

# NCTM 2011

INDIANAPOLIS, IN  
APRIL 13-16, 2011

## Annual Meeting & Exposition

Geometry: Constructing and Transforming Perspectives

# PROGRAM BOOK



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of the program



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TEACHERS OF MATHEMATICS

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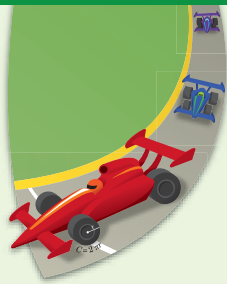


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# NCTM 2011 ANNUAL MEETING & EXPOSITION



INDIANAPOLIS, INDIANA  
APRIL 13–16, 2011

Geometry: Constructing and Transforming Perspectives

## HOST

Indiana Council of Teachers of Mathematics

## MEETING FACILITIES

All Annual Meeting presentations will be held at the Indiana Convention Center, the Indianapolis Marriott Downtown, and the JW Marriott Indianapolis. See pages 181–184 for floor plans.

## REGISTRATION AREA

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

## EXHIBITS AND CALCULATION NATION®

Thursday	8:30 a.m. – 5:00 p.m.
Friday	8:30 a.m. – 5:00 p.m.
Saturday	9:00 a.m. – 12:00 noon

## BOOKSTORE AND MEMBER SHOWCASE

Wednesday	10:00 a.m. – 7:00 p.m.
Thursday	7:00 a.m. – 5:30 p.m.
Friday	7:30 a.m. – 5:30 p.m.
Saturday	8:30 a.m. – 12:00 noon

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





# Welcome to Indianapolis!

Now that all the advance work and planning are finished, it's time to welcome you to the biggest and best professional development opportunity and event of the year. This is the largest annual gathering of mathematics educators in the world. The NCTM 2011 Annual Meeting and Exposition brings together outstanding classroom teachers, mathematics educators, and mathematicians to enrich one another and to exchange ideas, all in support of helping every student learn challenging mathematics. After your experience here, we hope you'll go back to your classroom and colleagues reinvigorated with new ideas and fresh perspectives on what you can do every day to help all students learn and how to inspire them for future success.

If this is your first NCTM annual meeting, you're in for a real treat, though you might also want to brace yourself for a dose of professional overload. The first time we went to an annual meeting, we didn't really know what to expect. What we found was the most exciting, professionally exhilarating experience of our careers. We know many of you first-timers are in for a similar thrill. Over the next three days, you'll have extraordinary opportunities to meet new colleagues and to form professional and personal bonds that can last a lifetime.

For you veterans of NCTM annual and regional conferences, you have some idea of what you'll experience over the next three days. There

may, however, be some surprises, because we always strive to improve each year's conference. Our theme at the Indianapolis meeting is, "Geometry: Constructing and Transforming Perspectives," which is also NCTM's focus of the year. You'll find a wealth of other topics and content areas among the more than 700 sessions. We've worked hard to put together sessions that challenge you to examine your own teaching within the context of connecting concepts and context, encouraging you to put reasoning and sense making at the core of whatever you teach.

While you are here you should also get out and enjoy Indianapolis. Part of an NCTM conference's enrichment is getting out with friends and mixing pleasure with what you'll experience at the meeting sessions. While in Indianapolis, you can visit the NCAA Hall of Champions, the Indianapolis Museum of Art, or take a stroll along the beautiful Canal Walk. You can also visit the Brickyard and the Indianapolis Motor Speedway, the site of the annual Indianapolis 500 race.

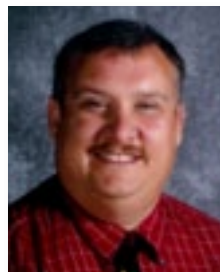
On behalf of the NCTM's Board of Directors, Program and Local Arrangements committees, staff, and the many volunteers who have worked long, countless hours over the past two years to put together an extraordinary set of opportunities for you—Welcome to Indianapolis.



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



**Cindy Bryant**  
Program Chair  
Missouri Department of  
Elementary and Secondary  
Education, Marshfield, Missouri



**William R. Reed**  
Local Arrangements  
Committee Chair  
Indianapolis, Indiana



**Kichoon Yang**  
Executive Director, National  
Council of Teachers of  
Mathematics



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# Program Information



The 2011 NCTM Annual Meeting and Exposition officially begins with the Opening Session, starting at 5:30 p.m. on Wednesday, April 13, in Hall F at the Indiana Convention Center. Presentations on Thursday, Friday, and Saturday begin at 8:00 a.m. each day and are scheduled concurrently throughout the day.

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

Please remember:

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

## Learn↔Reflect Strand

### Geometry: Constructing and Transforming Perspectives

Thursday, April 14

Plan one full day for the Focus of the Year topic, “Geometry: Constructing and Transforming Perspectives.” The strand begins with a morning Kickoff session and concludes with a Reflection session. In between, you can choose from a variety of presentations covering the topic, all marked with the symbol **LOR**. Immerse yourself in the Focus of the Year, 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.
- What role do multiple representations and communication play in developing students’ conceptual understanding of geometry concepts?
- From your perspective, what is geometric reasoning? How can you promote that thinking in your students?
- How can you create classroom learning experiences to develop geometric concepts that attend to the diversity of your students?
- How are you thinking differently about your learning and teaching of geometry as a result of participating in the Learn↔Reflect sessions?

Learn↔Reflect sessions are open for anyone to attend throughout the day. Personalized certificates will be prepared for those attendees who attend the Kickoff session, at least one Learn↔Reflect session during the day, and the final Reflection session.


## New Teacher Strand

Friday, April 15

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

Look for this symbol, **NT**, for presentations within the strand. Start early with the New Teacher Kickoff (#264) on Thursday at 3:00 p.m. and come celebrate on Friday at 4:45 p.m. for more fun. Visit [www.nctm.org/newteacher](http://www.nctm.org/newteacher) for more information.

## NCTM Committee Presentations

NCTM committee presentations are identified by the symbol . For a list of all NCTM committees, please visit [www.nctm.org](http://www.nctm.org).

## Equity Strand

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

## Mathematical Association Presidents’ Series

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

## New Member and First Timers’ Orientation

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

### Wednesday

Presentation #1  
4:00 p.m.–4:30 p.m.  
500 Ballroom (Convention Center)

### Thursday

Presentation #3  
7:15 a.m.–7:45 a.m.  
500 Ballroom (Convention Center)

# 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 audiovisual equipment, technology, and handouts, and he or she may include audience participation. Rooms are set theatre style and vary in size.

**Research Sessions** (60 minutes) emphasize the connection between research and practice, presented in a common format where the speaker relates his or her ideas to an audience. The speaker may use audiovisual 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 115 people. Exhibitors showcase their products and services away from the Exhibit Hall. Look for the symbol **ew** indicating exhibitor workshops in the program book.

## Grade Bands

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

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

## On-Site Daily News

Start each morning with the *NCTM Daily News*, which will include late-breaking news about the 2011 NCTM Annual Meeting and Exposition. Program or speaker changes and cancellations will be listed as well. The *Daily News* will be distributed in the lobby of the Indiana Convention Center and available in the Indianapolis Marriott Downtown and the JW Marriott Indianapolis.

## Tips for a Rewarding Annual Meeting and Exposition

- Become familiar with the layout of the Indiana Convention Center, Indianapolis Marriott Downtown, and the JW Marriott Indianapolis by reviewing the floor plans on pages 181–184.
- Visit the NCTM Bookstore for the latest NCTM educational resources, and the Member Showcase, where you can learn more about how NCTM can help you professionally and pick up free resources.
- Stop by the Information Booth for information on the local Indianapolis, Indiana area.
- If attending the conference with colleagues, attend different presentations and share your learned knowledge after the conference.
- Turn off cell phones and pagers during presentations.
- Visit the Exhibit Hall, where more than 200 exhibitors will share the latest educational products.
- The more you participate in the presentations, the more you will get out of the conference.
- Tell us about your conference experience by filling out the post-conference online survey.
- Be safe! Remove your name badge when you leave the conference facilities at the end of the day.



