson University School, Boca Raton, Florida

**Cecil Phibbs**

AD Henderson University School, Boca Raton, Florida

*Miranda 7/8 (Rio)*

## 108

### Potpourri of Integer Activities

(3–8) Gallery Workshop

Make the Common Core State Standards come alive in your classroom. Integers are frequently a challenge to students and teachers. The games and activities that I present are designed to make integers fun and easily understood. Join us to walk the plank, play integer golf, and a loop game and have lots of fun with many other hands-on activities.

**Steve Tiller**

Cashion Public Schools, Oklahoma

**Jan Sands**

KESAM Inc., Oklahoma City, Oklahoma

*Miranda 5/6 (Rio)*

## 109

### Using Investigations and Manipulatives in Geometry

(6–12) Gallery Workshop

Use manipulatives such as hinged mirrors, rubber bands, and patty paper, as well as investigations, to develop geometric concepts. The concepts include similarity and triangle congruence, transformations, central angles and polygons, area and heights of triangles. The activities incorporate the Common Core State Standards for Mathematical Practice.

**Glenda A. Wilkins**

Retired, San Bernardino City USD, California

*Brasilia 3 (Rio)*

## 110

### Developing Combinatorial Reasoning with Engaging Hands-On Activities

(9–12) Gallery Workshop

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

**James R. Matthews**

Siena College, Loudonville, New York

**Jenny K. Tsankova**

Roger Williams University, Bristol, Rhode Island

*Tropical E/F/G/H (Rio)*

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3:30 P.M.–4:30 P.M.

## 111

### Applying Interactive Technology to Mathematics

(General Interest) Session

Learn about practical and realistic ways to integrate interactive technologies into mathematics, including interactive whiteboards, mobile applications, software, and free Web-based programs. Technologies content will focus primarily on number operations, algebraic thinking, and algebra.

**Shannon Michelle Stone**

Jefferson County Public Schools, Louisville, Kentucky

**Leah L. Dix**

Jefferson County Public Schools, Louisville, Kentucky

*Amazon F (Rio)*

**112** **Learn↔Reflect Reflection Session**

(General Interest) Session

This culmination session of the Learn↔Reflect strand will be a facilitated discussion of the four reflection questions. Those who attend the Kickoff, at least one Learn↔Reflect session, and the Reflection session will earn a personalized certificate.

**Denise Trakas**

Washoe County School District, K–6 Mathematics Program  
Coordinator, Reno, Nevada

**Amy Salgo**

Northwest RPDP Washoe County School District, Reno,  
Nevada

**Carol Long**

Southern Nevada Regional Professional Development  
Program, North Las Vegas

**Jenny Salls**

Washoe County School District, Reno, Nevada

*Palma C/D/G/H (Rio)***113****Vital Signs for Helping Students Succeed in a Competitive World**

(General Interest) Session

The M in STEM, mathematics, drives the other three components: science, technology, and engineering. Student “vital signs” can alert leaders to examine which policies provide the greatest impact. I will provide STEM ideas critical to helping states move aggressively to raise expectations and helping students succeed in a competitive world.

**Suzanne Mitchell**

National Council of Supervisors of Mathematics, Denver,  
Colorado

*Brasilia 1/4 (Rio)***114****Workshops? Institutes? Conferences? . . . Why Professional Learning Communities?**

(General Interest) Session

The most common professional development models are workshops, institutes, and conferences. However, a growing interest in more innovative models, such as the professional learning community, has arisen. Come learn how a professional learning community model we instituted in ten middle schools has found success in ushering in change.

**Trey Cox**

Chandler-Gilbert Community College, Arizona

*Coco A/B (Rio)***115****Improving Number Fluency: A Minute to Win It**

(Pre-K–2) Session

Games are one of the most effective ways for children to practice number fluency. See how games engage children in a playful yet serious math practice, eliminating the need for tedious pencil-and-paper drills. Explore ideas for assessment using a game format.

**Brenda E. Rubacha**

Sequoia Pathway Academy, Maricopa, Arizona

*Amazon P/Q (Rio)***116****Ignite All Tiers in an Inclusive Intervention Model**

(3–5) Session

We increase the likelihood of meeting the needs of all students in a classroom by using frameworks for learning: three-part lessons that use a multisensory approach integrated with instructional technology and correlated with the Common Core State Standards. Our daily objective is to engage, explore, assemble, and challenge. You will receive lessons to adapt.

**Rudy V. Neufeld**

Thames Valley Schools, London, Canada

**Maria Dufek**

Clark County, Las Vegas, Nevada

*Brasilia 5 (Rio)*

Access the  
**Conference App**  
for program updates,  
conference networking,  
and exhibit info.

## 117

### Reasoning about Fractions: Using Number Lines to Understand Fraction Comparison

(3–8) Session

Explore the big ideas of fraction comparison and quantitative reasoning as well as students' common misconceptions about these topics and related Common Core State Standards recommendations. Using the number line model and strategies to help build quantitative reasoning, we will focus on helping students reason about and compare fractions.

**Nadine Bezuk**

San Diego State University, California

*Palma A/B/E/F (Rio)*

## 118

### Middle School Investigation Using NCTM Illuminations

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

Get involved in some of the investigation activities posted on NCTM's Illuminations website (and a few other favorite investigations). Try out Barbie Bungee, Equations of Attack, and more! I'll include connections to the new Common Core State Standards and Standards for Mathematical Practice.

**Katie A. Hendrickson**

Athens Middle School, Ohio

*Brasilia 2 (Rio)*

## 119

### Creating Cramer's Rule: An Investigation into Solving Systems of Equations

(6–12) Session

Discuss a lesson developed to introduce Cramer's rule for solving a system of linear equations with two variables to eighth-grade algebra students. We will share both teachers' and students' experiences. We will also discuss the importance of making connections among mathematical concepts and ideas for students' learning of mathematics.

**Gorjana Popovic**

Illinois Institute of Technology, Chicago

**Adrienne Pavek**

Conrady Junior High, Hickory Hills, Illinois

**Bernadette Skobel**

Conrady Junior High, Hickory Hills, Illinois

*Amazon N/O (Rio)*

## 120

### Data, Regression, and Stats, Oh My!

(9–12) Session

Learn ideas to help you integrate statistics across the curriculum. To go along with NCTM's focus on statistics, experienced AP Statistics teachers will share lessons and activities and clear up some misconceptions in statistics.

**Todd J. Sikora**

Adlai E. Stevenson High School, Lincolnshire, Illinois

*Conga (Rio)*

## 121

### Learning Mathematical Concepts through Context with Pictures

(9–12) Session

Now our graphing calculators have pictures. How do we use them in effective ways that promote concepts through context? We will use bridges, fountains, Ferris wheels, and other images to explore function graphs, transformations, parametric relations, conics, regression, area under a curve and more!

**John J. Diehl**

Retired, Hinsdale Central High School, Illinois

*Amazon D/E (Rio)*

## 122

### Improving Preservice Elementary Teacher Candidates' Mathematics Lesson Proposals

(Higher Education) Session

New elementary teacher candidates often propose lessons that center on memorizing definitions, formulas, and algorithms. But NCATE/NCTM Standards for initial preparation of math teachers call for a "commitment to learning with understanding." See examples of candidates' work as they grow in teaching for understanding.

**Linda A. Arnold**

Tusculum College, Knoxville, Tennessee

*Jaguar (Rio)*

3:30 P.M.–4:30 P.M.

**122.1 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 in K–12.

**IXL Learning**  
San Mateo, California

Tango (Rio)

**122.2 ew**

**HP Prime: Redefining the Graphing Calculator Experience**

(9–12) Exhibitor Workshop

Discover HP Prime, HP's newest graphing calculator, featuring: • A color, multi-touch display with slim design and li-Ion battery • An App-based interface to explore math and solve problems • Advanced Graphing app: graphs virtually any equation in x and y • Dynamic Geometry • Spreadsheets • Exam mode • HP Classroom Network wireless module

**Hewlett-Packard**  
Fort Collins, Colorado

Amazon B/C

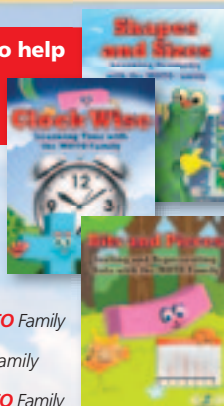
**NCTM Introduces MOTO for K–2**  
**A New RtI Digital Series for Kindergarten through Second Grade**



Use the books' active learning tasks to help students who struggle to understand and retain mathematical concepts

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- ▲ *One Foot, Two Feet: Measuring with the MOTO Family*
- ▲ *Everybody Counts: Learning to Count with the MOTO Family*
- ▲ *It All Adds Up! Learning to Add and Subtract with the MOTO Family*
- ▲ *Bits and Pieces: Sorting and Representing Data with the MOTO Family*

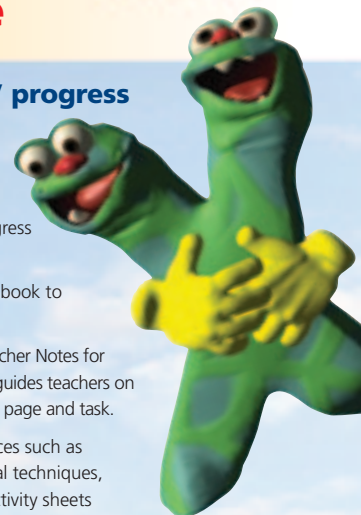


Books are available on iTunes, Google Play, and Amazon. Also available in Web-based format on the NCTM website.

**Track your students' progress on Teacher Connect**

The *Teacher Connect* website allows teachers to:

- ▲ Track and comment on the progress of each student
- ▲ Correlate each chapter of every book to the CCSSM
- ▲ Buy a Teacher Code to access Teacher Notes for each page of every book, which guides teachers on how to get the most out of each page and task.
- ▲ Access extensive teacher resources such as problem extensions, instructional techniques, and downloadable classroom activity sheets
- ▲ Be able to employ effective RtI instructional strategies and tasks



Teacher Connect is available exclusively through NCTM's website: [www.nctm.org/moto](http://www.nctm.org/moto)



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## HIGHLIGHTS

- New Members and First Timers' Orientation (Presentation 123)
- New and Preservice Teachers Workshop (Presentation 160)
- NCTM Board Hot Topic: Embracing the Common Core (Presentation 172)

## ICON

## PRESENTATION NUMBERS

 Exhibitor Workshops	135.1, 135.2, 159.1, 159.2, 183.1, 183.2, 195.1, 195.2, 219.1

Friday



## CONFERENCE APP

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



## FACEBOOK

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Use Twitter to follow the Conference!  
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## REGISTRATION HOURS

7:00 a.m. – 3:00 p.m.

## EXHIBIT AND NETWORKING LOUNGE HOURS

8:00 a.m. – 4:00 p.m.

## BOOKSTORE AND MEMBER SHOWCASE HOURS

8:00 a.m. – 4:00 p.m.

## FIRE CODE

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

7:15 A.M.–7:45 A.M.

## 123 New Members and First Timers' Orientation

(Preservice and In-Service) Session

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

### Trudy Mitchell

Las Vegas Program Committee; bby Publications, San Diego, California

### Peg Cagle

Board of Directors, National Council of Teachers of Mathematics; Vanderbilt University, Nashville, Tennessee

*Brasilia 2 (Rio)*

8:00 A.M.–9:00 A.M.

## 124 PRIME2: Mathematics Education Leadership Imperatives

(General Interest) Session

Principles and Indicators for Mathematics Education Leadership (PRIME2) provides clear, research-based guidance on how to raise achievement in mathematics for every student and effectively implement the Common Core State Standards for Mathematics (CCSSM) in every classroom. This agenda includes systemic change in curriculum, instruction, assessment, and professional culture aligned with CCSSM.

### Lynn Columba

Lehigh University, Bethlehem, Pennsylvania

### Kit Norris

Educational Consultant, Boston, Massachusetts

### Suzanne Mitchell

National Council of Supervisors of Mathematics, Denver, Colorado

*Amazon F (Rio)*

125

## Reengagement: A Close Look at One Formative Assessment Strategy

(General Interest) Session

Reengagement is grounded in the effective and intentional use of student thinking to improve learning. In this session, teachers will explore this strategy and experience a reengagement task. While it is not a familiar strategy it has been inspiring for teachers as they discover that a new stance on assessment can support and advance learning.

### Valerie Lynn Mills

Oakland Schools, Waterford, Michigan

*Brasilia 2 (Rio)*

126

## The Illustrative Mathematics Project

(General Interest) Session

Illustrative Mathematics was started as a way to bring meaning and clarity to the Common Core State Standards by illustrating them with mathematical tasks. We will look at current progress as well as long-term goals and plans for this project.

### Kristin Umland

University of New Mexico, Albuquerque

### Ellen Whitesides

Institute for Mathematics and Education, University of Arizona, Tucson

*Palma C/D/G/H (Rio)*

127

## Problem Solving: Don't Remove the Thinking!

(Pre-K–5) Session

Primary-age children often rely on the grab-numbers-and-compute strategy to solve story problems, which does not promote mathematical understanding. We'll share instructional strategies teachers have employed to turn K–grade 2 students from problem performers into problem solvers.

### Tara D. Zuspan

Lincoln Public Schools, Nebraska

### Susie K. Katt

Lincoln Public Schools, Nebraska

*Amazon P/Q (Rio)*

Friday

Shop and save  
**25 percent** at  
the NCTM  
Bookstore!

## 128 Standards vs. Conceptual Understanding

(Pre-K–5) Session

Explore how to address the Common Core State Standards for Mathematical Practice and the content standards, as well as how to balance them with the conceptual understanding that needs to take place developmentally.

**Craig Willmore**

McGraw-Hill Education, New York City, New York

*Brasilia 5 (Rio)*

## 129 Real-World Reasoning in the Middle School Mathematics Classroom

(3–8) Session

The Common Core State Standards call for students to reason and construct arguments. We'll show you research on teachers' implementation of real-world reasoning and problem solving in the middle school classroom. We'll also present authentic applications to classroom practice and sample lesson plans in the areas of graphing and data analysis.

**Diana L. Moss**

University of Nevada, Reno

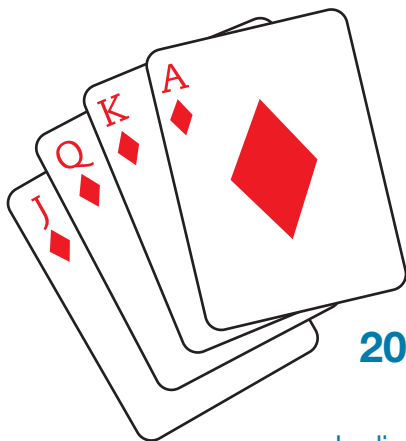
**Heather Glynn Crawford-Ferre**

University of Nevada, Reno

**Stephanie Vega**

University of Nevada, Reno

*Palma AIBIEF (Rio)*



## Join us at the 2014 Regional Conferences

Indianapolis, Indiana • October 29–31  
Richmond, Virginia • November 12–14  
Houston, Texas • November 19–21

## 130 Using Powerful Openers and Closers to Facilitate Effective Discourse

(3–8) Session

Research shows that well-designed openers and closers lead to higher levels of student engagement and achievement. Learn how they can also be a platform for addressing the Common Core State Standards for Mathematical Practice. Leave this session with a variety of opener and closer styles that incorporate manipulatives, good questioning, and technology that you can use immediately.

**Meagan B. Susi**

Educational Consultant, Middletown, Connecticut

**Robyn Silbey**

Robyn Silbey Professional Development, Gaithersburg, Maryland

*Amazon N/O (Rio)*

## 131 Use Engaging Problem-Solving Tasks and Math Projects

(6–8) Session

Encourage students to collaborate using a variety of math problems and tasks. Learn how to get students to listen to each other and share their understanding of math problems. We'll share ideas about how to ask good questions to promote critical thinking and to motivate students. We'll include application problems and creative projects that are relevant to middle school students.

**Edna F. Bazik**

National Louis University, Chicago, Illinois

**Elizabeth Masslich**

Cedarburg High School, Wisconsin

*Amazon D/E (Rio)*

### 132

## Reclaiming Lost Ground: Research-Based Interventions for Underprepared Algebra Students

(6–12) 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 succeed.

**Diane J. Briars**

Diane J. Briars, Pittsburgh, Pennsylvania

**James Lynn**

University of Illinois at Chicago

*Brasilia 1/4 (Rio)*

### 133

## The Mathematics of Angry Birds

(9–12) Session

Angry Birds is an engaging game, but also a rich source of mathematical learning. We will use it to explore initial velocities, angles, parametric equations, tangents, and regression. We will be using screen captures and video tracking to actually plot and model paths.

**Ismael Zamora**

Hinsdale South High School, Darien, Illinois

**John J. Diehl**

Retired, Hinsdale Central High School, Illinois

*Conga (Rio)*

### 134

## Resequencing Calculus: An Early Multivariate Approach

(9–12, Higher Education) Session

The Resequencing Calculus project is ordering topics so that content needed for upper-level STEM courses is moved to the first two courses of the three-course sequence. Discuss piloting efforts, next steps, and transfer and AP credit challenges. (Support provided by NSF grants DUE 1225566 and 0836676.)

**Joe A. Stickles**

Millikin University, Decatur, Illinois

*Coco A/B (Rio)*

### 135

## Preparing for Your Institution's NCATE Program Review

(Higher Education, Preservice and In-Service) Session

Get the latest information on preparing mathematics education program reports for NCATE accreditation based on the 2012 NCTM NCATE Standards. Learn how to navigate the NCATE/CAEP program review process and prepare required documents under the new standards. Explore new report templates, new program standards, and learn how to avoid mistakes.

**Judy O'Neal**

National Council of Teachers of Mathematics, Reston, Virginia

*Jaguar (Rio)*

### 135.1

## Meeting the Practice Standards Using Models from Math in Context®

(3–8) Exhibitor Workshop

The CCSSM Practice Standards ask students to “model with mathematics.” Students are expected to identify quantities and map relationships using math tools including diagrams, two-way tables, and formulas. Participants will explore models from MiC that can be used to analyze situations and draw conclusions, and will receive a free Number Tools® workbook.

**Encyclopaedia Britannica**

Chicago, Illinois

*Amazon B/C (Rio)*

### 135.2

## Pearson High School Math and the Common Core

(9–12) Exhibitor Workshop

Learn how this blended print and digital curriculum (grades 9–12) 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

*Tango (Rio)*



### 136

## Reaching All Learners in the Mathematics Classroom

(Pre-K–2) Gallery Workshop

How do you reach every student during a math lesson? When do you use direct instruction? Partners or small groups? This interactive workshop will include hands-on activities that have been used in the classroom, with suggestions for differentiated instruction. All activities incorporate children's books.

**Donna J. Long**

Houghton Mifflin Harcourt, Boston, Massachusetts

*Lambda (Rio)*

### 137

## Shuffling into Math

(Pre-K–2) Gallery Workshop

Play card, dice, and domino games that help your primary students achieve success in numeration, operations, place value, patterning, and graphing. Explore excellent take-home ideas, game boards, student samples, and more to help you teach the Common Core State Standards. These activities are great for regular, English as a second language, Title I, and after-school programs.

**Allison Riddle**

Davis Unified School District, Salt Lake City, Utah

*Tropical EIF/GIH (Rio)*

### 138

## Teaching and Reinforcing Fact Fluency through Games

(Pre-K–2) Gallery Workshop

Learn about fact fluency, grade-level expectations, and how to build fact fluency with students. The ability to recall basic math facts fluently is necessary for students to attain higher-order math skills. Practice by playing many games built to create and reinforce fact fluency.

**Misha Quarles**

Dysart Unified School District, Surprise, Arizona

*Amazon H (Rio)*

### 139

## Math Matters: Games, Puzzles, and Diversions to Stimulate Reasoning

(Pre-K–5) Gallery Workshop

Bring excitement to your classroom and stimulate your students to think using games designed to integrate problem solving, analyzing, and basic skill development. In this hands-on session, you will play games you can use in your classroom tomorrow. All these experiences will develop your students' inductive reasoning in number, geometry, and probability.

**John Hinton**

Long Island University (CW Post) Campus, Brookville, New York

**Lisa M. Hall**

Lakeside Elementary School, Richmond, Virginia

*Miranda 5/6 (Rio)*

### 140

## Waves of Change

(Pre-K–5) Gallery Workshop

New instructional practices require teachers to respond to a broader range of academic needs. How can we possibly reach all our students when they are academically diverse, have special needs, and are English language learners? One answer? Use fun math games! You will receive several ready-to-use games.

**MaryAlice Hatchett**

Texas Council of Teachers of Mathematics, Austin

*Miranda 7/8 (Rio)*

### 141

## Games That Make You Think

(3–5) Gallery Workshop

Play newly developed games that take it to the next level—targeting grades 3–5 Common Core State Standards for Number and Operations—and foster the use of the Standards for Mathematical Practice. Learn to differentiate instruction to support and challenge the full range of learners within the framework of a game and the follow-up class discussion. Walk away with ideas and game pieces.

**Gail E. Gerdemann**

Oregon State University, Corvallis

**Kathleen Barta**

Teacher to Teacher Publications, Lake Oswego, Oregon

*Amazon R/S/T (Rio)*

**142****NASA: Distance–Rate–Time Mathematics in Air Traffic Control**

(6–8) Gallery Workshop

NASA Smart Skies: predict and solve real-world air traffic conflicts using a hands-on experiment, web-based simulator, print-based instructional materials, and mobile app. Students apply problem-solving and proportional-reasoning skills as they explore distance–rate–time relationships at the algebra and prealgebra levels. Materials are free online.

**Rebecca Green**

NASA, Moffett Field, California

**Gregory Condon**

NASA, Moffett Field, California

*Amazon I/J (Rio)***143****Solving Ratio Problems Using Methods Specified in CCSSM**

(6–8) Gallery Workshop

The Common Core State Standards for Mathematics (CCSSM) 6.RP.3 requires students to reason about ratio problems using methods such as “tables of equivalent ratios, tape diagrams, double number line diagrams, or equations.” How can these tools be used to promote students’ understanding of how to solve ratio problems? We will explore this question while solving ratio problems using these methods.

**Karen R. Heinz**

Rowan University, Glassboro, New Jersey

*Miranda 1/2 (Rio)***144****Common Core: Same Standards, New Name—Or Is It?**

(6–12) Gallery Workshop

This time it’s different. Come learn how teaching the standards has changed. We will discuss how to include the Common Core State Standards for Mathematical Practice in your content to improve student achievement.

**Jodi Cunningham**

Valley High School, Las Vegas, Nevada

*Amazon K/L/M (Rio)***145****NASA’s Supernova Mathematics**

(6–12) Gallery Workshop

Find out what a flip book and a supernova have in common. Then, apply your knowledge to solve a supernova mystery. Take activities back to your classroom to help teach your students about proportional reasoning, linear models, measurement, and interdisciplinary connections. Free NASA materials!

**Janet Lynne Moore**

NASA/Illinois State University, Bloomington

*Brasilia 3 (Rio)***146****Tools for Addressing the Common Core Mathematical Practices**

(6–12) Gallery Workshop

The Common Core State Standards for Mathematical Practice emphasize conceptual thinking and mathematical reasoning. In other words, math activity sheets simply will not prepare students for success. I will provide you with experience using practical, classroom-ready tools that can be used at all grade levels to make the shift from repetition to reasoning.

**John Brunsting**

Silver Strong and Associates, Ho Ho Kus, New Jersey

*Miranda 3/4 (Rio)***147****Improving Secondary Mathematics Teacher Preparation: The MTE-Partnership**

(Preservice and In-Service) Gallery Workshop

The Common Core State Standards (CCSS) provide a common vision for secondary mathematics across the states, opening up new possibilities for collaboration. The Mathematics Teacher Education (MTE) Partnership is a national partnership of universities and K–12 districts with the goal of ensuring that secondary mathematics teacher candidates are prepared to meet the requirements of CCSS.

**W. Gary Martin**

Auburn University, Alabama

**Marilyn E. Strutchens**

Auburn University, Alabama

*Tropical A/B/C/D (Rio)*

8:30 A.M.–10:00 A.M.

## 148 Access to Real Math for Students with Severe Disabilities

(General Interest) Session

Access to grade-level standards for students with severe disabilities raised expectations. How have higher expectations increased achievement and changed the delivery of math instruction? As an experienced educator, I will show you how proven math methodologies plus accessibility help educators get serious about math instruction for students with the most to gain.

**Karen Ross-Brown**  
AbleNet, Inc., Roseville, Minnesota

*Coco A/B (Rio)*

9:30 A.M.–10:30 A.M.

## 149 Inquiry-Based Learning

(General Interest) Session

What does inquiry-based learning (IBL) look like? How do teachers implement it? Answers to these questions, including specific examples, will be discussed. I'll also share a model for IBL within mathematics courses for elementary school teachers and anecdotal evidence for using this model to increase conceptual understanding.

**Jessica Audet de la Cruz**  
Assumption College, Worcester, Massachusetts

*Amazon N/O (Rio)*

## 150 Mathematical Language: The Core for Mastering Concepts

(Pre-K–2) Session

Supporting children to develop deep understanding of mathematical concepts from all strands requires us to appropriately model the language of mathematics. Use language as the bridge for support with stories, concrete resources, and pictorial representations. Explore language stages to facilitate meaning making for mathematical concepts.

**Rosemary Reuille Irons**  
Queensland University of Technology, Brisbane, Australia

*Conga (Rio)*

## 151 Transferring Literacy Teaching to Mathematics Teaching

(Pre-K–2) Session

Are you a pre-K–grade 2 teacher who loves teaching reading but hasn't fallen in love with teaching math? We will connect four qualities of literacy teaching to mathematics teaching.

**Jane Bantz**  
WCSD, Reno, Nevada

**Kacey Edgington**  
WCSD, Reno, Nevada

*Brasilia 2 (Rio)*

## 152 From STEM to STEAM: Arts and Creativity in Mathematics

(Pre-K–5) Session

Young students need to be excited about math. They need to be fully engaged in creating math models, making up math stories, doodling and sketching, and using multiple means of expression to think about math. Let's work together to get the arts—artistic expression and creative thinking—into our everyday math instruction.

**Stuart J. Murphy**  
Independent Author, Boston, Massachusetts

*Amazon F (Rio)*

## 153 Aligning Assessments to CCSSM

(3–5) Session

I will focus on formative and summative assessments that align to the Common Core State Standards for Mathematics (CCSSM) for grades 3–5. Dig deeper into how to assess the depth and breadth of the standards to determine mastery of a skill.

**Tracy Gruber**  
Nevada Department of Education, Carson City

*Palma A/B/E/F (Rio)*



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Check us out on  
Twitter and Facebook.

Friday

## 154 Eyes-On Math: A Visual Approach to Teaching Math Concepts

(3–8) Session

We will explore strategies for creating rich mathematical conversations around pictures designed to embody math concepts. You will see the potential of using pictures to evoke rich mathematical thinking for all students in your classroom. I will share examples to show the power of the strategy and show how to create visuals.

**Amy L. Lin**

Halton District School Board, Burlington, Canada

*Brasilia 1/4 (Rio)*

## 155 Making Memories in the Math Classroom

(3–8) Session

I will present math magic activities in a spirit of play, emphasizing mathematics's beauty and fun. Learn hands-on activities for immediate classroom use to enhance the NCTM Standards and motivate students to become active learners. Come prepared to have fun.

**Charles Sonenshein**

Wright State University, Dayton, Ohio

*Brasilia 5 (Rio)*

## 156 Using Tasks to Enrich Learning for Gifted Students

(6–12) Session

Gifted students learn new mathematical concepts quickly, often faster than their fellow classmates. Come see how a mathematical task can be used to deepen the learning of gifted students and keep them engaged while other students have time to master the concepts.

**Sharon Christensen**

Alpine School District, American Fork, Utah

**Valerie Chambers**

Alpine School District, American Fork, Utah

*Amazon P/Q (Rio)*

## 157 The Effective Use of Dynamic Geometry Software

(9–12) Session

A group of grades 9–12 geometry teachers learned to use dynamic geometry (DG) software effectively in their classrooms after participating in professional development sponsored by an NSF-funded project. We will discuss examples of how they engaged students in experimenting and forming, testing, and proving conjectures with DG tools.

**Zhonghong Jiang**

Texas State University, San Marcos

*Amazon D/E (Rio)*

## 158 Transitioning to the Common Core State Standards

(9–12) Session

I will focus on the Common Core State Standards for Mathematics, their coherence across grade levels, and rigor in concepts, procedure, and application. I will also examine the Common Core changes to classroom content instruction, evaluate consequences of the process, apply the Standards for Mathematical Practice, and discuss high school conceptual themes.

**Robert D. Cherry**

Professional Development Alliance, Joliet, Illinois

*Palma C/D/G/H (Rio)*

## 159 Barcodes and Matrices: What They Have in Common

(9–12, Higher Education) Session

Explore barcode reading, an application 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, North Branch, Michigan

*Jaguar (Rio)*

9:30 A.M.–10:30 A.M.