### Opening Minds and Doors.

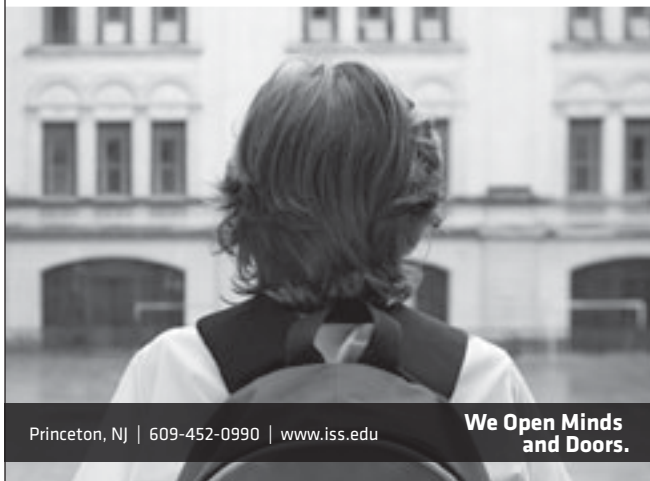
Since 1955, ISS has been dedicated to supporting international schools as they provide their students with a world-class education.

We have sought to advance the quality of education worldwide by delivering comprehensive services and innovative solutions for learning communities.

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### Upcoming ISS Events

Fairfax IRC: June 10–12, 2011 | IB Workshop: July 6–8, 2011  
Bangkok IRC: January 2012 | Boston IRC: February 2012



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We Open Minds  
and Doors.

# UNCOMMON WISDOM FOR IMPLEMENTING THE COMMON CORE STATE STANDARDS

WEDNESDAY



Problem solving, real-world applications, conceptual understanding, and mathematics as sense making are central to the Common Core State Standards and at the heart of our curriculum, software, and professional development.

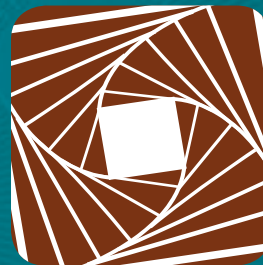
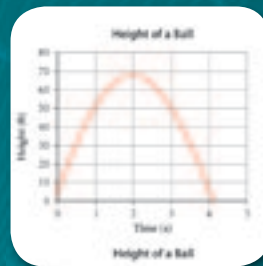


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# UNCOMMON WISDOM FOR IMPLEMENTING THE COMMON CORE STATE STANDARDS



*MATHEMATICALLY PROFICIENT STUDENTS... Make sense of problems and persevere in solving them... Reason abstractly and quantitatively... Construct viable arguments and critique the reasoning of others... Model with mathematics... Use appropriate tools strategically... Attend to precision... Look for and make use of structure... Look for and express regularity in repeated reasoning.*



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**EMBRACING THESE CORE VALUES FOR 40 YEARS.**

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# Planner Wednesday

WEDNESDAY

5:00	
5:30	
6:00	
6:30	
7:00	

## HIGHLIGHTS

Opening Session (Presentation 2): *Flatland: The Power of Story in Mathematics*



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### Registration Hours

8:00 a.m.–7:00 p.m.

### Bookstore and Member

### Showcase Hours

10:00 a.m.–7:00 p.m.

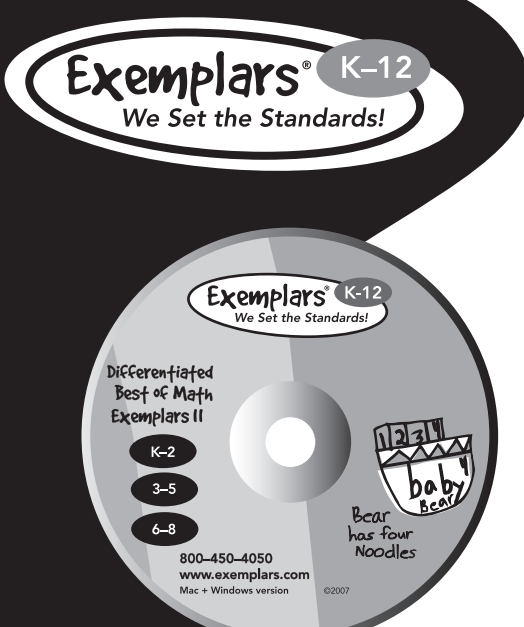
### Fire Codes

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

## Regional Caucuses for Delegates and Alternates

Caucus	Location	Presiders
Canadian Caucus 2:00 p.m.—4:00 p.m.	107 (Convention Center)	Rita Janes, Educational Solutions, St. John's, Newfoundland
Central Caucus 2:00 p.m.—4:00 p.m.	101/102 (Convention Center)	Bethany Noblitt, Northern Kentucky University, Highland Heights, Kentucky Chris Moody, Clayton High School, Saint Louis, Missouri
Eastern Caucus 2:00 p.m.—4:00 p.m.	103/104 (Convention Center)	Nancy Zarach, Syracuse City School District (Retired), Syracuse, New York Neil Cooperman, Millburn High School, Millburn, New Jersey
Southern Caucus 2:00 p.m.—4:00 p.m.	105/106 (Convention Center)	Desha L. Williams, Kennesaw State University, Kennesaw, Georgia Vanessa Cleaver, Little Rock School District, Little Rock, Arkansas
Western Caucus 7:30 p.m.—9:30 p.m.	105/106 (Convention Center)	Lisa Scott, Billings Public Schools, Billings, Montana Sandy Christie, Puget Sound Educational Service District, Renton, Washington
Affiliates-at-Large Caucus 2:00 p.m.—4:00 p.m.	108 (Convention Center)	Anne Collins, Lesley University—School of Education, Cambridge, Massachusetts

WEDNESDAY



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Aligned to State, NCTM and Common Core Standards

### Promote Reasoning and Communication in Mathematics

- Open-ended problem-solving tasks **engage** students and promote reasoning and communication.
- **Differentiated** performance material enriches assessment and instruction in traditional classrooms, Title I, gifted and talented or RTI programs.
- **Rubrics** and **anchor papers** provide both teachers and students with guidelines and concrete examples of work that meets the standard (and why).
- Student rubrics encourage **self-** and **peer-assessment**.

1 2 3  
four

**NCTM  
Booth #416**



4:00 P.M.–4:30 P.M.

**1****New Member and First Timers' Orientation****(General Interest) Session**

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

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

**500 Ballroom (Convention Center)**

5:30 P.M.–7:00 P.M.

**2****Flatland: The Power of Story in Mathematics****Opening Session by Jeffrey Travis****Remarks by NCTM President J. Michael Shaugnessy**

*Flatland*, a classic novel from 1884, is a story about A. Square, an inhabitant of a two-dimensional world who visits other dimensions. Jeffrey Travis, director of the new IMAX 3-D movie *Flatland: The Movie*, will show clips from the movie and discuss the power of story-telling in mathematics and in geometry in particular.

Travis is a writer and award-winning film director who took an unusual path to his profession. He originally studied electrical and biomedical engineering at the University of Texas at Austin. Later, he wrote three textbooks on visual programming and applying the visual medium of film to some of his short stories. In 2004, Travis partnered with producer Seth Caplan and animation guru and codirector Dano Johnson to adapt the novel *Flatland* to the big screen. Travis had read the book in high school and loved the idea of attempting a retelling of the story in animated media. In 2006, the film was released on DVD, to the delight of math fans and teachers worldwide. He continues to write and direct and has two feature film projects in development.

**Jeffrey Travis**  
Flat World Productions, Los Angeles, California

**Dano Johnson**  
Flat World Productions, Austin, Texas

**Seth Caplan**  
Flat World Productions, Los Angeles, California

This session is sponsored by DYMO/Mimio.

**Hall F (Convention Center)**

# STOP BY

THE MEMBER SHOWCASE AT  
NCTM'S 2011 ANNUAL MEETING AND EXPOSITION

APRIL 13-16  
INDIANAPOLIS, INDIANA

## for Free Stuff (and learn something, too!)

The editors from NCTM's *Teaching Children Mathematics*, *Mathematics Teaching in the Middle School*, and *Mathematics Teacher* will be loaded with giveaways! You'll also find a plethora of free professional development opportunities. Inside of 15 minutes, you'll discover how to write for the journals, submit your ideas for publication, or volunteer as a referee. The editors will explain the peer review process, answer your questions, point you in the right direction, and allay any fears you may have about getting started. All for a price that can't be beat!

### Here's what's going on:

#### Be a Journal Referee

Find out how critiquing manuscripts can help your career and the NCTM journals.

#### Writing Pitfalls

Learn hints on steering clear of those pesky manuscript pot holes.

#### Share It

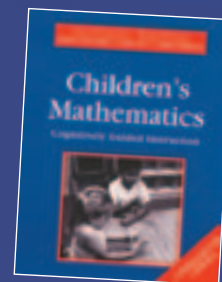
It's easy to get your ideas published in the NCTM school journals. Find out how.

	Thursday, April 14	Friday, April 15
11:00–11:15	<b>Be a Journal Referee</b> Albert Goetz, <i>MT</i> Editor	<b>Share It</b> Sara-Lynn Gopalkrishna, <i>MTMS</i> Editor
11:30–11:45	<b>Common Writing Pitfalls</b> Beth Skipper, <i>TCM</i> Editor	<b>Be a Journal Referee</b> Albert Goetz, <i>MT</i> Editor
12:00–12:15	<b>Share It</b> Sara-Lynn Gopalkrishna, <i>MTMS</i> Editor	<b>Common Writing Pitfalls</b> Beth Skipper, <i>TCM</i> Editor
12:30–12:45	<b>Be a Journal Referee</b> Albert Goetz, <i>MT</i> Editor	<b>Share It</b> Sara-Lynn Gopalkrishna, <i>MTMS</i> Editor
1:00–1:15	<b>Common Writing Pitfalls</b> Beth Skipper, <i>TCM</i> Editor	<b>Be a Journal Referee</b> Albert Goetz, <i>MT</i> Editor
1:30–1:45	<b>Share It</b> Sara-Lynn Gopalkrishna, <i>MTMS</i> Editor	<b>Common Writing Pitfalls</b> Beth Skipper, <i>TCM</i> Editor

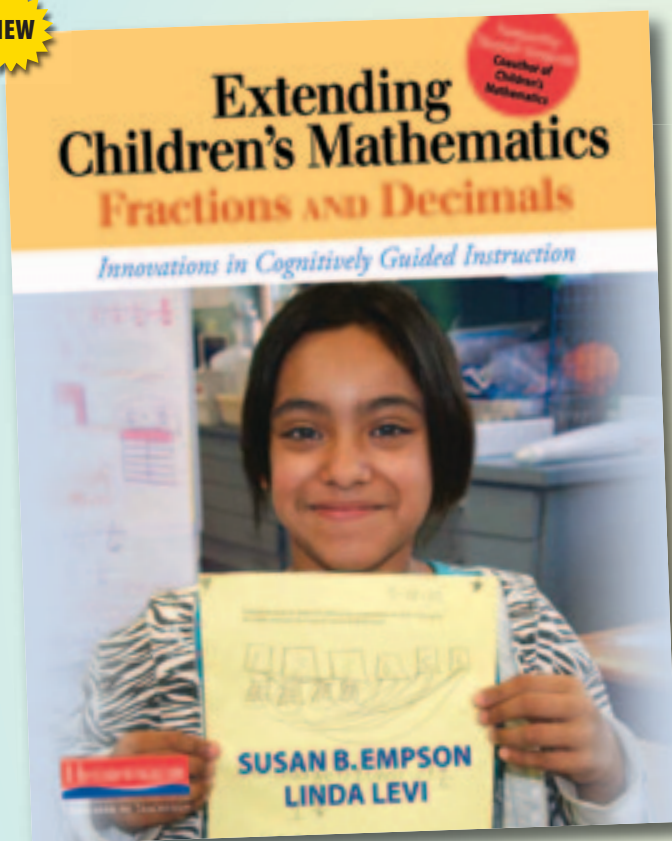


NATIONAL COUNCIL OF  
TEACHERS OF MATHEMATICS

# From the authors of the **bestselling** *Children's Mathematics*



**NEW**



*“With the collaboration of a number of dedicated teachers and their students, Susan Empson and Linda Levi have produced a volume that is faithful to the basic principles of CGI while at the same time covering new ground with insight and innovation.”*

—**Thomas P. Carpenter**  
coauthor of *Children's Mathematics*

Grades 1–6 / 978-0-325-03053-1 / 2011 / 240pp est. / \$24.00 est.

**H**einemann's top-selling math title *Children's Mathematics: Cognitively Guided Instruction* has helped tens of thousands of teachers understand children's intuitive problem solving and computational skills. In this highly anticipated follow-up volume, **Susan B. Empson** and **Linda Levi** address the urgent need to help teachers understand and teach fraction concepts.

With illuminating examples of student work, classroom vignettes, “Teacher Commentaries” from the field, sample problems and instructional guides provided in each chapter, *Extending Children's Mathematics* gives you all the tools you need to teach fractions and decimals with understanding and confidence.

Learn more at the **Heinemann booth**

OR VISIT **www.Heinemann.com**

**Heinemann**  
DEDICATED TO TEACHERS

THURSDAY



SCHOLASTIC

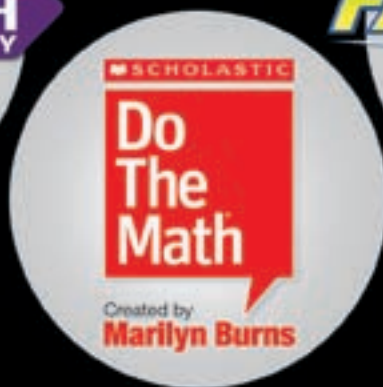
# Math INTERVENTION

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Presentations every hour. Spectacular prizes!



[www.scholastic.com/mathintervention](http://www.scholastic.com/mathintervention)

THURSDAY

# Planner Thursday

THURSDAY

8:00	
8:30	
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4:00	
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5:00	

 New Teacher Strand     Learn↔Reflect Strand     Exhibitor Workshop     NCTM Committee Presentations

## HIGHLIGHTS

62nd Annual Delegate Assembly (Presentation 4)  
Learn↔Reflect Kickoff Session (Presentation 63)  
New Teacher Workshop and Kickoff (Presentation 264)  
Learn↔Reflect Reflection Session (Presentation 264.1)  
NCTM President's Address (Presentation 296)

### Registration Hours

7:00 a.m.–4:00 p.m.

### Exhibits and Calculation Nation® Hours

8:30 a.m.–5:00 p.m.

### Bookstore and Member Showcase Hours

7:00 a.m.–5:30 p.m.

### Fire Codes

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7:15 A.M.–7:45 A.M.

**3**

### **New Member and First Timers' Orientation**

**(General Interest) Session**

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

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

**500 Ballroom (Convention Center)**

7:30 A.M.–9:00 A.M.



**4**

### **62nd Annual Delegate Assembly**

**(General Interest) Session**

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

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

**Grand Ballroom VI (JW Marriott)**

8:00 A.M.–9:00 A.M.

**5**

### **American School Mathematics in Colonial Times: 1701–1783**

**(General Interest) Research Session**

Attendees will actively participate in a “ciphering session” illustrating problem-based and individual learning. The following questions provide the foci: 1. Where, when, how, and by whom were the ciphering manuscripts prepared? 2. What theoretical base encapsulated their educational purposes? 3. What were their educational advantages and disadvantages?

Nerida F. Ellerton  
Illinois State University, Normal

McKenzie A. Clements  
Illinois State University, Normal

**White River Ballroom C/D (JW Marriott)**

**6**

### **Building Geometric Understanding with the Buildings of Frank Lloyd Wright**

**(General Interest) Session**

Frank Lloyd Wright, America's greatest architect, said, “Geometry is the grammar of a building.” Through a very visual presentation, learn how Wright used mathematics to change the shape and direction of architecture. Show students how geometry is alive and at work in the constructed environment. See how math inspired Wright's designs from a young age.

Mary Wiltjer  
Glenbrook South High School, Glenview, Illinois

**Marriott Ballroom 6 (Marriott Downtown)**

**7**

### **College Entrance Exams: Mathematics Expectations in Korea**

**(General Interest) Session**

This presentation will show the objectives, characteristics, and examples from the mathematics portion of the Korean college entrance examination. The examples presented will illustrate what mathematical concepts, skills, and problem-solving methods Korean students need to know in preparation for high-stakes testing.

Dae S. Hong  
Hostos Community College, Bronx, New York

Kyong Mi Choi  
University of Iowa, Iowa City

**Wabash Ballroom 1 (Convention Center)**

**8**

### **The Housekeeper and the Professor: Mathematics with Fiction and Film**

**(General Interest) Session**

*The Housekeeper and the Professor*, a novel by Yoko Ogawa, and *The Professor's Most Beloved Equation*, a movie based on the book, both tell a touching story about memory, family, and a boy with a flat head named Root who grows up to be a math teacher. This presentation will appeal to teachers wanting to use fiction and film to teach algebra and geometry.

Ron Lancaster  
Ontario Institute for Studies in Education, University of  
Toronto, Canada

**Hall F (Convention Center)**



8:00 A.M.–9:00 A.M.

9

### KenKen: A Logical Marriage between SuDoku and Arithmetic

(General Interest) Session

Invented by a Japanese mathematics teacher, the KenKen puzzle adds another layer of challenge to the traditional SuDoku puzzle by combining it with arithmetic operations to complete the grid. KenKen rules are simple, so that young learners can pick them up quickly, and the puzzles will challenge their logical thinking. You will become addicted to KenKen.