## 159.1 Do Story Problems Scare the Daylights Out of Your Students?

(3–8) Exhibitor Workshop

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

**Borenson and Associates, Inc**  
Allentown, Pennsylvania

*Amazon B/C*

## 159.2 Making Secondary Math Journals Fold-tastic!

(6–12) Exhibitor Workshop

Cut, fold, and more, in this hands-on workshop as you transform basic classroom materials into Notebook Foldables that are sure to make your student math journals fold-tastic. Depart with a mini-composition book made on site that is filled with immediately usable ideas.

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

*Tango (Rio)*

10:30 A.M.–12:00 P.M.

## 160 New and Preservice Teachers Workshop

(General Interest) Session

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

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

*Miranda 1/2 (Rio)*

## 161 Diving to Deeper Levels of Math Talk in K–2 Classrooms

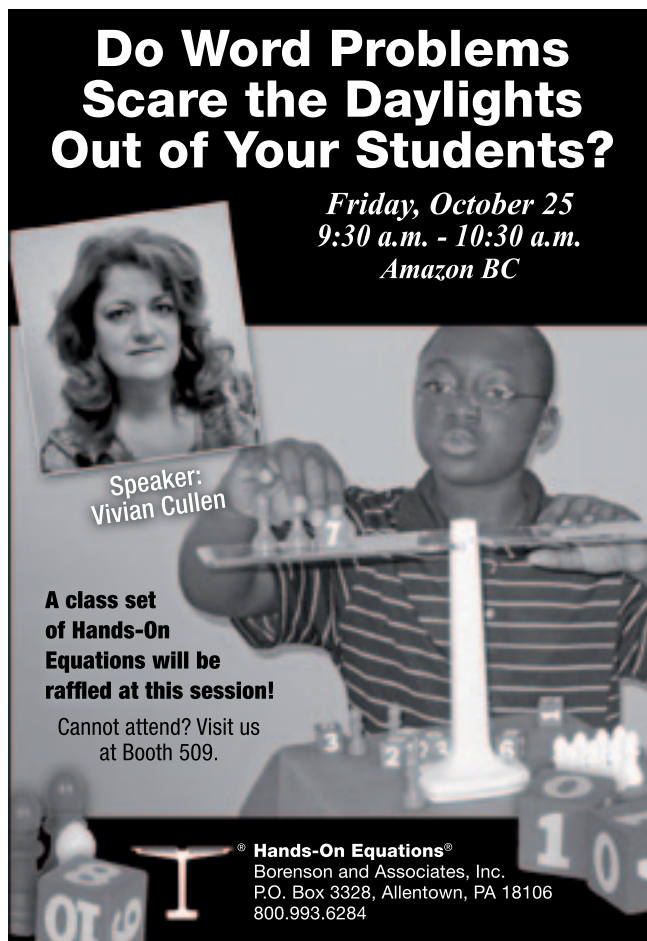
(Pre-K–2) Gallery Workshop

Student discourse must be academically productive to move students to a deeper understanding of mathematical concepts. Observe students talking about math, explore levels of math talk, and learn strategies that encourage more effective instructional discussions in K–2 classrooms.

**Susie K. Katt**  
Lincoln Public Schools, Nebraska

**Tara D. Zuspan**  
Lincoln Public Schools, Nebraska

*Tropical A/B/C/D (Rio)*



**Do Word Problems Scare the Daylights Out of Your Students?**

Friday, October 25  
9:30 a.m. - 10:30 a.m.  
Amazon BC

Speaker:  
Vivian Cullen

**A class set of Hands-On Equations will be raffled at this session!**

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Friday

**162****Addressing Common Core State Standards through Literature and Technology**

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

Explore ways to engage students through literature- and technology-infused activities. Work through field-tested activities based on popular children's literature. All activities directly address the Common Core State Standards.

**Adam Goldberg**

Southern Connecticut State University, New Haven

*Amazon K/L/M (Rio)***163****Three Great Tasks Integrate Mathematical Practices and Common Core Content**

(Pre-K–5) Gallery Workshop

Explore tasks to help our youngest math learners attack the mathematical practices and integrate Common Core Content Standards. Two years of implementation have polished these tasks. Leave with three tasks per grade level, rubrics, teacher evaluation forms, directions, and professional learning community implementation hints.

**Jeanne M. Chmelik**

Glen Ellyn SD #41, Illinois

*Miranda 7/8 (Rio)***164****Getting Real about Fractions**

(3–5) Gallery Workshop

Are fractions really numbers? Do they work like “regular numbers”? These are questions students ask—learn how number lines and manipulatives help students figure out the truth about fractions. They're really numbers, and they make sense! Examine various models for understanding fractions and strategies for teaching operations with fractions.

**Sara D. Moore**

ETA hand2mind, Vernon Hills, Illinois

*Lambada (Rio)***165****Making Our Base-Ten System Concrete and Comprehensible**

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

The foundation of mathematics is a conceptual understanding of our base-ten system. Such groundwork includes identifying numerals used in base ten, connecting symbolic representations of the number ten with concrete representations, and switching bases to more fully understand the challenges students face in the classroom.

**Stacy K. (Keller) Boote**

University of North Florida, Jacksonville

*Tropical EIF/G/H (Rio)***166****Exploring Algebraic Reasoning in a Geometric Context**

(3–8) Gallery Workshop

Come and explore how geometry-based models can help students develop algebraic reasoning as defined by patterns, equality, and change.

**Kay A. Wohlhuter**

University of Minnesota, Duluth

*Brasilia 3 (Rio)***167****Visual Algebra: Concept Development Using Pattern Blocks**

(3–8) Gallery Workshop

With the current focus on testing, using manipulatives for concept development too often disappears at the intermediate level. In this hands-on session, learn how to use pattern blocks to explore, develop, and display algebraic thinking for fourth-, fifth-, and sixth-grade students.

**Pat Ballew**

High Flyers Educational Enrichment, Los Angeles, California

*Amazon I/J (Rio)*

**Thank you** to all of the volunteers who have helped make this conference a success!

10:30 A.M.–12:00 P.M.

## 168 Survival-Master Math: Solving Engineering Challenges through Gaming and Construction

(6–8) Gallery Workshop

Play with the NSF-funded Survival Master video game for PC, employing algebra, measurement, and geometry while applying the heat flow formula to build an Arctic emergency shelter. Then translate concepts from game to workshop by constructing a scale shelter and testing its ability to bear loads and contain heat. Depart with game and lesson materials!

**Camille McCue**

Pea Brain Education, Las Vegas, Nevada

*Amazon R/S/T (Rio)*

## 169 STEM and CCSS: How Do Science and Math Go Together?

(6–12) Gallery Workshop

Learn ways to incorporate the Common Core State Standards (CCSS) by team teaching with your science colleagues. This hands-on session includes activities and labs for you to teach math through interdisciplinary concepts. We will explore the STEM content areas and present ideas to connect through novels with English language arts, social studies, and foreign language.

**Carrie Herron**

Galway Central School, New York

**Jim Reynolds**

Galway Central School, New York

*Amazon H (Rio)*

## 170 Breaking Tradition: Transforming Teaching Using Common Core and Integrated Pathways

(9–12) Gallery Workshop

Have you ever heard the complaint that algebra 2 students show up unprepared? Find out how the state of Utah has transitioned to the integrated pathway model, and hear why teachers are embracing the change. We will share strategies, progressions, and resources for successful implementation.

**Joleigh Honey**

Salt Lake City School District, Utah

**Barbara B. Kuehl**

Salt Lake City School District, Utah

*Miranda 5/6 (Rio)*

## 171 Let's Give Them Something to Talk About

(9–12) Gallery Workshop

The Common Core State Standards put forth a vision of classrooms transformed into learning communities that are a collective effort to create meaning and make connections. We will offer strategies for changing class discussions from teacher-led question-and-answer sessions to mathematical discourse in the context of learning about functions.

**Barbara B. Kuehl**

Salt Lake City School District, Utah

**Travis Lemon**

Alpine School District, American Fork, Utah

*Miranda 3/4 (Rio)*

11:00 A.M.–12:00 P.M.

## 172 NCTM Board Hot Topic: Embracing the Common Core: An Opportunity, Not a Burden

(General Interest) Session

The Common Core presents an unprecedented opportunity for mathematics education in this country. Participants will have an opportunity to learn about NCTM's efforts and to share their own successes and challenges. It is up to us to take ownership and make it happen!

**Peg Cagle**

Board of Directors, National Council of Teachers of Mathematics; Vanderbilt University, Nashville, Tennessee

**Linda M. Gojak**

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

*Conga (Rio)*

## 173 The Art of Teaching Mathematics!

(General Interest) Session

Come be inspired! Student motivation is not a cause but a consequence of achievement. The "art" of teaching mathematics lies within a keen understanding of your own disposition toward either a fixed or growth mindset about mathematics learning and effective lesson design tools.

**Timothy Kanold**

Loyola University, Chicago, Illinois

*Amazon F (Rio)*

Friday

**174**  
**Exploring the Common Core**

(Pre-K–5) Session

Experience engaging activities to explore how the Common Core State Standards will build deeper mathematical understanding for the students in your classroom. Discover how to incorporate the eight Standards for Mathematical Practice into everyday classroom instruction.

**Eldean Whimpey**  
 Pearson, Chandler, Arizona

*Brasilia 5 (Rio)*

**175**  
**Reaching beyond the Classroom to Promote Mathematics Understanding**

(Pre-K–5) Session

See how to organize, plan, and implement two math programs that extend mathematics beyond the walls of K–grade 5 classrooms. I will share resources, examples, and ideas to create a family math night and math club. Both programs are standards based and facilitated by teacher candidates.

**Beth A. Moore**  
 Franklin College of Indiana

*Amazon D/E (Rio)*

**177**  
**Writing: A Tool to Organize and Clarify Mathematics Concepts**

(3–5) Session

Through the powerful tool of writing, students have the opportunity to express their understanding of math concepts in their own words by synthesizing information, organizing and clarifying their thinking, and combining separate ideas into a new whole. Writing helps students with solving problems, identifying patterns, and using precise vocabulary.

**Lynn Columba**  
 Lehigh University, Bethlehem, Pennsylvania

*Amazon N/O (Rio)*

**178**  
**Beyond Word Problems: What Is Mathematical Inquiry?**

(3–8) Session

What is mathematical inquiry? Are word problems the only choice? The best choice? How does my choice or design of math tasks support my students' ability to think mathematically and communicate that thinking? What is the value of all this inquiry? So many questions! Come, and join us as we inquire about mathematical inquiry together!

**Susan Ann Davidson**  
 Ottawa Catholic School Board, Canada

*Palma C/D/G/H (Rio)*

**176**  
**Mathematical Problem Solving: The Thinking Sport**

(3–5) Session

Create a lively math classroom proving mathematical challenges daily. Speak the language of mathematics to ensure that students learn communication and cooperation. Develop a climate of healthy frustration where students keep their minds in motion. Involve all students in meaningful math from starters to independent tasks.

**Marcy Cook**  
 Self-employed, Newport Beach, California

*Brasilia 2 (Rio)*

**179**  
**Yes We Can! Overcoming Math Anxiety**

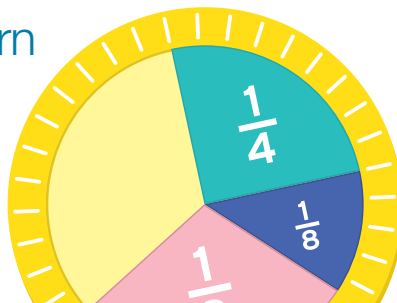
(3–8) Session

Once students hit an obstacle in learning mathematics, they develop math anxieties that research shows may plague them for life! We will examine the research to explore sources of anxiety in grades 3 to 8 and demonstrate emotional learning tools to calm student fears, take a fresh look at troubling material, and develop positive attitudes.

**Jennifer Rising**  
 Council of Presidential Awardees in Mathematics, Chicago, Illinois

*Brasilia 1/4 (Rio)*

Mingle, explore, and learn in the **Exhibit Hall** and **Networking Lounge!**







NATIONAL COUNCIL OF  
TEACHERS OF MATHEMATICS

# 2014 REGIONAL CONFERENCES & EXPOSITIONS

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Whether you're a classroom teacher, administrator, new teacher, or math coach, there's something for you at NCTM's Regional Conferences.

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## 180 Writing in Geometry at the Secondary Level

(6–12) Session

Learn how different forms of writing can be infused into geometry lessons and what purposes writing can serve in the geometry classroom. The main points of discussion will address how different types of writing can provide assessment information for both teacher and student.

**Sharon K. O'Kelley**

Francis Marion University, Florence, South Carolina

*Palma A/B/E/F (Rio)*

## 181 Using NASA Press Releases to Develop Integrated STEM Lessons

(9–12) Session

NASA press releases, integrated space math problems, and NASA videos bring standards-based learning to life with topics such as habitability, astrobiology, and climate change. Sten Odenwald, SpaceMath@NASA creator, will cofacilitate this session. You'll receive STEM modules and other resources in a LiveBinder.

**Sharon Bowers**

National Institute of Aerospace/Virginia Beach City Public Schools, Hampton, Virginia

**Sten Odenwald**

National Institute of Aerospace, Hampton, Virginia

*Amazon P/Q (Rio)*

## 182 Teachers Employing Applied Mathematics to Engage Students (TEAMES)

(9–12, Higher Education) Session

Learn about the TEAMES project at Claremont Graduate University, an applied mathematics master's degree for teachers. Explore applied mathematics problems typical of the program, and discuss the relative benefit of an application focus.

**Christopher S. Brownell**

Claremont Graduate University, California

**Ilene Foster**

Claremont Graduate University, California

*Coco A/B (Rio)*

## 183 Learning Assistants Become Teachers: Developing Teachers and Leaders

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

Math students can help slightly younger students learn. Serving as learning assistants, secondary students relearn math in more depth while mentoring other students. We will share good mathematical tasks, including reasoning and sense making, that will increase learning in your secondary math classrooms while encouraging your best students to choose a math-teaching career.

**David Erickson**

The University of Montana, Missoula

**Lee Brown**

Missoula County Public Schools, Montana

*Jaguar (Rio)*

## 183.1 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–12 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 to demonstrate how easy Moving with Math makes it to differentiate instruction and reach all students!

**Math Teachers Press, Inc.**

Minneapolis, Minnesota

*Tango (Rio)*

## 183.2 The Houghton Mifflin Harcourt Personal Math Trainer (Grades K–12)

(3–8) Exhibitor Workshop

A demonstration of this exciting new digital component that provides adaptive personalized assessment, intervention, and practice. The Personal Math Trainer presented by Tyrone Holmes, National Math Specialist at HMH, includes learning aids to improve the understanding of math concepts including videos, guided examples, and step-by-step solutions.