Pamela D. Martin  
University of Louisiana at Monroe

Kathie O. Smart  
University of Louisiana at Monroe

**Sagamore Ballroom 2 (Convention Center)**

10

### Response to Intervention: Linking Assessment to Effective Mathematics Instruction

(General Interest) Session

This presentation will focus on how several schools have successfully implemented a three-tiered instructional model for mathematics instruction. Experienced teachers will share how they have used diagnostic maps and tasks to identify students' mathematical development quickly and plan teaching specific to the needs of each student.

Christine Lyons  
STEPS Professional Development, Norwell, Massachusetts

**Grand Ballroom III (JW Marriott)**

11

### Teachers as Generators of Knowledge in Transformational Learning Communities

(General Interest) Session

Why do some professional learning communities soar whereas others flounder? Hear from two groups of teachers who have taken their teaching and assessment practices to new heights by creating self-sustaining, generative, transformational professional learning communities. Come hear what organizational structures allowed these teacher networks to thrive.

Sarah Koebley  
Kent State University, Ohio

Sharon Nivert  
Hudson City School District, Ohio

Wendy Dennis  
Hudson City School District, Ohio

**125 (Convention Center)**

12

### You Don't Have to Be a Magician, But It Helps!

(General Interest) Session

Step right up! Enter the wonderful world of math magic. See enthusiastic teaching modeled and math presented in a spirit of play with activities that motivate students to become active learners. Experience the beauty and fun of mathematics!

Charles B. Sonenshein  
Wright State University, Dayton, Ohio

**Grand Ballroom V (JW Marriott)**

13

### Enhanced Math Learning through the Arts

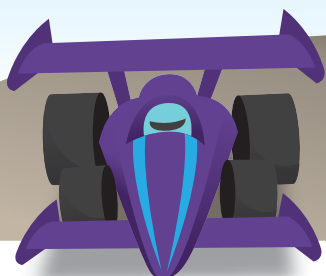
(PreK–2) Session

Make learning fun through the magic of storybooks and the arts. Discover how books, visual arts, drama, and dance can help the four-to-five-year-olds learn and grow mathematically.

Sheryl Johnson  
Houghton Mifflin Harcourt Publishers, Austin, Texas

**120 (Convention Center)**

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



THURSDAY

8:00 A.M.–9:00 A.M.

**14**

### **Making Addition and Subtraction Concepts Meaningful**

*(PreK–2) Session*

How do we help children develop deep understanding of addition and subtraction concepts and their related number facts? These mathematical ideas require children to move away gradually from the concrete objects in the real world to more abstract representation. Language is the bridge for this support, using stories, pictorial representation, and guides to the sequence of development for number facts.

Rosemary Reuille Irons  
Queensland University of Technology, Brisbane, Australia

**Wabash Ballroom 3 (Convention Center)**

**15**

### **What Babies and Brain Science Say about Elementary School Mathematics**

*(PreK–2) Session*

Babies know more than you think! Elements of number, arithmetic, symmetry, transformations, probability, and even algebra are built in or develop in early childhood. You'll learn some of what's known and how it has been discovered, and you'll see ways it can affect teaching and learning up through the grades. These discoveries have enormous equity implications.

E. Paul Goldenberg  
Education Development Center, Newton, Massachusetts

Cindy Carter  
Rashi School, Dedham, Massachusetts

**Sagamore Ballroom 6 (Convention Center)**

**16**

### **Guided Math: How? Why?**

*(PreK–5) Session*

This interactive session will demonstrate the benefits of Guided Math as a tool to differentiate mathematics instruction. Participants will learn how to create and facilitate a Guided Math classroom. Video clips will be shown to illustrate techniques. Teachers will explore preassessment, center ideas, and summative assessment.

Sharonda Kali  
Chicago Public Schools, Illinois

Latoya Williams  
Chicago Public Schools, Illinois

Anna J. Thomas  
Chicago Public Schools, Illinois

**White River Ballroom F (JW Marriott)**

**17**

### **Effective Methods for Developing Math Fact Fluency**

*(3–5) Session*

How are math facts mastered? Which methods promote automaticity across a broad range of students? See the latest results of ongoing research into fact fluency and how students attain it over time, based on longitudinal performance data being continuously collected by an online research platform developed under National Science Foundation grants.

Paul Cholmsky  
ExploreLearning, Charlottesville, Virginia

**Grand Ballroom X (JW Marriott)**

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8:00 A.M.–9:00 A.M.

## 18

### **Building Algebraic Reasoning: Research-Based Activities for a Strong Foundation**

#### **(3–8) Session**

Do you know that the subtleties of the arithmetic content you teach can dramatically, and sometimes negatively, affect your students' ability to transition to algebra? Come learn common algebraic misconceptions, research-based strategies, and activities that you can use to build students' algebraic understanding while teaching arithmetic.

Rachael M. Welder  
City University of New York—Hunter College, New York

Christine L. Latulippe  
California State Polytechnic University Pomona

**140 (Convention Center)**

## 19

### **Collaboration, Coteaching, and Coaching Narrows Gaps in a Multicultural District**

#### **(3–8) Session**

Building grade-level content for English language learners is a considerable challenge. This presentation will offer an inside look at a promising new curriculum and professional development initiative under way in a multicultural school district. Find out how to team with content teachers, and leave with tools to start your own initiatives.

Patricia Aube  
Fitchburg Public Schools, Massachusetts

Bonnie Baer-Simahk  
Fitchburg Public Schools, Massachusetts

**Grand Ballroom I (JW Marriott)**

## 20

### **Ruling the Ruler: Understanding Units and Measuring**

#### **(3–8) Session**

Why do students “forget” to line up an object with the zero mark on the ruler? Simply reminding students does not deal with the basic conceptual problem. Explore content, pedagogy, and diagnostics that guide teachers in building a strong foundation for using calibrated scales like rulers, protractors, measuring jugs, and more.

Debi DePaul  
STEPS Professional Development, Norwell, Massachusetts

**107/108 (Convention Center)**

## 21

### **Geometry as a Vehicle, Not a Destination**

#### **(6–8) Session**

Explore how students can make sense aspects of number and algebra through geometry. The discussion will include how students use models of length, to explore positive and negative numbers and the order of operations; the area of trapezoids, to explore equivalent expressions and the order of operations; and rigid transformations, to study integer operations and expressions of generalized patterns.

Stephanie Whitney  
Illinois Institute of Technology, Chicago

Josea Eggink  
El Colegio Charter School, Minneapolis, Minnesota

**109/110 (Convention Center)**

## 22

### **Teaching Fractions Division Can Be Easier**

#### **(6–8) Session**

This presentation will reveal type 1, 2, 3, and 4 division problems of fractions. The speakers will demonstrate how to integrate model-strategy-application and mathematical habits of mind into the teaching processes, so participants can help their students learn fractions division effectively.

Hsing-Wen Hu  
University of Wisconsin—River Falls

Cheng-Yao Lin  
Southern Illinois University Carbondale

**207 (Convention Center)**

THURSDAY



8:00 A.M.–9:00 A.M.

**23**

### Use Conjectures to Reason and Connect Geometry, Algebra, and Number

(6–8) Session

Conjectures are an important component of the problem-solving process. They are a natural consequence of studying various forms of patterns and should be an integral part of instructional practice. This presentation will feature ways to create and use conjectures and numerous settings in which to generate conjectures.

Margaret J. Kenney  
Boston College, Chestnut Hill, Massachusetts

**Marriott Ballroom 3/4 (Marriott Downtown)**

**24**

### Data Analysis? How about Graphical Analysis?

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

Most of us teach data analysis, usually by looking at a data set and computing descriptive statistics or creating graphs. This session will take a backward approach: we will start with graphs and discuss the possible data sets that could have created the graphs. Come see how these activities can help your students understand statistics better.

Sharon E. Taylor  
Georgia Southern University, Statesboro

Michael Grasse  
Elk Grove High School, Illinois

**White River Ballroom G/H (JW Marriott)**

**25**

### Helping All Students Gain Mathematical Understanding through Geometric Reasoning

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

Guided by *Principles and Standards*, NCTM's *Focal Points*, and students' work, this session will enable teachers to frame questions that will help students with varied experiences and mathematical knowledge use geometric thinking to gain deep understanding of mathematical concepts and make sense of the mathematics they are learning.

Carol E. Malloy  
McGraw-Hill K–12 Mathematics, Columbus, Ohio

**Sagamore Ballroom 4 (Convention Center)**

**26**

### Bouncing Balls, Tuning Forks, and Dinner Tables Equals Well-Rounded Kids

(6–12) Session

Why are they so well rounded? Because of round tables! Learn about how one New York City school has restructured its math department around authentic assessments. These include project-based learning, grades 6–12 math portfolios based on NCTM Standards, and round-table presentations where students defend their knowledge. Classroom-ready materials will be available.

Mohammed Aminyar  
East Side Community High School, New York, New York

Audrey Federman  
East Side Community High School, New York, New York

**201/202 (Convention Center)**

**27**

### How Many Gears Does My Bicycle Really Have?

(6–12) Session

Bicycles are advertised as having ten, fifteen, or even 21 speeds, but do these bikes really have that many? Come shift some gears and learn how this problem helps middle school children develop their proportional-reasoning skills by applying them to a familiar situation. The speaker will share activity guides and students' work.

Terry Wyberg  
University of Minnesota—Twin Cities, Minneapolis

**111/112 (Convention Center)**

**28**

### Solving Problems: Unlocking Potential

(6–12) Session

Best practices indicate that students learn and understand mathematics better when taught concepts in context. This session will address ways teachers can motivate and help students make mathematical connections, leading their students to greater understanding and overall mathematical confidence.

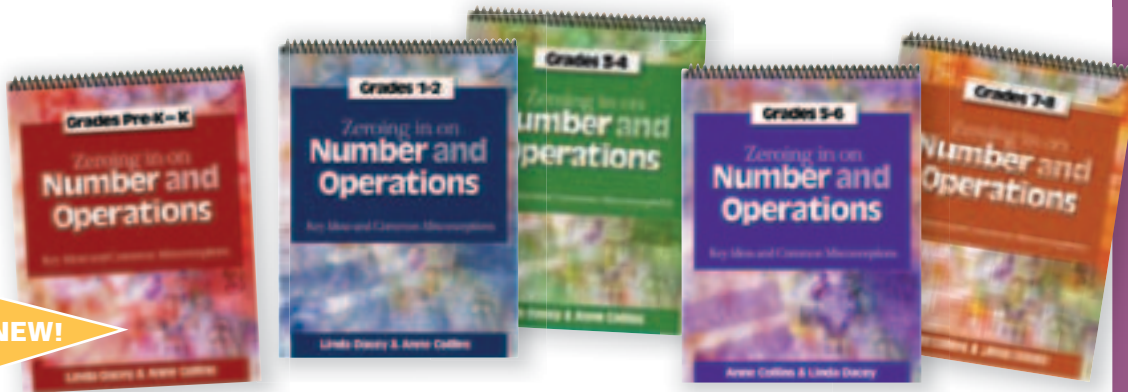
John Neral  
District of Columbia Public Schools, Washington, D.C.

**143 (Convention Center)**

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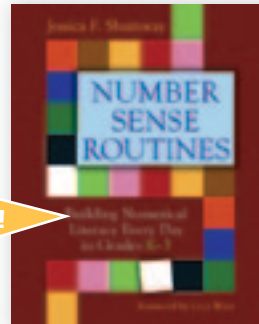
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**29**

### All Algebra, All the Time: Using Netbooks in Algebra 1

(9–12) Session

The speakers issued netbooks to their Algebra 1 students, and then modified their instruction to take advantage of the technology. They will describe their project, include examples of what they have done and how they have changed, comment on students' accomplishments, and offer suggestions to others considering such technology.

Roger Day  
Glencoe/McGraw-Hill Mathematics, Pontiac, Illinois

Tami S. Martin  
Illinois State University, Normal

Ashley Thurnau  
Pontiac Township High School, Illinois

**123 (Convention Center)**

**30**

### Geometric Modeling and Spatial Reasoning for Capstone Mathematics

(9–12) Session

This talk will focus on representing, measuring, and transforming three-dimensional objects and fractals and using these mathematical objects to make predictions about actual situations and solve problems. The tasks presented are ones that seniors have found engaging in a post-Algebra 2 alternative to precalculus.

Gregory D. Foley  
Ohio University, Athens

**128 (Convention Center)**

**31**

### Get Girls Excited about Diverse Math-Based Careers

(9–12) Session

Be an advocate for your female students by sparking their interest in math-related careers. Participants will learn about research-based messages, images, and methods that excite and engage girls with engineering and technology. They will receive strategies for integrating these resources into math curricula.

Ellen Robinson  
WGBH Educational Foundation, Boston, Massachusetts

Shyno Chacko Pandeya  
WGBH Educational Foundation, Boston, Massachusetts

**500 Ballroom (Convention Center)**

**32**

### Go with the Flow: Describing Storm Water Runoff Using Derivatives

(9–12) Session

Interested in hands-on, cooperative learning lessons for calculus? In this lesson, developed with the University of Cincinnati, students discover how engineers use derivatives to solve real-world problems by measuring storm water runoff volume. Attendees will use derivative graphs to discover differences in rates of change of water runoff.

Brad Hunt  
Norwood City Schools, Ohio

Sara Garrison  
Norwood City Schools, Ohio

**Grand Ballroom VIII (JW Marriott)**

**33**

### Promoting Reasoning and Sense Making through 3-D Geometry Explorations

(9–12) Session

Participants will engage in tasks that promote students' development of reasoning and sense making, focusing on 3-D geometry explorations. Participants will learn about how to increase reasoning opportunities through geometry explorations, as presented in the geometry topic book that supports NCTM's *Focus in High School Mathematics* document.

Sharon McCrone  
University of New Hampshire, Durham

James King  
University of Washington, Seattle

**103/104 (Convention Center)**

**34**

### Transforming High School Mathematics Using Transformations

(9–12) Session

Investigate how transformations can be used as a unifying theme across the high school mathematics curriculum. Discuss and reflect how to introduce transformations effectively in both algebraic and geometric instruction. Discover how to use transformations as a connecting thread across mathematics courses.

Richard Parr  
Rice University, Houston, Texas

**101/102 (JW Marriott)**



8:00 A.M.–9:00 A.M.

**35**

**Differentiating for Gifted Students in the Secondary School Classroom**

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

Acceleration, independent study, or an Advanced Placement or International Baccalaureate program are not the only options for meeting the needs of gifted math students in high school. A standard curriculum's potential for enrichment can challenge gifted students and develop their intellects more deeply than shoving them along to the next course would.

Craig Russell  
University of Illinois Laboratory High School, Urbana

**Marriott Ballroom 9/10 (Marriott Downtown)**

**36**

**How Children Learn Math: Knowledge That Makes a Difference**

*(Higher Education, Preservice and In-Service) Session*

How do children learn mathematics? Can this knowledge help preservice teachers learn mathematics, and in learning, help them teach mathematics? Can teachers use this knowledge? The speakers will present their research, which attempts to answer these questions. They will also provide multiple illustrations of how children learn mathematics that participants can use in their teaching.

Keith E. Schwingendorf  
Purdue University North Central, Westville, Indiana

David F. Feikes  
Purdue University North Central, Westville, Indiana

**141/142 (Convention Center)**

THURSDAY

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8:30 A.M.–9:30 A.M.

**ew 36.1**

**Making Mathematics Accessible: The Singapore Method**

(General Interest) Exhibitor Workshop

Participants will learn the basic principles in making mathematics accessible to average and struggling students while challenging the advanced students. Learn a few Singapore Math strategies from the speaker along the way.

Ban Har Yeap  
Marshall Cavendish International  
Singapore

**208 (Convention Center)**

**ew 36.2**

**3-D Common Core Math Games**

(6–8) Exhibitor Workshop

Engaging 3-D games covering Common Core mathematics for sixth, seventh, and eighth grade on SMART boards, Promethean boards, and individual workstations! Free trial version available for participants!

American Book Company  
Woodstock, Georgia

**116 (Convention Center)**

**ew 36.3**

**Every Student Can Be Successful with MyMathLab**

(9–12) Exhibitor Workshop

Success in high school math means success in college—and in life. Differentiate and personalize each student's learning experience with a study plan aligned to the textbook, online assignments, interactive eText, and engaging learning aids. See how Pearson's fully digital math solution, now aligned to the Common Core Standards, is transforming classrooms.

Pearson  
Upper Saddle River, New Jersey

**117 (Convention Center)**

8:30 A.M.–10:00 A.M.

**37**

**Folding, Cutting, Creating: How Geometry Shapes Up**

(PreK–2) Gallery Workshop

The Common Core practices focus on students' abilities to problem solve, reason, and understand that math makes sense. An exploration of two-dimensional shapes and their properties will provide the context for discussing instructional strategies that support implementing the Common Core Standards.