**Houghton Mifflin Harcourt**

Boston, Massachusetts

*Amazon B/C*

## 184 Directed Intervention: Build a Community Tutoring and Mentoring Program

(General Interest) Session

Response to intervention (RtI) may require more than the classroom teacher or the most effective cohort group can provide. The Oak Ridge High School math department and some retired teachers and administrators have created a program that invites community members to participate as tutors and mentors within the school to provide one more layer of RtI.

**Karla F. Mullins**  
Oak Ridge Schools, Tennessee

**Sandy Christen**  
Oak Ridge Schools, Tennessee

*Brasilia 2 (Rio)*

## 185 Great Math Lesson = Presidential Award + \$10,000

(General Interest) Session

Teachers from the region who have earned a Presidential Award for Excellence in Mathematics and Science Teaching (PAEMST) share their experiences as part of an exciting network of educators. These teachers will discuss high-quality lessons and teaching practices. Learn how the PAEMST application process can showcase your effective-teaching talents.

**Sandra Trevino**  
Triangle Coalition, Washington, D.C.

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

*Brasilia 5 (Rio)*

## 186 Identifying and Building Common Core Fluencies for Mathematics

(General Interest) Session

To become twenty-first-century learners and thinkers, students must see the connections between arithmetic and algebra. I will focus on building foundational fluencies so that struggling students can leverage fact knowledge, deepen understanding of fundamental concepts, and feel prepared for the more rigorous curriculum they will face.

**Jan Scott**  
Scholastic Inc., New York, New York

*Palma A/B/E/F (Rio)*

## 187 Connecting Tactile and Tablet Technology for Early Math Learners

(Pre-K–2) Session

Students who receive daily opportunities to work with, play with, and investigate numbers grow in mathematical thinking, confidence, and enthusiasm. Learn how a variety of virtual manipulatives used on touchscreen tablets builds conceptual understanding and fluency in number sense, place value, and operations for young children.

**John L. Schacter**  
San Jose State University, California

*Conga (Rio)*

## 188 Number Lines: A Gift from CCSSM

(3–5) Session

The Common Core State Standards for Mathematics (CCSSM) emphasize the number line as it connects components of our number system. The same number line serves as a valuable problem-solving tool with the additional benefit of making students' thinking visible. Come join us in this interactive session featuring activities to use in your classroom.

**Kit Norris**  
Educational Consultant, Southborough, Massachusetts

*Coco A/B (Rio)*

## 189 Understanding the Equals Sign = Algebraic Success

(3–8, Research) Session

Many students with math difficulties enter their first-year algebra course with an inadequate understanding of fundamental topics necessary to develop a coherent, conceptual understanding of algebra. I will present results from a study on the effects of an intervention focused on equality and equations for students with math difficulties.

**Jason A. Miller**  
Anne Arundel County Public Schools, Annapolis, Maryland

*Jaguar (Rio)*

12:30 P.M.–1:30 P.M.

## 190 Visual Vocabulary: Are They Getting the Picture?

(3–8) Session

Your students seem to understand math concepts during hands-on activities but 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!

**Sandra White**

Independent consultant—Retired Teacher, Shallowater ISD, Texas

**Theresa Star Tefertiller**

Independent Consultant—Retired Teacher, Klein, Texas

*Brasilia 1/4 (Rio)*

## 191 Direct Variation Is Not a Slippery Slope

(6–8) Session

We will present a series of carefully designed activities that help students make sense of slope as a constant rate of change. We will also make the connection between slope and direct variation. Applications discussed include skate ramps, TV screens, and protein shakes, as well as inverse variation.

**Laurie Boswell**

The Riverside School, Lyndonville, Vermont

*Amazon D/E (Rio)*

## 192 From Arithmetic to Algebra: An Interactive Bulletin Board

(6–8) Session

Research shows that students often struggle with critical topics such as operations with fractions, variable expressions, and integers as they move from arithmetic to algebra. I will introduce the use of a daily discussion bulletin board that enables students to develop a deep understanding of these critical concepts.

**Andy Clark**

Retired, Portland Public Schools, Oregon

*Palma C/D/G/H (Rio)*

## 193 High-Leverage Actions Ensure All Your Students Are Common Core Ready

(6–12) Session

What are the most important actions to take now to ensure that all your students are prepared for the 2015 Common Core State Standards (CCSS) assessments? I will highlight key content and mathematical practices that students need to know and demonstrate, along with research-based instruction and assessment practices and strategies to build students' proficiency in both.

**Diane J. Briars**

President-elect, National Council of Teachers of Mathematics; Independent Consultant, Pittsburgh, Pennsylvania

*Amazon F (Rio)*

## 194 Differentiated Response to Learning CCSS Mathematics

(9–12) Session

What is needed to implement the Common Core State Standards (CCSS) to ensure learning for all students? See how one high school district implements required response to intervention and creates a differentiated response to learning algebra to meet the needs of all students. You will walk away with multiple-entry point tasks and assessment strategies that provide access to content.

**Mona Toncheff**

Phoenix Union High School District, Arizona

*Amazon N/O (Rio)*

## 195 Engaging Your Math Students via Technology

(Higher Education, Preservice and In-Service) Session

Engage your students in math class via technology, including various Web 2.0 tools and social media. Enhance class discussions with Twitter, increase learning time via screencasts and voice threads, and engage students with collaborative tools like Poll Everywhere. Come learn how to *use* technology in your class!

**Diana S. Perdue**

Rimwe Educational Resources LLC, Petersburg, Virginia

*Amazon P/Q (Rio)*

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12:30 P.M.–1:30 P.M.

**195.1** 

**Conquer Times Tables in ONLY 3 WEEKS—Guaranteed!**

(3–8) Exhibitor Workshop

Conquer Times Tables in ONLY 3 WEEKS—Guaranteed! If class average isn't 90% on final test—100% refund. Research-based—MULTI-SENSORY—all four learning styles—for ALL students. No training! MULTI-SENSORY sister products to add, subtract, divide, and do ClockWise fractions and equivalency. More information at [www.rhymesntimes.com](http://www.rhymesntimes.com) or [www.clockwisemath.com](http://www.clockwisemath.com) and at 888-684-6376.

**Rhymes 'n' Times**  
Lewisville, Texas

*Tango (Rio)*

**195.2** 

**Implementing the CCSS Integrated Pathway for High School Mathematics**

(9–12) Exhibitor Workshop

Review resources that support the Common Core Integrated Pathway for high school mathematics. Discuss strategies for the transition from traditional instruction to a problem-based model of teaching and learning. Explore activities that address the eight Mathematical Practices. Participants will receive sample materials to try in their classrooms.

**Walch Education**  
Portland, Maine

*Amazon B/C (Rio)*

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12:30 P.M.–2:00 P.M.

**196**

**Engaging Students in Number Sense, Geometry, Problem Solving, Reasoning, and Discourse**

(Pre-K–5) Gallery Workshop

Explore strategies, including use of manipulatives, to develop number sense, place value, estimation, geometry, and problem solving. See the power of mathematical discourse to develop concepts, reasoning, and mathematics vocabulary. Experience hands-on activities.

**Donna L. Knoell**  
Self, Shawnee Mission, Kansas

*Amazon R/S/T (Rio)*

**197**

**Four Types of Addition Facts That Help Develop All Others**

(Pre-K–5) Gallery Workshop

Four types of addition facts can help students develop fluency with all their addition facts: doubles, +0, make a 10, and 10 + something. Explore activities that build these four types of facts as well as connections to all other addition facts.

**Christina Tondevoid**  
Mathematically Minded, Orofino, Idaho

*Brasilia 3 (Rio)*

**198**

**Hands-On Approach to Teaching Decimal and Fraction Concepts**

(3–5) Gallery Workshop

Are your students having a hard time understanding rational numbers? Come learn some hands-on activities that will increase your students' understanding of rational numbers. We will be using number lines, cards, and dice to explore ways to build an understanding of decimals and fractions.

**Wendy J. West**  
Fairfax County Public Schools, Warrenton, Virginia

*Miranda 7/8 (Rio)*

**199**

**Moving Forward with Metric**

(3–8) Gallery Workshop

Milligrams of medicine, 5K races, 2-liter soft drinks. Metric is here! Learn methods to teach and see the metric system. Hands-on. Meet standards. Classroom activities aligned with Common Core State Standards. Have fun! Handouts and materials provided.

**Donna L. Monck**  
Rock Christian Academy, Easton, Pennsylvania

*Tropical E/F/G/H (Rio)*

12:30 P.M.–2:00 P.M.

## 200 Now Serving: Literature and Mathematical Practices at the Math Factory

(3–8) Gallery Workshop

Join us at the math factory for a delicious mathematical treat that blends imagination, literature, and all the Common Core State Standards for Mathematical Practice into whimsical, hands-on activities ready to be served in the classroom. Characters and themes from R. Dahl's *Charlie and the Chocolate Factory* are ingredients for inspiration.

**Donna Christy**

Rhode Island College, Providence

**Christine Payson**

North Cumberland Middle School, Rhode Island

*Miranda 5/6 (Rio)*

## 201 Math Snacks: Teach the Mathematics Practices Using Animations and Games

(6–8) Gallery Workshop

Math Snacks are free animations and games developed with support from the National Science Foundation to teach middle-level math conceptually. We will demonstrate how the animations and games can be used with hands-on classroom activities and written work to develop student understanding of ratio, proportion, number line, coordinate plane, number sense, and scale factor.

**Karen M. Trujillo**

New Mexico State University, Las Cruces

**Kerry McKee**

New Mexico State University, Las Cruces

**Valeria Holguin**

New Mexico State University, Las Cruces

*Miranda 3/4 (Rio)*

## 202

### What Does It Mean to Be Human?

(6–8) Gallery Workshop

How do we keep middle school children interested in math and science? We let them play with robots! Students read the book *The Adoration of Jenna Fox* and discuss in math and science classes what it means to be human. In small groups, the students then help a robot they create navigate through a coordinate plane with obstacles.

**Daniel Lawrence Fisher**

Berkeley Preparatory School, Tampa, Florida

**Nicole Ackerson**

Berkeley Preparatory School, Tampa, Florida

*Miranda 1/2 (Rio)*

## 203

### The Golden Ratio in the Human Body

(6–12) Gallery Workshop

We will use measuring tapes to estimate the length of various body parts and submit our findings via classroom navigator system. The data will be aggregated and returned using the same system. We will analyze slope and line of best fit to find the golden ratio and then look at examples in the real world.

**Deobra Solomon**

Retired Teacher, Reno, Nevada

*Lambada (Rio)*

## 204

### Algebra 1 and 2 Activities from Automotive, Manufacturing, and Construction

(9–12) Gallery Workshop

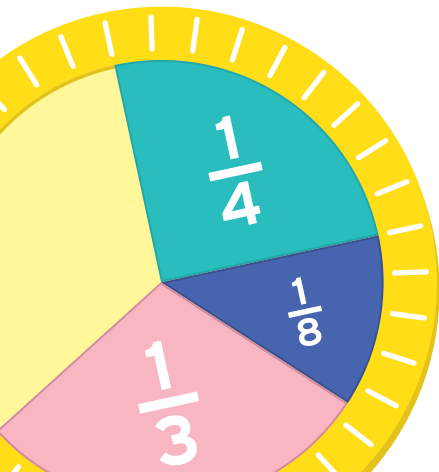
Participate in and receive engaging hands-on classroom activities spanning many career paths. These activities highlight the Common Core State Standards for Mathematical Practice and cover math topics such as linear equations, systems of equations, quadratics, and exponents. See how project-based activities can increase learning and provide relevance.

**Tom W. Moore**

Thompson R2J Schools, Loveland, Colorado

*Amazon K/ILM (Rio)*

Friday



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

12:30 P.M.–2:00 P.M.

## 205 Statistical Inference through Simulation

(9–12) Gallery Workshop

Using hands-on techniques and technology to conduct simulations, we will explore concepts of statistical inference. These simulations (randomization tests) provide more flexibility in the hypotheses our students can test and allow them to focus on conceptual understanding and statistical thinking.

**Paul L. Myers**

Georgia Institute of Technology, Atlanta, Georgia

*Tropical A/B/C/D (Rio)*

## 206 Using Super Mario with Falling Objects and Quadratics

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

Work on a series of problems that model the motion of falling objects using the Super Mario character. Mario's adventures are used to model quadratic systems as well as quadratic-linear systems of equations. We'll use the graphing calculator as a tool for solving these systems.

**Jack Burke**

Fiorello H. LaGuardia High School of Music and Art and Performing Arts, New York, New York

*Amazon H (Rio)*

## 207 The Art of Problem Posing

(Preservice and In-Service) Gallery Workshop

Problem solving should be at the heart of the mathematics we teach. So math teachers at all levels should use high-level, challenging problems in their teaching as much as possible. But where do these problems come from? We will give you several strategies for creating your own math problems and perhaps change your views about the "typical" math problem!

**Brian P. Beaudrie**

Northern Arizona University, Flagstaff

**Barbara Boschmans**

Northern Arizona University, Flagstaff

*Amazon I/J (Rio)*

2:00 P.M.–3:00 P.M.

## 208 Differentiating Professional Development in Elementary Mathematics

(General Interest, Research) Session

Every teacher does not need to participate in the same mathematics training! Find out why we should be differentiating our professional development for our teachers, and look at ideas for how to make it happen.

**Amy Weber-Salgo**

Washoe County School District, Reno, Nevada

*Coco A/B (Rio)*

## 209 Get Your Math Class Rockin'

(Pre-K–2) Session

Teach number sense, place value, time, money, counting, shapes, fractions, math facts, skip counting, and so much more, with the power of easy-to-use songs, games, and activities. Join us for a fast-paced session that will add to your students' understanding of math concepts, help raise test scores, and energize your classroom. Prizes! Handouts!

**Ronald J. Brown**

Intelli-Tunes, Red Bluff, California

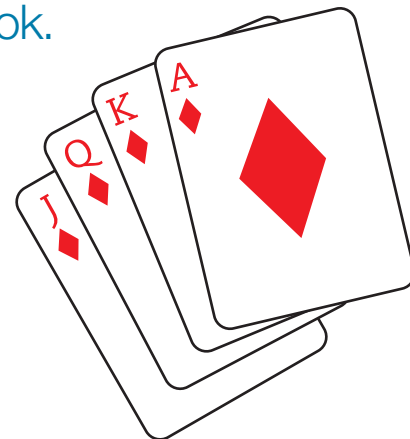
**Nancy J. Brown**

Intelli-Tunes, Red Bluff, California

*Brasilia 1/4 (Rio)*

Friday

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



## 210 Patterns: Where Do They Go from Here?

(Pre-K–5) Session

How does the pattern work we do connect to more sophisticated mathematical ideas? We will explore repeating and growing patterns as a foundation for algebraic thinking and later mathematics, including operations and functions. Come prepared to look at patterns in multiple ways. You may even learn some modular arithmetic!