Amy C. Mayfield  
Math Solutions, Sausalito, California

Lisa K. Rogers  
Math Solutions, Sausalito, California

**203/204 (Convention Center)**

**38**

**Geometry in the Primary School Classroom**

(PreK–2) Gallery Workshop

This presentation will provide educators with lessons that enhance students' understanding of geometry and spatial awareness in prekindergarten through grade 2. The lessons rely heavily on the use of manipulative materials, which will be available for attendees to explore. These experiences will help children build a strong foundation for the future study of formal geometry.

Kim P. Bowen  
Mathematical Perspectives Teacher Development Center,  
Bellingham, Washington

**Grand Ballroom IX (JW Marriott)**

**39**

**Reaching All Learners in a Mathematics Classroom**

(PreK–2) Gallery Workshop

How do you reach every child during a math lesson? When do you use direct instruction? Partners? Small groups? This interactive workshop will include hands-on activities with suggestions on differentiated instruction. Children's literature will be incorporated into all the activities. A handout will be provided.

Donna Long  
Houghton Mifflin Harcourt, Columbus, Ohio

**Sagamore Ballroom 3 (Convention Center)**

8:30 A.M.–10:00 A.M.

**40**

### **The Math in Grandma’s Button Box**

**(PreK–2) Gallery Workshop**

Participants will explore the myriad of mathematical concepts that can be taught using the buttons found in Grandma’s button box. They will read children’s literature and do activities that promote students’ conceptual understanding of classification, patterns, odd and even, logic, and matrix, tree, Carroll, and Venn diagrams.

Mary E. Baker  
University of North Dakota, Grand Forks

**144/145 (Convention Center)**

**41**

### **Exploring Pattern Blocks: Developing Young Children’s Geometric Reasoning**

**(PreK–2, Preservice and In-Service) Gallery Workshop**

Experience a unique, productive use of pattern blocks that interests young children and helps them construct geometric concepts. The focus will be on a study using the activity with four-year-old children. View video of one young child, and observe how his actions change as his geometric reasoning progresses. Attendees will experiment with the activity.

Christina E. Sales  
University of Northern Iowa, Cedar Falls

**Marriott Ballroom 7/8 (Marriott Downtown)**

**42**

### **Piquing Children’s Interest in Geometry with Pentominoes**

**(PreK–5) Gallery Workshop**

Participants will engage in various pentomino tasks that involve visualizing and reasoning spatially, comparing and analyzing 2-D and 3-D shapes, and using transformations. Pentominoes will be used to investigate perimeter, area, and volume. Several games and puzzles—links to children’s literature—will be shared.

Jeremy J. Winters  
Middle Tennessee State University, Murfreesboro

Pam Neal  
Kittrell Elementary School, Murfreesboro, Tennessee

Marrie Lasater  
Middle Tennessee State University, Murfreesboro

**Grand Ballroom II (JW Marriott)**

**43**

### **Reflecting the Beauty of Symmetry: Viewing Math in a Kaleidoscope**

**(3–5) Gallery Workshop**

Participants will engage in hands-on activities using tracing paper, Miras, and mirrors to explore reflectional and rotational symmetry. Through the beauty of symmetry, geometry related to angle measures will be developed. Participants will make a kaleidoscope as a culminating activity. Handouts with related information will be provided.

Donna J. Toll  
Ball State University, Muncie, Indiana

Nancy A. Kitt  
Indiana University Purdue University Indianapolis

**121/122 (Convention Center)**

**44**

### **Fraction Introduction and Fraction Division: Contexts and Inductive Reasoning**

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

Experience the process of discovery related to two important topics in teaching of fractions. Explore the importance of inductive reasoning as children learn these topics, and see how teachers’ pedagogical decisions can either facilitate or hinder students’ inductive reasoning.

James E. Schwartz  
Saint John Fisher College, Rochester, New York

**White River Ballroom E (JW Marriott)**

**45**

### **Math Talk and Notebooking That Works: Reaching All Learners**

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

Explore how to structure productive math talk in your classrooms through teachers’ specific moves. Experience and examine both math talk and notebooking as tools for increasing students’ mathematical thinking and understanding while meeting individual needs.

Mary Knuck  
Arizona Department of Education, Phoenix

**Marriott Ballroom 5 (Marriott Downtown)**

THURSDAY



8:30 A.M.–10:00 A.M.

**46**

### **Digging Deeper into Science with Math: Earth Materials and Algebra**

**(3–8) Gallery Workshop**

During a hands-on investigation of soil properties, use math manipulatives and simple equations to explore how math fosters conceptual understanding in science. Leave with a detailed example of a strategically integrated lesson and guidelines for selecting and integrating lessons.

Juliet A. Baxter  
University of Oregon, Eugene

Angie Ruzicka  
Eugene School District 4J, Oregon

**205/206 (Convention Center)**

**47**

### **Formulas, Formulas Everywhere! What Do They Mean?**

**(3–8) Gallery Workshop**

Geometry is chock-full of formulas. What do they mean, and why do they work? Participants will do hands-on activities that answer these questions when one applies them to formulas involving length, area, surface area, and volume. We will also explore the value of pi based on the area of the circle.

Teresa G. Banker  
Kennesaw State University, Georgia

Linda B. Crawford  
Augusta State University, Georgia

**Wabash Ballroom 2 (Convention Center)**

**48**

### **Rock with Scissors and Paper**

**(3–8) Gallery Workshop**

**President Series Presentation**

Strengthen students' spatial reasoning and visual thinking through paper folding and cutting. Solve puzzles, and create pop-ups and more with engaging activities. Discover connections between geometry and this folk craft that spans centuries and cultures. Take home materials to spark creativity and enjoyment for learners at all ages and stages.

Sara Normington  
Council of Presidential Awardees in Mathematics,  
Portland, Oregon

**Sagamore Ballroom 1 (Convention Center)**

**49**

### **Math Nights That Work**

**(6–8) Gallery Workshop**

Learn the secrets to success in planning and implementing math activity nights at your school. Participants should be prepared to participate in actual math night activities, including a warmup, a group game, and a featured activity. You will go away with a CD full of activities you can use or modify.

Sally Wood  
Estacada Junior High School, Oregon

Elizabeth Warren  
Estacada Junior High School, Oregon

**Grand Ballroom VII (JW Marriott)**

**50**

### **Teaching with Number Lines: The Best Kept Secret in Mathematics**

**(6–8) Gallery Workshop**

The speakers will convince you that number lines are fantastic visuals for learning concepts, including operations with integers and fractions, working with percents, and more. Explore these topics and make them come to life for you and your students. Walk away with many instructional strategies and handouts for your middle school classroom.

Karen M. Moore  
Eastern School District, St. John's, Newfoundland and  
Laborador, Canada

Deborah A. Turner  
Nova Central School District, Gander, Newfoundland and  
Laborador, Canada

**Marriott Ballroom 1/2 (Marriott Downtown)**

THURSDAY

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conference  
information.

8:30 A.M.–10:00 A.M.

**51**

### **Exploring Triangle Congruence: A Rich, Discourse-Centered Geometry Task**

(6–12) Gallery Workshop

Selecting good tasks and facilitating discourse that supports students' understandings and abilities to communicate about mathematics are essential to reasoning and sense making. This session will engage participants in a rich geometry task designed to facilitate conjecturing about and the exploration of triangle congruence relationships.

Michelle Cirillo  
University of Delaware, Newark

Beth Herbel-Eisenmann  
Michigan State University, East Lansing

**126/127 (Convention Center)**

**52**

### **From Comic Strips to String and Straws: Enhancing Spatial Skills**

(6–12) Gallery Workshop

Participants will engage in hands-on activities that helped develop and enhance middle and high school students' spatial skills during a summer enrichment program. You will not want to miss the plethora of activities and handouts that you will take with you, as well as the models you will construct during the session.

Rebecca R. Robichaux  
Mississippi State University, Starkville

**101/102 (Convention Center)**

**53**

### **Rate Problems: Thinking Across the Curriculum**

(6–12) Gallery Workshop

Rate, although an important concept in mathematics, often eludes students. Despite the many real-life situations where reasoning using rate can be an efficient strategy to problem solving (e.g., distance, interest) many students struggle with the concept. Participants will explore function and area models for solving rate problems.

Patrick M. Kimani  
California State University, Fullerton

Nicole Engelke  
California State University, Fullerton

**White River Ballroom I/J (JW Marriott)**

**54**

### **Tools? Toys? Technology? Engaging Students in Algebra**

(6–12) Gallery Workshop

How do manipulatives and interactive whiteboard (IWB) technology affect teaching algebra? Where do virtual manipulatives fit in? Learn about the research behind these models of instruction, and learn how to integrate virtual manipulatives and IWB tools into your algebra classroom.