**Kim A. Markworth**

Western Washington University, Bellingham, Washington

*Palma C/D/G/H (Rio)*

## 211 Reasoning and Proof through Student Discourse

(3–5) Session

We will look at a fourth-grade classroom where students explore the meaning of key mathematical concepts through conversation, debate, and reasoning. Learn about key social and socio-mathematical norms that support the learning environment. Receive sample lesson plans, and see sample video.

**Michele Heron**

Kent State University at Stark, North Canton, Ohio

*Brasilia 5 (Rio)*

## 212 Math Happens When Children Wonder about What They Read

(3–8) Session

Literature can ignite students' minds and lead to mathematical understanding. The author of *How Much Is a Million?* and other books shows how books can inspire children to ask questions and solve problems. He shares impressive student work, including extensions of his books and remarkable efforts to confirm or disprove the author's math.

**David M. Schwartz**

Author, Oakland, California

*Amazon F (Rio)*

## 213 Scaffolding Basic Math Skills for Special Populations

(3–8) Session

I will show you supplemental differentiated teaching techniques that support basic math skills necessary for student success in math computation. The techniques take into account the needs of struggling students such as English language learners and students with special needs.

**Michael S. Padeken**

Clark County School District, Las Vegas, Nevada

*Amazon D/E (Rio)*

## 214 Fast Facts and Fractions

(6–8) Session

Four out of three students struggle with fractions! And the other 50 percent struggle with the times tables. See how I helped my intervention students master all fraction operations and master their multiplication facts. This simple approach is ready for immediate implementation. You will receive a comprehensive handout.

**Brad S. Fulton**

Enterprise Elementary School District, Redding, California

*Palma A/B/E/F (Rio)*

## 215 Investigating Geometric Transformations and Congruence

(6–12) Session

The Common Core State Standards include geometric transformations in understanding geometric congruence and similarity. They are no longer treated as an isolated topic. Let's explore the connection between transformations, congruence and similarity, and real-world applications of these concepts.

**Keith Krone**

Boise State University, Idaho

**Gwyneth Hughes**

Boise State University, Idaho

*Amazon P/Q (Rio)*



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2:00 P.M.–3:00 P.M.

## 216 STEM Investigations in the High School

(6–12) Session

Come see four STEM investigations that can inspire in-depth student involvement in science, technology, engineering, and mathematics. Learn how these investigations were developed, and explore how you and your students could create more.

**David A. Young**

Fayetteville Public Schools, Arkansas

*Brasilia 2 (Rio)*

## 217 Hands-On Individualized Project: From Graphing Lines to Finding Derivative Functions

(9–12, Higher Education) Session

Students begin by creating four unique lines that they will use throughout the project. The project is broken into many parts and allows students to explore linear algebra, discover the family of polynomials, graph rational functions, understand asymptotes, apply limits to infinity and beyond, and understand the definition of the derivative in both forms.

**Seth Blum**

Manhattan International High School, New York, New York

*Jaguar (Rio)*

## 218 SKyTeach at Western Kentucky University: Teacher Preparation for STEM Disciplines

(Higher Education) Session

SKyTeach is an innovative teacher preparation program for science and mathematics majors. Preparation occurs through a field-based model of intensive mentoring and coaching by master teachers to develop exemplary teachers in STEM disciplines. Participate in inquiry-based lesson vignettes that are the hallmark of SKyTeach.

**Martha Day**

Western Kentucky University, Bowling Green, Kentucky

**Les L. Pesterfield**

Western Kentucky University, Bowling Green, Kentucky

*Amazon N/O (Rio)*

## 219 Pedagogical Judgment and Instructional Choices for Building Effective Mathematics Classrooms

(Preservice and In-Service) Session

Teachers make thousands of instructional choices, big and small, that define students' learning opportunities. Examine three high-leverage practices of math teachers (management of homework, public record of work to guide mathematical discourse, and assessment and evaluation of and for reasoning and sense making) to become more adept at making the right moves.

**Peg Cagle**

Board of Directors, National Council of Teachers of Mathematics; Vanderbilt University, Nashville, Tennessee

*Conga (Rio)*

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2:00 P.M.–3:00 P.M.

## 219.1 Implementing CCSS from a Teacher's Perspective

(6–12) Exhibitor Workshop

When it comes down to the implementation of the 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

*Amazon B/C (Rio)*

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2:30 P.M.–4:00 P.M.

## 220 Stages of Early Arithmetic Learning and Struggling Students

(Pre-K–2) Gallery Workshop

Identify the stages young children go through in acquiring early arithmetic learning, and then learn techniques for struggling learners in these stages. Leave with materials to use with students.

**Lois A. Williams**

Independent Consultant, Scottsville, Virginia

*Tropical A/B/C/D (Rio)*

Friday

2:30 P.M.–4:00 P.M.

## 221 Thinking Strategically: Connecting Addition and Subtraction

(Pre-K–2) Gallery Workshop

By the end of grade 2, students are expected to explain why addition and subtraction strategies work. Three strategies lead students to the connections between the two operations and supply the underlying reasoning to the basic facts. We can extend these to multidigit computation. Let's arm our students with meaningful strategies.

**Rob Nickerson**

ORIGO Education, St. Charles, Missouri

*Amazon H (Rio)*

## 222 Camping In: Math Style

(Pre-K–5) Gallery Workshop

Are you hiking through the world of mathematics looking for great ideas? Join us and camp in math style! Hike to math trail posts (stations), complete rich problems in your camp journal, and earn your camp badges. Fill your backpack with great ideas for the classroom or a family math night. Handouts and s'mores provided!

**Kelli Shrewsberry**

Teaching & Learning Collaborative, Columbus, Ohio

**Jessica Cahill**

South Western City Schools, Grove City, Ohio

**Phyllis Bates**

TLC Consultant, Columbus, Ohio

*Miranda 3/4 (Rio)*

## 223 “Let’s Get Physical” with Math on the Floor!

(3–5) Gallery Workshop

In this very active session, you will see how easy it is to teach math concepts through physical movement on a large 100-square floor grid. I'll address number patterns, operations, larger numbers, money, and fractions and share tips on how to make your own large floor grid. Bring a camera and come prepared to move through math!

**Wendy E. Hill**

Retired Elementary Teacher, Mississauga, Canada

*Miranda 1/2 (Rio)*

## 224 Modeling Common Denominators with Rectangles, Number Lines, and Smiley Faces

(3–5) Gallery Workshop

Learn to use rectangles and number lines to model common denominators so that two different denominators can work together on the same whole. These faithful models are friendly to use and accessible to all children. Experience the models, see samples of student work, and take handouts you can use on Monday morning.

**Jennifer Wood Synold**

bby Publications at University of West Alabama, Livingston

*Tropical EIF/G/H (Rio)*

## 225 CCSSM Progression: Grades 6–8 Expressions and Equations

(6–8) Gallery Workshop

Build on the Common Core State Standards for Mathematics (CCSSM) progressions from K–grade 5 Operations and Algebraic Thinking to grades 6–8 Expressions and Equations. Use the properties of operations to manipulate algebraic expressions and produce different but equivalent expressions.

**Lisa D. Scott**

Lisa Scott Mathematics Education Consulting, Billings, Montana

*Miranda 7/8 (Rio)*

## 226 Modeling Lessons That Teach Concepts of Linear Functions

(6–12) Gallery Workshop

Come and model situations designed to increase concept development of and fluency with linear functions. We will discuss links to the Common Core State Standards for expressions, equations, statistics, and functions, as well as the Standards for Mathematical Practice. Receive lesson plans.

**Shelley Kriegler**

Center for Mathematics and Teaching, Los Angeles, California

*Miranda 5/6 (Rio)*

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2:30 P.M.–4:00 P.M.

**227**

## Preparing for Calculus throughout the Grades 6–12 Curriculum

(6–12) Gallery Workshop

Explore ways to preview calculus concepts in grades 6 through 12. Use problem-solving and critical thinking skills to preview calculus concepts that are already in your current curriculum. Learn how to preview integrals, derivatives, inflection points, and more.

**Terry Walsh**

Retired, Loveland, Colorado

*Amazon R/S/T (Rio)*

**228**

## Using Formative Assessment Lessons

(6–12) Gallery Workshop

Formative assessment lessons allow students to explore specific mathematical ideas and visibly exhibit their understanding and questions. As you monitor and observe your students working, you are better able to develop questions that deepen students' understanding and plan future experiences to enhance their learning.

**Patricia M. Rogers**

Brownell Middle School and San Jose State University, Gilroy, California

*Amazon I/J (Rio)*

**229**

## Alternative Assessments in Geometry

(9–12) Gallery Workshop

Definitely not your traditional paper-and-pencil tests. These assessments include a scavenger hunt, photo search, and origami. Content assessed includes the special segments of a triangle with points of concurrency, transformational geometry, and areas of regular and nonregular polygons. Consider bringing your laptop with Geometer Sketchpad.

**Janet C. Kagan**

Hononegah High School, Rockton, Illinois

*Brasilia 3 (Rio)*

**230**

## Forensic Photography: CSI for the Eccentric(ity)

(9–12) Gallery Workshop

Our brain convinces us from experience that a round conference table observed from a distance actually has a circular tabletop. However, in a 2-D photograph taken from that perspective, the perimeter looks elliptical. Finally, a practical use of eccentricity. Learn to use photos forensically to deduce camera angles, lengths, and distances.

**Mike Reiners**

Christ's Household of Faith School, Saint Paul, Minnesota

*Amazon K/L/M (Rio)*

**231**

## Integrated STEM: Teaching Mathematics in a STEM Context

(Preservice and In-Service) Gallery Workshop

As called for by the Common Core State Standards and the NCTM Standards, we have developed an approach to teaching mathematics using a STEM context. This approach is based on giving students projects and problems that require mathematics in the context of purposeful learning situations that enliven mathematics in ways that are consistent with their use by STEM professionals.

**Louis S. Nadelson**

Boise School District, Idaho

**Anne L. Seifert**

Idaho National Laboratory, Idaho Falls

*Lambda (Rio)*

---

3:30 P.M.–4:30 P.M.

**232**

## A Mathematical Carnival

(General Interest) Session

Step right up! Enter the wonderful world of recreational mathematics. I will model enthusiastic teaching and present mathematics in a spirit of play. You will learn activities that enhance the NCTM Standards and motivate students to become active learners. Come prepared to experience the beauty and fun of mathematics.

**Charles Sonenshein**

Wright State University, Dayton, Ohio

*Amazon F (Rio)*

### 233

## Teaching Effectively Using the Standards for Mathematical Practice

(General Interest) Session

What are some ways you can naturally integrate the Standards for Mathematical Practice into the Common Core State Standards and NCTM Process Standards? I will offer insights on how to do this, as well as share strategies from my book *Whole Class Mathematics Discussions: Improving In-Depth Mathematical Thinking and Learning*.

**Teruni Lamberg**  
University of Nevada, Reno

*Brasilia 1/4 (Rio)*

### 234

## Gaining Insight into Kindergarteners' Algebraic Thinking

(Pre-K–2) Session

Learn how symbolic tools and designed artifacts facilitate development of algebraic thinking and sociomathematical authority in young children. Through learning basic mathematics, exploring solutions, investigating physical materials, self-validating, and using symbolic tools and designed artifacts, young children develop algebraic thinking.

**Rupam Saran**  
City University of New York, New York

*Brasilia 5 (Rio)*

### 235

## Building a Community of Mathematicians

(Pre-K–5) Session

Learn strategic ways to build a community of mathematicians and establish norms for a positive mathematical environment. I will emphasize the need for inquiry-based instruction as it relates to the Common Core State Standards. Learn various ways of engaging students during math instruction.

**Carla M. Kolodey**  
Jefferson County Public Schools, Louisville, Kentucky

*Amazon N/O (Rio)*

### 236

## Developing Mathematical Thinking, Reasoning, Discourse, and Real-Life Problem Solving Proficiency

(3–8) Session

I will discuss the importance of developing effective discourse to build mathematical concepts, reasoning, and vocabulary. We will actively engage in real-life problem solving. I will offer strategies to identify the question, eliminate nonrelevant information, and translate information into a mathematical equation. Handouts provided.

**Donna L. Knoell**  
Consultant, Shawnee Mission, Kansas

*Palma A/B/E/F (Rio)*

### 237

## Engaging Real-World Investigations for Skill Development

(3–8) Session

When will I ever use this? Resolve this common question with engaging real-world investigations. We will articulate a four-step approach to math teaching that supports the Common Core State Standards for Mathematical Practice: concrete–representational–abstract–real-world. You will receive sample problems and learn how they are being applied.

**Arjan Khalsa**  
Conceptua Math, Petaluma, California

**Lauri Susi**  
Conceptua Math, Petaluma, California

*Amazon P/Q (Rio)*

### 238

## Archimedes' Box

(6–8) Session

Over two thousand years ago, Archimedes created the stoma-chion or “stomach turner,” a puzzle consisting of fourteen polygons that can be arranged in a twelve-by-twelve square such that all the vertices are integer points. Rather than creating bellyaches, teachers can use it to present and explore topics to increase geometric understanding.

**Don S. Balka**  
Saint Mary's College, Notre Dame, Indiana

*Brasilia 2 (Rio)*

**239****Navigating Ratios and Proportional Relationships in CCSSM**

(6–8) Session

Learn to navigate the Common Core State Standards for Mathematics (CCSSM) ratios and proportional relationships content standards with a learning trajectory for ratio, proportion, and percent. Use descriptor resources from [turnoncmath.net](http://turnoncmath.net) and engage in vertical team discussions of conceptual development and instructional coherence across grades 6–8.

**Jennifer Nickell**

North Carolina State University, Raleigh

**Alan Maloney**

North Carolina State University, Raleigh

*Conga (Rio)***240****Mathematical Curves in the Real World: Fun(ctional) Learning**

(6–12) Session

Conic sections, spirals, catenaries, cycloids, fractals, and other mathematical curves will be presented in many different ways (humorous and real). You will see hands-on activities, computer and calculator applications, and free online videos. Focus of talk: connections within mathematics and science. Come learn why there really aren't any parabolic trajectories on Earth!

**Scott D. Oliver**

A. E. Stevenson High School, Lincolnshire, Illinois

*Amazon D/E (Rio)***241****Voting for Better Reasoning in a Math Classroom**

(6–12) Session

The mathematics of voting is easily approachable by any secondary student, is rich with deep thinking, and offers numerous opportunities for writing and communicating individual thinking. This topic, often overlooked, fits nicely within the Common Core State Standards framework and enhances writing and literacy in the math classroom.

**Allen Jacobson**

Davis School District, Farmington, Utah

*Palma C/D/G/H (Rio)***242****Computer Gaming: Mathematics Applications to Engage Students**

(9–12, Higher Education) Session

Using Matlab, we will create computer games that include animation, audio, and video, emphasizing hands-on experiential learning opportunities for students. Explore cross-disciplinary problem-solving methods that combine mathematics and technology.

**Susan G. Helser**

Mott Community College, North Branch, Michigan

*Coco A/B (Rio)***243****Using Web 2.0 Tools to Enhance Mathematical Thinking**

(Higher Education, Preservice and In-Service) Session

Web 2.0 technology tools (Facebook, Twitter, blogs, wikis, and journals) can be used to enhance the mathematical thinking and reflection of teacher candidates. We will present strategies for increasing student-to-instructor communication, student-to-student communication, and reflective thinking.

**Jennifer Carter McCain**

Morehead State University-Ashland, Kentucky

**Sherry Lynn Stultz**

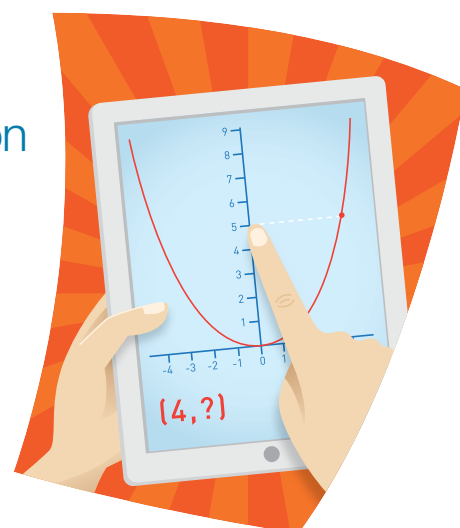
Morehead State University, Kentucky

**April D. Miller**

Morehead State University, Kentucky

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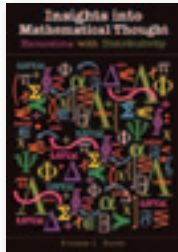


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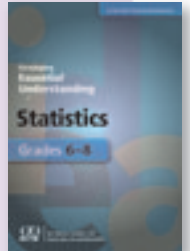
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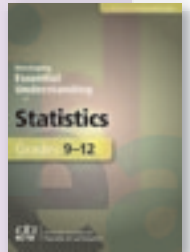


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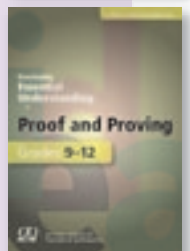


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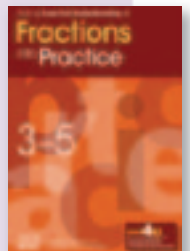
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The Nevada Mathematics Council (NMC) is made up of members from each of the three NCTM regional partner affiliates (Northern Nevada, Southern Nevada and Great Basin Mathematics Councils) across Nevada totaling over 350 members. NMC Board Members are comprised of a minimum of two members of each of the three NCTM regional affiliates, two state mathematics specialists, and two higher education representatives. The Board currently has a total of 16 members. Board meetings for NMC are conducted mostly through phone conferences, but the council does meet twice a year for face-to-face meetings (once in southern Nevada and once in northern Nevada). The face to face meetings occur near the regional mathematics conferences in the state to enable NMC board members to present at the two conferences as well as conduct affiliate business. NMC provides a statewide mathematical perspective whereby ideas, activities and learning about various mathematics initiatives are shared with each representative affiliate.



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*Trudy Lynn Mitchell*  
bby Publications, San Diego, California

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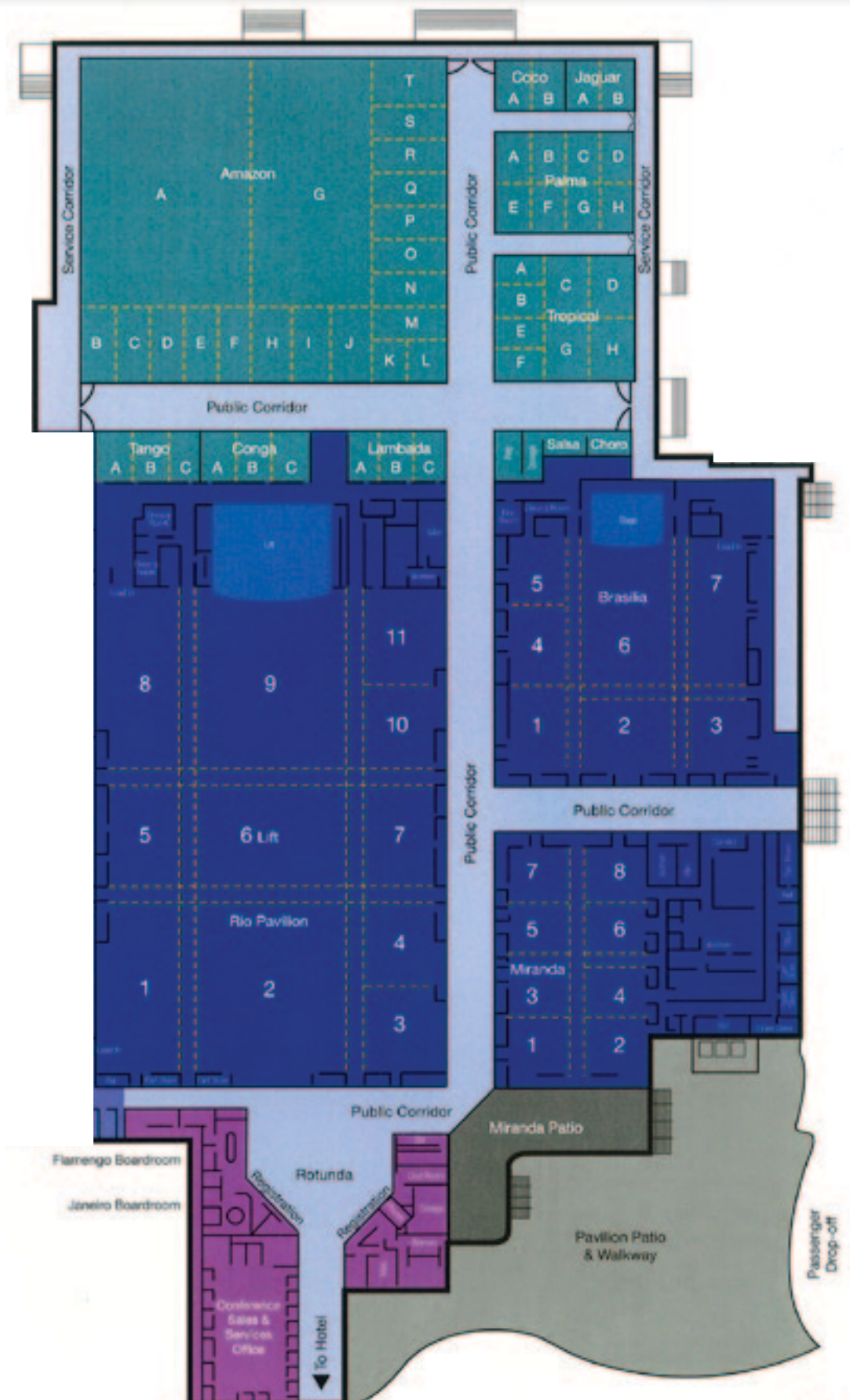
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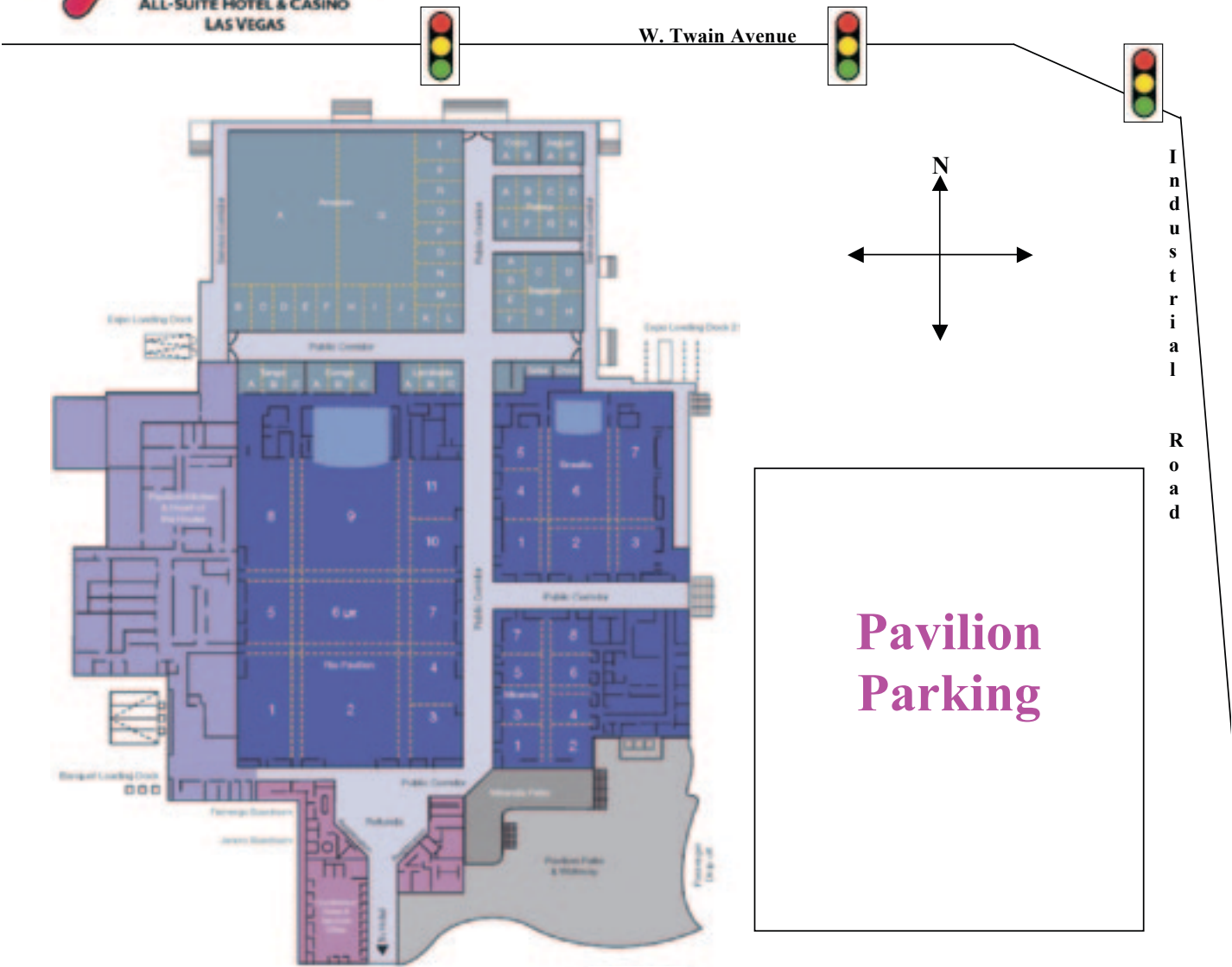
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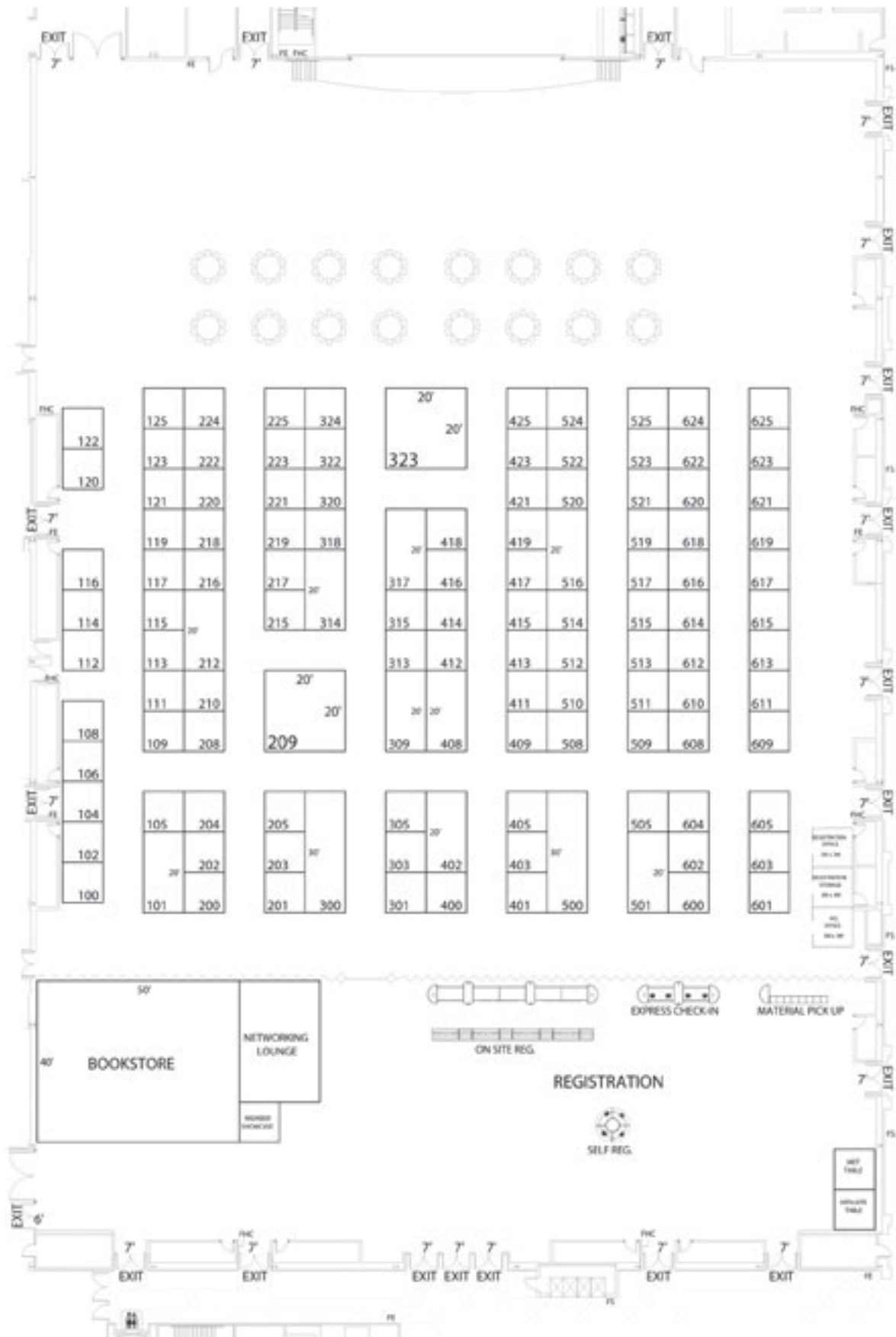
*Lynn Trell*  
Clark County School District, Las Vegas, Nevada

# Floor Plans





# Exhibit Hall Floor Plan



## A

### Ascend Education

**Booth: 219**

Shreveport, Louisiana

PH: 318-865-8232

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

Ascend Math® is a research-based instructional resource in which students have been proven to achieve two or more grade level gains in a six-month period. This web-delivered individualized intervention resource identifies skill gaps, prescribes targeted instruction, and motivates students to achieve their maximum performance and potential.