Sara Delano Moore  
ETA/Cuisenaire, Vernon Hills, Illinois

**Sagamore Ballroom 5 (Convention Center)**

**55**

### **Engaging Students to Illustrate Statistical Concepts**

(9–12) Gallery Workshop

Join fellow educators interested in hands-on activities in promoting conceptual understanding of sampling techniques, confidence intervals, and hypothesis testing. Determine sample size and use it to discover how effectively sampling represents the population. All activities have been successfully used in introductory-level statistics classes.

Mary Majerus  
Westminster College, Fulton, Missouri

Christopher Saunders  
Westminster College, Fulton, Missouri

**White River Ballroom A/B (JW Marriott)**

**56**

### **Teaching for Reasoning and Sense Making: How Does It Work?**

(9–12) Gallery Workshop

Engage in activities that employ strategies that promote students' reasoning and sense making in high school mathematics, and learn how this works with your existing curriculum. The strategies used draw on NCTM's *Focus in High School Mathematics: Reasoning and Sense Making*.

Christine D. Thomas  
Board of Directors, National Council of Teachers of Mathematics; Georgia State University, Atlanta

Fred L. Dillon  
Board of Directors, National Council of Teachers of Mathematics; Strongsville High School, Ohio

Jennifer J. Salls  
Board of Directors, National Council of Teachers of Mathematics; Sparks High School, Nevada

**Grand Ballroom IV (JW Marriott)**

THURSDAY

8:30 A.M.–10:00 A.M.

**57**

### Trig Tricks You'll Love!

(9–12) Gallery Workshop

Spice up your trig unit with exciting activities that will wow your students! Teachers will engage in several hands-on activities that include spaghetti sine-curve graphing, paper-plate unit circles, hand trig, and others as time permits. The activities are correlated to NCTM standards. Handouts will be available.

Ann Polson  
Little Rock Christian Academy, Arkansas

**124 (Convention Center)**

**58**

### Want to Play Geometry?

(9–12) Gallery Workshop

Creating and playing games can teach the fundamentals of axiomatic logic. You will learn how your students can create and play games to enrich their understanding of the geometry they study. Come prepared to develop your own postulates and theorems and use them to derive proof in a nonmathematical context. Come play geometry.

Matthew Kaufmann  
Bloomington High School, Illinois

**103/104 (JW Marriott)**

**59**

### Teach Mathematics through Music

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

Previously unmotivated students can have fun and be successful when they see the connections that math has to music, even if they have no formal background in music. Do activities with math topics, and use geometric transformations to compose our own music. A musical background is helpful, but not necessary.

Mark Jaffee  
Lorain City Schools, Ohio

**Sagamore Ballroom 7 (Convention Center)**

**60**

### Asking the Right Questions Promotes Mathematical Discourse

(Preservice and In-Service)  
Gallery Workshop

Engaging mathematical discourse— isn't that what we all want in our classrooms? But how do we get there? This presentation will describe a variety of question types, including those based on the revised Bloom's taxonomy, question stems, alternative response questions, and talk moves. The speaker will explore criteria for "quality questions."

Sharon Young  
Seattle Pacific University, Washington

**105/106 (Convention Center)**

9:30 A.M.–10:30 A.M.

**61**

### Developing Quantitative Literacy

(General Interest) Session

The speaker will begin by discussing the concept of quantitative literacy, its definition, components, and why it is so important in today's world for all students to be quantitatively literate. Then, he'll work through several different activities that will help teachers in a variety of grade levels and courses develop quantitative literacy in their students.

Brian Beaudrie  
Winona State University, Minnesota

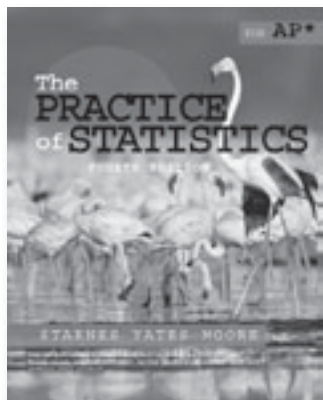
**Wabash Ballroom 1 (Convention Center)**

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# SETTING THE PACE IN INDY!

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For AP\* Statistics

## **The Practice of Statistics for AP\*, Fourth Edition** @2012, cloth, 1-4292-4559-X

Daren S. Starnes • The Lawrenceville School

Dan Yates • Statistics Consultant

David S. Moore • Purdue University

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For the non-AP course

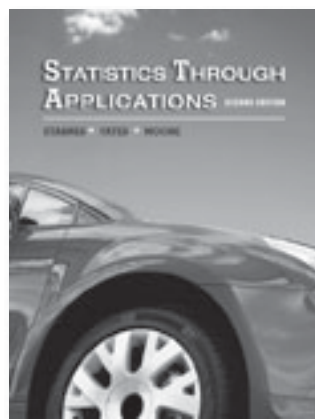
## **Statistics Through Applications, Second Edition** ©2011, cloth, 1-4292-1974-2

Daren S. Starnes • The Lawrenceville School

Dan Yates • Statistics Consultant

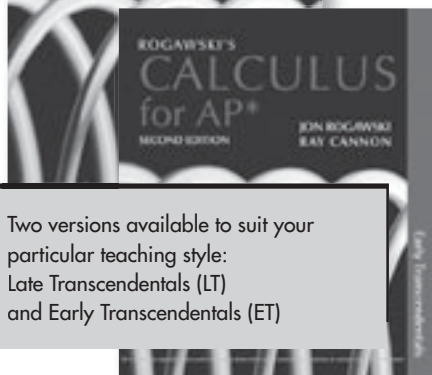
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Ray Cannon • Baylor University

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9:30 A.M.–10:30 A.M.

**62**



### **Do You See What I See? 3-D Reasoning, 2-D Students**

**(General Interest) Session**

Today's students spend less time on activities that develop geometric reasoning than generations past and more time manipulating two-dimensional images of three-dimensional objects. Explore ways to strengthen and refine your students' spatial reasoning and visualization skills through age-appropriate activities aimed at preparing them to learn and live effectively in a three-dimensional world.

Cagle received her Bachelor of Architecture from Carnegie-Mellon University and worked as a licensed professional in New York and Connecticut before relocating to Los Angeles, where she both practiced and taught architecture. Discovering a passion for teaching, she joined the math department at Lawrence Middle School in the fall of 1993. Besides teaching algebra and geometry at Lawrence Gifted Magnet School, she is involved in numerous professional activities beyond the classroom, including being cofacilitator of the Park City Math Institute/Professional Development and Outreach site at Harvey Mudd College.

**Peg Cagle**  
Lawrence Gifted Magnet and Middle School, Los Angeles, California

**500 Ballroom (Convention Center)**

**LCR 63**

### **Geometry's Past, Present, and Future**

**Learn↔Reflect Kickoff Session**

**(General Interest) Session**

What is the future of geometry? How has this vision changed over time? DNA, plate tectonics, dinosaurs, atomic theory, black holes, calculus, and relativity, have moved from spectacular discoveries into mainstream college and school curricula. But where is geometry now, and where is it going? Are we ready?

**Carl W. Lee**  
University of Kentucky, Lexington

**Sagamore Ballroom 4 (Convention Center)**

**64**

### **The Chinese Paradox: How Traditional China Trumps U.S. Reform Attempts**

**(General Interest) Session**

Using video of urban Chinese math classes and professional development, the speaker will explain the puzzling paradox for how seemingly traditional Chinese educational methods—large, teacher-centered, lecture-based classes; exam-driven curricula; and so on—produce students who excel over their U.S. peers, despite the United States's recent reform attempts initiated by NCTM.

**Thomas Ricks**  
Louisiana State University, Baton Rouge

**111/112 (Convention Center)**

**65**

### **From Fingers to Figures**

**(PreK–2) Session**

Learn how you can use mathematical history when working with students to develop their understanding of place value and number sense. The speaker will demonstrate the development of counting and share the stories and materials that she uses. Mathematical concepts will be more evident and easy to understand if they are given a historical background.

**Doris Lindberg**  
Carlssons Skola, Stockholm, Sweden

**Marriott Ballroom 3/4 (Marriott Downtown)**

**66**

### **Math Talk**

**(PreK–2) Session**

We want our students to be thinkers and successful problem solvers. The speaker will share ideas, calculator games, and activities that encourage your students to perform at the higher levels of Bloom's Taxonomy.

**Mickey Jo Sobierajski**  
Fulton City Schools, New York

**Grand Ballroom III (JW Marriott)**

9:30 A.M.–10:30 A.M.