## B

### Bedford, Freeman & Worth & W.H. Freeman & Company

**Booth: 200**

New York, New York

PH: 212-375-7154

Bedford, Freeman & Worth (BFW) Publishers is the most trusted source for innovative high school mathematics resources. We publish the best-selling books and media resources for AP® Statistics and Calculus and for CCSS-based Modeling and Statistics and Probability courses. Please stop by booth #200 in Las Vegas to receive complimentary copies and to see our digital resources demonstrated.

### Big Ideas Learning, LLC

**Booth: 212**

Erie, Pennsylvania

PH: 877-552-7766

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

Big Ideas Learning, LLC was founded to create instructional materials that provide a coherent math curriculum to support world-class mathematics education. Using the findings of mathematical and pedagogical research, the Big Ideas Math program creators focused on introducing fewer topics at each grade level. The goal of the program is to provide a narrower and deeper course of study that leads students to mastery of each benchmark as they progress from grade to grade.

## Borenson

**Booth: 509**

Allentown, Pennsylvania

PH: 610-398-6908 800-993-6284

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

Borenson and Associates seeks to make math concepts visual and intuitive for elementary and middle school students. The popular Hands-On Equations program for learning basic algebra has now been used by more than a million students. In addition, since 1990 more than 50,000 teachers of grades 3–8 have attended the popular Making Algebra Child's Play workshop. Hands-On Equations products are available for the interactive whiteboard and as Android and IOS apps.

### Box Cars & One-Eyed Jacks Inc

**Booth: 409**

Edmonton, Alberta Canada

PH: 866-342-3386

[boxcarsandoneeyedjacks.com](http://boxcarsandoneeyedjacks.com)

Come visit our booth to find our award winning math game resources. the widest selection of cards, dice, multi-sided dice, dominoes and math game books K–12. All resources are correlated to the Common Core. Award-winning workshops and a team of great consultants. We are doing several workshops at the conference.

### Britannica Digital Learning

**Booth: 417**

Chicago, Illinois

PH: 800-621-3900-7059 800-621-3900-7059

[www.info.eb.com/math](http://www.info.eb.com/math)

Recently updated to completely align to the Common Core, Britannica's Mathematics in Context (MiC) is a standards-based, NSF-funded curriculum for middle grades that is available in pdf, print, and an interactive digital format. With its modular design and embedded science context MiC is perfect for use in a STEM program or as math supplement. SmartMath is a fun Web-based K–8 tool for adaptive math practice. Britannica Mathematics: innovative products with the assurance of Britannica quality!

## C

### Casio America, Inc.

**Booth: 501**

Dover, New Jersey

PH: 973-361-5400

[www.casioeducation.com/home/](http://www.casioeducation.com/home/)

Casio Provides a Total Math Solution for Teachers by offering the latest calculator technology, research-based curriculum with a Common Core focus and customizable professional development. Our newest graphing calculators have large high resolution color displays and intuitive Icon based menus. Casio technology is user friendly and designed to help students understand and excel in math and science. Casio's award-winning technology is affordable and models are available for every grade level.

### Center for Mathematics and Teaching, Inc.

**Booth: 210**

Sherman Oaks, California

PH: 310-310-4948

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

The Center for Mathematics and Teaching is dedicated to creating instructional materials for middle school students through algebra and supporting their teachers with professional development. Our consumable materials have been specifically written to address the content and practices of the Common Core State Standards in mathematics.

### Continental

**Booth: 419**

Elizabethtown, Pennsylvania

PH: 800-233-0759

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

Continental: Quality and Value for over 75 years. Visit our booth to see the latest materials developed specifically for the Common Core. We offer programs in both print and technology to support the varied models of instruction and learning. As you transition into Common Core, let our experts help you find the right materials to support the needs of your students.

## **CORD Communications, Inc.**

**Booth: 512**

Waco, Texas  
PH: 254-776-1822

CORD Communications specializes in providing contextual-based math learning tools that enable a majority of students to succeed. Application, activities and action allow students to achieve deeper understanding and long-lasting learning. This is math your students will use, in the classroom, online and in life. Now Common Core compliant!

## **CPM Educational Program**

**Booth: 208**

Sacramento, California  
PH: 209-745-2055  
[www.cpm.org](http://www.cpm.org)

CPM offers a comprehensive mathematics program, aligned with the Common Core State Standards (content and practices), for grades 6 through calculus. Experienced CPM teachers provide professional development workshops and individual mentoring so that teachers can effectively implement problem-based lessons in student-centered classes. CPM also offers professional development programs to help with the transition to CCSSM, as well as custom-designed professional development.

## **Creative Mathematics**

**Booth: 414**

Arcata, California  
PH: 707-826-2965  
[www.creativemathematics.com](http://www.creativemathematics.com)

Creative Mathematics is a leading educational consulting company that has provided 23 years of teacher training workshops in the United States, Canada and internationally. Creative Mathematics offers books, music, supplies and manipulatives that our presenters use in many of their presentations. Many of these materials are exclusive to Creative Mathematics and are both entertaining and powerful tools that can help improve your teaching now!

## **D**

### **Damand Promotions**

**Booth: 423**

Poway, California  
PH: 858-663-5129  
[www.Damand.com](http://www.Damand.com)

The Parent's Homework Dictionary is designed to empower parents with knowledge to help their children succeed in school. This book comes in 10 languages with chapters in all the major subject areas including a major focus on math (K–10). Each book has free online worksheets to help students stay sharp during the summer months.

### **Didax Inc**

**Booth: 205**

Rowley, Massachusetts  
PH: 978-997-4385  
[www.didax.com](http://www.didax.com)

We'll be showcasing new math resources, many aligned to the Common Core State Standards. Stop by and check out our new math manipulatives, resource books, games, and more! Features also include Kathy Richardson's K–2 assessment program—Assessing Math Concepts.

### **Dinah-Might Adventures, LP**

**Booth: 317**

San Antonio, Texas  
PH: 210-698-0123 800-993-4624  
[www.dinah.com](http://www.dinah.com)

Dinah-Might Adventures, LP is an educational publishing and consulting company owned by Dinah Zike, Author/Speaker. Her books are known for their innovative ways to use Foldables® in teaching all subjects and grade levels. She also offers professional development at the Dinah Zike Academy, a unique trainer of trainers facility in Texas.

## **E**

### **EAI Education**

**Booth: 301**

Oakland, New Jersey  
PH: 800-770-8010  
[www.eaieducation.com/](http://www.eaieducation.com/)

EAI is a leading manufacturer and distributor of math manipulatives, resource books, trade-books, interactive whiteboard software, games, puzzles, and calculators for all grade levels.

## **EPS Literacy and Intervention**

**Booth: 202**

Cambridge, Massachusetts  
PH: 617-547-6706 800-225-5750  
[epsbooks.com](http://epsbooks.com)

EPS Literacy and Intervention provides K–12 blended learning solutions to help at-risk and on-level students build proficiency in reading and math. From screening, to instruction and intervention, progress monitoring, reporting and professional development, we offer an integrated approach to address the Common Core State Standards and RTI. Please visit [epsbooks.com](http://epsbooks.com) or call 800-225-5750.

## **ETA hand2mind**

**Booth: 402**

Vernon Hills, Illinois  
PH: 847-968-5204  
[www.hand2mind.com](http://www.hand2mind.com)

ETA hand2mind supports P–12 educators in their quest to inspire and champion learning by doing with research-based, hands-on solutions. Innovations in mathematics, science, and literacy provide instructional curriculum, custom-kit options, manipulatives, interactive digital applications, and teacher coaching and development.

## **ExploreLearning**

**Booth: 204**

Charlottesville, Virginia  
PH: 866-882-4141-224  
[www.explorelearning.com](http://www.explorelearning.com)

ExploreLearning develops two best-of-breed online solutions that help students succeed in math and science: ExploreLearning Gizmos, the world's largest library of highly interactive simulations for math and science in grades 3–12; and ExploreLearning Reflex, the most powerful math fact fluency program ever developed. Both have been recognized by the SIIA CODiE Awards as Best K–12 Instructional Solution (Gizmos in 2009, Reflex in 2012) in addition to many other accolades.

## **F**

### **FACEing MATH**

**Booth: 411**

Hemet, California  
PH: 951-492-8341  
[www.FACEingMATH.com](http://www.FACEingMATH.com)

FACEing MATH sells standards-based supplemental math workbooks that are a unique blend of math and art. The workbooks are all written by classroom teachers and range from first grade through high school algebra 2.



## First in Math - Suntex International

**Booth: 416**  
Easton, Pennsylvania  
PH: 610-253-5255  
[www.firstinmath.com](http://www.firstinmath.com)

Suntex's First In Math Online Program® complements any curriculum. Minutes a day, in the classroom or at home, gives K–12 students the “deep practice” necessary for skill retention and improved test scores. Engaging, substantive, self-paced content enables students to take ownership of the learning process—with no additional load on teachers.

## Frog Publications

**Booth: 305**  
San Antonio, Florida  
PH: 800-777-3764

Frog Publications is a publisher of educational materials, primarily used at the elementary level, with products that include: Systematic reinforcement programs, individualized educational plans, response to intervention, differentiated instruction, terrific, ready-to-use learning centers, take-home parental involvement program, daily review, critical thinking and dual language! All Frog games use the same easy-to-learn rules. Students needing different levels or skills can practice together!

## H

### Hewlett-Packard

**Booth: 217**  
San Diego, California  
PH: 619-677-8049  
[www.hp.com/go/calculators](http://www.hp.com/go/calculators)

HP creates new possibilities for technology to revolutionize your classroom, bringing mathematics to life and engaging students in participatory learning. With the new HP Prime graphing calculator, students can intuitively manipulate complex graphs and geometric images on its full-color, multi-touch screen.

### Hooda Math

**Booth: 514**  
Saint Louis Park, Minnesota  
PH: 612-437-9977  
[www.hoodamath.com](http://www.hoodamath.com)

Hooda Math has over 20 free math apps for iPhone, iPad, Android, and Kindle. Visit their booth to try them out. For over five years they have been providing free online math games and tools at [www.hoodamath.com](http://www.hoodamath.com). New this year, Hooda Math is proud to introduce [www.hoodagames.com](http://www.hoodagames.com) that works on all mobile browsers, no downloading required.

## Houghton Mifflin Harcourt

**Booth: 215**  
Boston, Massachusetts  
PH: 617-351-5344  
[www.hmhco.com](http://www.hmhco.com)

HOUGHTON MIFFLIN HARCOURT is a global learning company committed to changing lives by fostering passionate, curious learners. Among the world's largest providers of pre-K–12 education solutions and one of its longest-established publishing houses, HMH combines cutting-edge research, editorial excellence, and technological innovation to improve teaching and learning environments.

## I

### It's About Time

**Booth: 324**  
Mt. Kisco, New York  
PH: 914-273-2233  
[www.iat.com](http://www.iat.com)

It's About Time is a leading educational publisher of middle and high school inquiry-based science and math programs supported by the National Science Foundation. Our challenge-driven programs increase student achievement because they motivate and engage, develop critical thinking, give students the skills to work collaboratively, and the ability to apply what they have learned.

### IXL Learning

**Booth: 516**  
San Mateo, California  
PH: 650-372-4349  
[www.ixl.com](http://www.ixl.com)

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

## J

### Johnny's Key

**Booth: 403**  
Trevorton, Pennsylvania  
PH: 570-809-2840  
[www.JohnnysKey.com](http://www.JohnnysKey.com)

Johnny's Key, founded in 2010, has helped thousands of teachers and students understand/model difficult math concepts such as elapsed time, making change, subtraction with regrouping, ratio/proportion, equality, and ordering of numbers, fractions, decimals, and percents. Founder Barbara Spotts provides Professional Development to teachers nationwide on topics such as How to Take Charge of Your Own Professional Development, What Math Class Should Look and Sound Like, and Questioning Strategies.

## K

### Kendall Hunt Publishing Company

**Booth: 314**  
Dubuque, Iowa  
PH: 563-589-1075  
[kendallhunt.com/prek12](http://kendallhunt.com/prek12)

Kendall Hunt offers a complete, Common Core–aligned mathematics solution for grades pre-K–12. With a strong focus on the CCSS Mathematical Content and Mathematical Practice standards, our programs are designed to help students develop both procedural skills and conceptual understanding. Stop by booth 314 to see what's new for 2014 and get a sneak peek at digital Math Trailblazers, Math Intervention for the Common Core State Standards, and our new edition of Discovering Algebra!

## L

### The Learning Carpet-TLC, Inc.

**Booth: 508**  
Huntsville, Ontario Canada  
PH: 705-789-8912  
[www.thelearningcarpet.com](http://www.thelearningcarpet.com)

The Learning Carpet, with its associated number and pattern cards, clockhands, and symmetry lines, is a highly effective classroom tool to approach concepts kinesthetically in grades K–5. Children move on the carpet, developing an understanding of numerical patterns, tens and ones, operations, time, money, geometry, nonstandard measurement, data management and mapping.

## Learning Wrap-Ups

**Booth: 315**  
Layton, Utah  
PH: 801-497-0050  
[learningwrapups.com](http://learningwrapups.com)

Learning Wrap-Ups is the publisher of Learning Wrap ups and Learning Palette. These unique products provide self-correcting learning tools specifically designed to develop automatic recall of basic math facts and to assist in the mastery of important Common Core skills covering the primary mathematical strands.

## Lone Star Learning

**Booth: 313**  
Lubbock, Texas  
PH: 806-281-1424  
[store.lonestarlearning.com](http://store.lonestarlearning.com)

Lone Star Learning is a curriculum development company offering unique, easy-to-use visuals and interactive bulletin boards that give students specific practice needed to achieve mastery in math, science, and language arts. We strive to decrease teacher effort while increasing student success with our innovative products!

## M

### Magformers

**Booth: 203**  
Salt Lake City, Utah  
PH: 801-558-9526  
[www.nclmagneticshapes.com](http://www.nclmagneticshapes.com)

Magnetic Math: Powerful neodymium magnets encapsulated within every side of squares, triangles, pentagons, hexagons, octagons and rhombi. All magnets rotate to always connect. Shapes are a great manipulative to build geometric shapes demonstrating spatial relationships and to visualize surface area, vertices, and volume. We have platonic shape sets and prism and pyramid sets available.

### Math Olympiads

**Booth: 412**  
Bellmore, New York  
PH: 516-781-2400

Mathematical Olympiads for Elementary and Middle Schools is a not-for-profit corporation dedicated to stimulating enthusiasm, fostering creativity, and strengthening intuition in mathematical problem solving. Using monthly contests, teachers and teams of up to 35 students explore mathematical concepts while developing flexibility in non-routine problem solving. Last year more than 5,000 teams in grades 4–8 throughout the and worldwide participated.

## Math Solutions

**Booth: 322**  
Sausalito, California  
PH: 800-868-9092

Founded in 1984 by Marilyn Burns, Math Solutions is dedicated to improving students' learning of mathematics by providing the highest-quality professional learning services and resources to educators. Over the past 30 years, Math Solutions has partnered with hundreds of schools and districts, focusing primarily on teachers' professional development and classroom instruction with on-site courses and coaching. Math Solutions also publishes more than 90 award-winning book and video resources.

## Math Teachers Press

**Booth: 201**  
Minneapolis, Minnesota  
PH: 800-852-2435  
[www.movingwithmath.com](http://www.movingwithmath.com)

The Moving with Math Learning Management System for Pre-K–12 offers a blended learning approach for RTI. Using the C-R-A Model (Concrete-Representational-Abstract), all lessons include embedded professional development, assessments to monitor and measure progress, and instructional strategies to easily differentiate instruction. Lessons and assessments are correlated to CCSS, NCTM, and state Standards. All programs are supported by scientific research and meet the needs of ELL and Special Education.

## McGraw-Hill Education/ ALEKS Corporation

**Booth: 209**  
Irvine, California  
PH: 714-245-7191-152

McGraw-Hill Education is proud to welcome ALEKS as the newest addition to the McGraw-Hill family! ALEKS offers an adaptive online math learning solution for grades 3–12. Backed by decades of research, ALEKS uses powerful artificial intelligence to precisely assess each student's knowledge and deliver personalized instruction on the topics each student is most ready to learn. ALEKS avoids multiple-choice for true mastery-based learning and is correlated to Common Core and state standards. McGraw-Hill offers CCSS-aligned pre-K–12 math curricula designed to support every classroom. In addition to ALEKS, other innovative programs from McGraw-Hill include Everyday Mathematics, The Geometer's Sketchpad, Tinker Plots, Number Worlds, Glencoe Math, and CINCH Learning.

## MIND Research Institute

**Booth: 318**  
Irvine, California  
PH: 888-751-5443  
[www.mindresearch.net/](http://www.mindresearch.net/)

MIND is a neuroscience and education nonprofit that applies its distinctive visual approach to the development of math instructional software. MIND helps local schools create a blended learning environment to create a culture of critical thinkers for the next generation of STEM leaders. MIND's ST Math® programs reach 500,000 students and 21,000 teachers in 1,780 schools.

## Mountain Math/Language, LLC

**Booth: 415**  
Ogden, Utah  
PH: 801-475-1963

Mountain Math/Language is the supplier of supplemental spiral review programs in math, language, science, and U.S. History. Products are available as bulletin boards, centers, games, and online. Common Core products also available.

## Music Notes

**Booth: 413**  
Long Beach, California  
PH: 310-916-8295  
[www.MusicNotesOnline.com](http://www.MusicNotesOnline.com)

Music Notes is an educational music company founded by two middle school teachers in Los Angeles. Our goal is to increase student engagement in school by providing high-quality educational songs and music videos to educators and their students. With over 200,000 views online, our Common Core–aligned songs and videos are sure to keep students rocking in their seats while remembering important math concepts.

## N

### Nasco

**Booth: 510**  
Fort Atkinson, Wisconsin  
PH: 920-563-2446  
[www.eNasco.com](http://www.eNasco.com)

Nasco is proud to supply innovative teaching methods, hands-on manipulatives, interactive whiteboard materials, and real-life problem-solving projects for elementary, middle school, and secondary math programs. We have products for the Common Core State Standards and STEM initiatives. Nasco can also provide custom kits to meet the individual needs of educators.

## National Council of Supervisors of Mathematics

**Booth: 505**  
Denver, Colorado  
PH: 303-758-9611

## Neufeld Learning Systems Inc

**Booth: 405**  
London, Ontario Canada  
PH: 519-657-9334 866-429-6284  
[www.neufeldlearning.com](http://www.neufeldlearning.com)

Neufeld Learning Systems provides browser-based technology solutions and customized professional development for reaching all learners and teachers of mathematics. UMATH X “goes deep” to address Common Core content with diagnostic tests for kindergarten to algebra 1. UMATH X provides strand specific assessments and student reports to guide instruction and next steps.

## O

### Origo Education, Inc.

**Booth: 500**  
Earth City, Missouri  
PH: 314-475-3061  
[www.origoeducation.com](http://www.origoeducation.com)

ORIGO provides a complete education solution to its customers by combining an innovative range of mathematics products with quality professional learning services. ORIGO Stepping Stones is a world-class mathematics program that seamlessly blends digital and print resources. ORIGO demonstrates a commitment to excellence by creating products that inspire and empower teachers and students.

## P

### Pearson

**Booth: 309**  
Upper Saddle River, New Jersey  
PH: 201-236-6613  
[www.PearsonK12.com](http://www.PearsonK12.com)

Pearson helps people make progress in their lives through personalized and connected learning solutions that are accessible, affordable, and achieve results. We focus on college-and-career readiness, digital learning, educator effectiveness, and research for innovation and efficacy. [www.PearsonK12.com](http://www.PearsonK12.com)

## Q

### Qwizdom, Inc.

**Booth: 218**  
Puyallup, Washington  
PH: 253-845-7738 877-794-9366  
[www.qwizdom.com](http://www.qwizdom.com)

Qwizdom maximizes learning outcomes by creating a fun and engaging environment with award-winning curriculum aligned to Common Core and state standards. District-wide reporting gives you instant, precise data at all levels, from school to teacher to student. Our solutions are easy to use and to implement because they grow with you, regardless of your technology landscape. Use with any web-enabled device or our low-cost student response systems.

## R

### Race 2 Achieve

**Booth: 513**  
Philadelphia, Pennsylvania  
PH: 267-437-3753  
[race2achieve.org](http://race2achieve.org)

Race 2 Achieve is a FREE Common Core-aligned supplemental curriculum that focuses on how NASCAR® team Hendrick Motorsports utilizes key concepts found in algebra II, and trigonometry in real-world scenarios. The curriculum is project-based and includes a complete and flexible toolkit. Sign up for your FREE kits at [race2achieve.org](http://race2achieve.org).

### Renaissance Learning

**Booth: 300**  
Wisconsin Rapids, Wisconsin  
PH: 715-424-3636  
[www.renlearn.com](http://www.renlearn.com)

Accelerated Math™ helps you give students personalized practice that is aligned to your textbook and linked to your state standards, ensuring math success. Plus, the software helps you easily manage the daily math activities of a wide range of students who are all working at their own levels and pace.

### Rhymes 'n' Times

**Booth: 511**  
Lewisville, Texas  
PH: 888-684-6376  
[www.rhymesntimes.com](http://www.rhymesntimes.com)

COMMOM CORE Times Tables in ONLY 3 WEEKS—Guaranteed! If class average isn't 90% on final test— 100% refund. Research-based—MULTI-SENSORY—meets ALL students' needs. RtI-optimized. No training! Also: Fishin' for Addition, Subtraction in Action, Divide 'n' Slide, ClockWise Fractions & Equivalency. See 3-minute videos: [www.rhymesntimes.com](http://www.rhymesntimes.com) and [www.clockwisemath.com](http://www.clockwisemath.com).

## S

### Scholastic

**Booth: 223**  
New York, New York  
PH: 212-965-7228  
[www.scholastic.com](http://www.scholastic.com)

Scholastic, the world's largest publisher and distributor of children's books and a leader in educational technology, has been a partner with America's schools for over 90 years. Our new math intervention program, MATH 180, launched this school year, is designed for struggling students in grades 6 and up. Using breakthrough technology, MATH 180 builds students' confidence and competence in mathematics, while providing teachers with an ecosystem of support to ensure success.

### Singapore Math Inc.

**Booth: 408**  
Oregon City, Oregon  
PH: 503-557-8100 888-419-4408  
[www.SingaporeMath.com](http://www.SingaporeMath.com)

Singapore Math Inc® is a company dedicated to bringing the highest-quality educational resources to the U.S. and Canada. These resources include a range of selected core curricula and supplemental math titles. We welcome you to come by Booth 408 to peruse our Singapore Math® books and learn more about the Singapore approach to teaching and learning mathematics.

# Exhibitor Directory

## T

### Texas Instruments, Inc.

Booth: 323

Dallas, Texas

PH: 800-842-2737 800-842-2737

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

Supporting each educator's vision of student success in math and science, TI's versatile education technology, curricular support materials and professional development can help enhance teaching and learning. The latest TI-Nspire™ CX handhelds and software go beyond traditional graphing capabilities. With the new wireless TI-Nspire™ Navigator™ system, educators can engage the entire class and instantly evaluate understanding.

### Think Through Math

Booth: 400

Pittsburgh, Pennsylvania

PH: 412-894-9935

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

Serving students in grades 3 through algebra I, TTM deepens understanding of critical math concepts and improves higher-order thinking and problem-solving skills. The program provides rigorous instruction and meaningful practice designed to accelerate the path to college and career readiness. From basic platform skills to algebra I, each student works through a personalized lesson pathway that reflects their unique needs as well as grade-level targets, according to the CCSS.

### Triumph Learning

Booth: 401

New York, New York

PH: 212-652-0207 800-338-6519

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

Triumph Learning is your #1 Common Core Supplemental Resource Solution for K–12. We are best known for great content, teacher-friendly formats, engaging activities, and low prices. TL is a leading provider of high quality, supplemental, instructional materials for the K–12 educational classroom for more than two decades. Our products are designed for supplemental, enrichment, or intervention strategies in the areas of core curriculum, enrichment curriculum, RTI and/or special education.

## V

### Valley Business Machines

Booth: 216

West Valley City, Utah

PH: 800-462-2019

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

Valley Business Machines is an Instructional Products Dealer for Texas Instruments Calculators, Navigator Systems, Software and related products. We offer very competitive pricing, and pride ourselves in excellent customer service. We distribute nationally, and have been servicing the education market since 1972. Please stop by our booth.

## W

### Walch Education

Booth: 418

Portland, Maine

PH: 800-341-6094

[walch.com](http://walch.com)

Walch Education extends and enhances learning with innovative, flexible solutions for middle school, high school, and beyond, addressing both Common Core and state standards. Walch is one of the leading publishers of Integrated Math courses for high school students, working in partnership with districts and states nationwide.

### Western Governors University

Booth: 303

Salt Lake City, Utah

PH: 801-290-3636 866-225-5948

[www.wgu.edu](http://www.wgu.edu)

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



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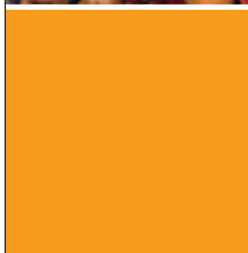
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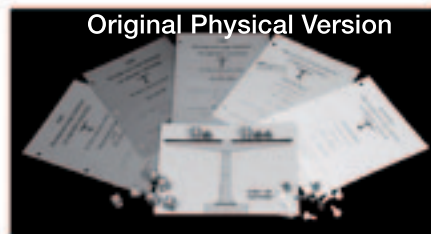
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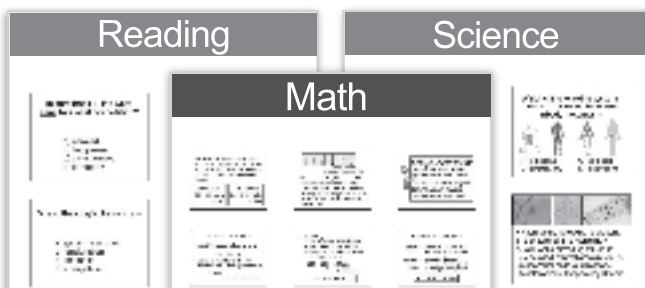
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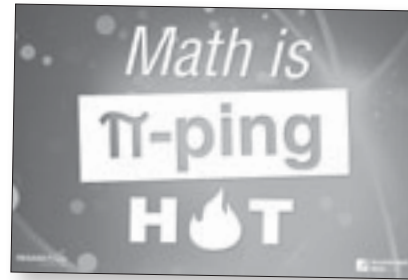
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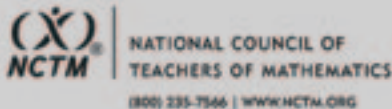
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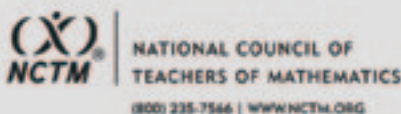


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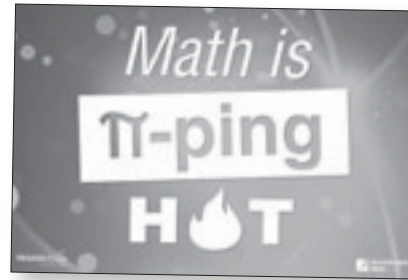
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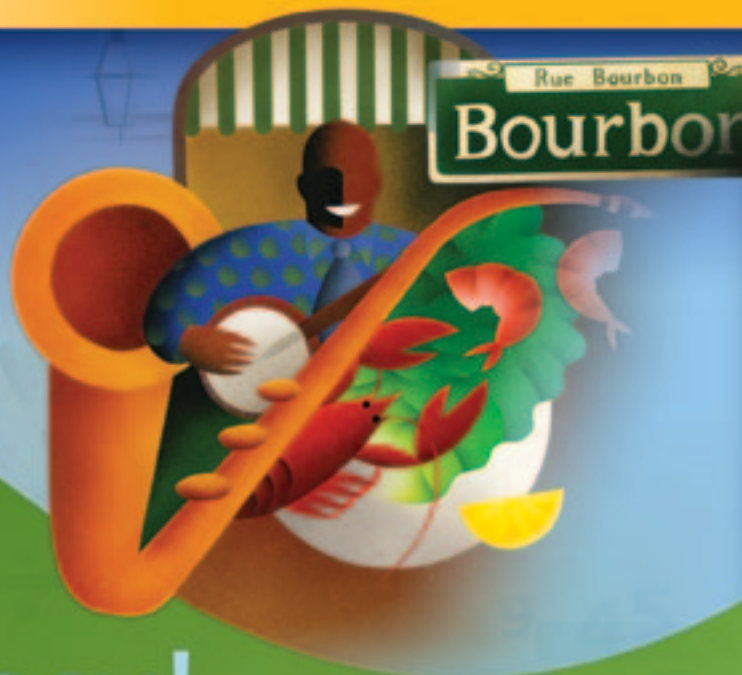


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