**67**

### **Making Sense of Numbers: Why, What, How**

**(PreK–2, Preservice and In-Service) Session**

Participants will recognize the complexity of learning number relationships. The speakers will explore various number relationships using dot cards, ten frames, number lines, and hundreds charts. Teachers will leave with classroom-ready ideas that empower students with a foundational understanding of our number system.

Sonya Overman  
Goshen Community Schools, Goshen, Indiana

Joy St. Germain  
Goshen Community Schools, Goshen, Indiana

**207 (Convention Center)**

**68**

### **Assessing Students' Numerical Understanding and Skills, Grades K–6**

**(PreK–5) Session**

Developing students' numerical competence is the cornerstone of elementary school mathematics instruction. This session will present assessment strategies that guide and improve instruction, and that integrate conceptual understanding, number sense, computation, and problem solving.

Marilyn Burns  
Math Solutions, Sausalito, California

**Hall F (Convention Center)**

**69**

### **Getting to Got It! with Mathematical Comprehension Strategies**

**(PreK–5) Session**

Use the effective comprehension strategies employed during literacy instruction to help your students get to "I got it!" in math. The author of *Guided Math* will describe and model how to teach using these strategies, to improve your students' mathematical understanding and problem-solving abilities in both whole-class and small-group instruction.

Laney Sammons  
Consultant, Macon, Georgia

**123 (Convention Center)**

**70**

### **A Mathematical Journey through Contemporary Children's Literature**

**(3–5) Session**

The speaker will present problem-based mathematics lessons that have their context in contemporary children's literature. The mathematics content will be based on *Principles and Standards for School Mathematics*. The presentation will only use copyrights from the last five years.

Irene E. Eizen  
Temple University, Philadelphia, Pennsylvania

**Marriott Ballroom 9/10 (Marriott Downtown)**

**71**

### **Bar Diagrams: Draw Your Way to Problem-Solving Success**

**(3–8) Session**

This highly interactive presentation will teach bar diagramming, a powerful, visual-logical problem-solving strategy focused on thinking and comprehension. Using this enhanced version of Singapore's bar modeling, you'll draw bar diagrams to analyze, draw, and solve several word problems. Add this critical-thinking strategy to your problem-solving toolbox.

Robyn Silbey  
Montgomery County Public Schools, Rockville, Maryland

**109/110 (Convention Center)**

**72**

### **Building Conceptual Understanding Circle's Circumference and Area**

**(3–8) Session**

How can we develop students' deeper conceptual understandings of circle's circumference and area? What prior knowledge and learning experiences do students need in order to build such understanding? Get prepared for the introduction of the Common Core State Standards by learning how the focused, coherent Japanese curriculum approaches this issue.

Makoto Yoshida  
William Paterson University, Wayne, New Jersey

**201/202 (Convention Center)**

THURSDAY



9:30 A.M.–10:30 A.M.

**73**

### **Mathematical Representations: Getting at the Heart of Understanding**

**(3–8) Session**

“Explain your thinking” is a daily request in math classrooms, one that many children find challenging. Representations help students organize their thinking and give them tools with which to reason. Participants will engage in activities that highlight the role that representations play in teaching and learning mathematics with understanding.

Melissa E. Hedges  
Mequon-Thiensville School District, Mequon, Wisconsin

**White River Ballroom C/D (JW Marriott)**

**74**

### **Mathematickles: Deepening Mathematical Understanding through Poetry and Art**

**(3–8) Session**

Engage in math activities featuring poetry and art from *Mathematickles!* by Betsy Franco. Explore students’ work from whole-number operations to math properties to factoring, and create your own mathematickles. Discuss instructional advantages and constraints. View a variety of formats for artwork. Leave the session ready to use mathematickles.

Susan E. McMillen  
Buffalo State College, New York

Mary Wolf  
Daemen College, Buffalo, New York

**128 (Convention Center)**

**75**

### **Teaching Number Non-Sense**

**(3–8) Session**

If three-fourths is three out of four, what is five-fourths? Why do we emphasize a sharing division model and then wonder why students don’t understand division with fractions? This presentation will investigate classroom practices leading to misconceptions and explore questions, problems, and models for developing number and operations sense.

Linda Dacey  
Lesley University, Cambridge, Massachusetts

**101/102 (JW Marriott)**

**76**

### **Through the Looking Glass: A Cultural Odyssey to Geometric Thinking**

**(3–8) Session**

Participants will explore symmetry, translations, reflections, and rotations of figures and images from African American and Hispanic culture. This hands-on-activities, high-energy session will embody a fusion of fun-filled geometrical tools; technology; NCTM publications; the NCTM Geometry, Algebra, Connections, and Problem-Solving Standards; and the Equity Principle.

Cheryl Adeyemi  
Virginia State University, Petersburg

Shelly Jones  
Central Connecticut State University, New Britain

**141/142 (Convention Center)**

**77**

### **Make Math Count: Financial Literacy for a Technological World**

**(6–8) Session**

Address NCTM strands of problem solving, communication, and connections while fully engaging students with Excel, Web 2.0 technologies, and games created by Robert Kyosaki. Resources are available online that address income, careers, retirement, and linear and exponential growth, along with assessments differentiated by learning styles.

Leslie F. Williams  
Cary Academy, North Carolina

Michael J. Raskevitz  
Cary Academy, North Carolina

**143 (Convention Center)**

9:30 A.M.–10:30 A.M.

**78**

### **Tools for Building Conceptual Understanding in Geometry**

(6–8) Session

Chalkboard, interactive whiteboard, computer software, manipulatives, paper and pencil—so many tools. Which do we use, when do we use them, and why do we use them? This presentation will investigate the use of tools that will help students build understanding.

Genni Steele

Math Solutions, Sausalito, California

Lu Ann Weynand

Math Solutions, Sausalito, California

**103/104 (Convention Center)**

**79**

### **Creating Desirable Difficulties to Enhance Learning**

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

We can't make our students into seekers if we aren't seekers ourselves. This practice-based presentation will explore the benefits of creating desirable difficulties to help students shake up loose thinking and construct new knowledge in ways that encourage transferring this knowledge to new situations. Exemplars will be explored and extended.

William R. Speer

University of Nevada Las Vegas

**107/108 (Convention Center)**

**80**

### **As Easy as Pi: A Whole-School Lolla-Pi-Looza!**

(6–12) Session

Make your Pi Day a true math celebration—a fun, exciting, memorable learning event. Come experience the highlights of an urban high-school Pi Day. Sample activities, students' work, and a short video will be shared. Find out some fun pi facts and learn how to organize your own Pi Day.

Nivan Saada

Indianapolis Metropolitan High School, Indiana

George McDermott

Hoosier Academy High School, Indianapolis, Indiana

**140 (Convention Center)**

**81**

### **Challenge by Choice: Appropriately Challenging All Students in Diverse Classrooms**

(6–12) Session

Learn how to deliver tiered instruction based on students' choices. Students choose from tiered assignments and assessments. The choices are based on a student's own sense of readiness and desire for challenge. The effect on learning is profound. This presentation is an update of *Educational Leadership's* article, "When Students Choose the Challenge" (November 2007).

David J. Suarez

Jakarta International School, Indonesia

**Grand Ballroom V (JW Marriott)**

**82**

### **Grab Their Attention with Paper-Folding Parabolas**

(6–12) Session

Participants will use patty paper to fold and develop a parabola. To connect more strongly with the technology-savvy student of today, the speaker will develop this paper folding further using graphing-calculator technology. Leave this session with a hands-on, engaging activity ready for immediate use in your classroom.

Janice E. Mitchener

Carmel High School, Indiana

**125 (Convention Center)**

**83**

### **Using Formative Assessment to Differentiate Instruction in Geometry and Algebra**

(6–12) Session

Formative assessment, research-based strategies, and hands-on activities with manipulatives will prepare students for success in geometry and algebra. Differentiated instruction for RtI, ELL, and high-needs students will be demonstrated. Participants will receive handouts of activities and research.

Caryl K. Pierson

Math Teachers Press, Inc., Minneapolis, Minnesota

Stephen Harris

Math Teachers Press, Inc., Minneapolis, Minnesota

**Grand Ballroom X (JW Marriott)**

THURSDAY

9:30 A.M.–10:30 A.M.

**84**

### **Geometric Numbers through Differentiated Instruction**

*(9–12) Session*

Some numbers can be represented by geometric shapes. This presentation will introduce and explore these numbers appropriately for various learning styles.

James E. Carpenter  
Iona College, New Rochelle, New York

*Grand Ballroom VIII (JW Marriott)*

**85**

### **Infinity in Focus with The Geometer's Sketchpad®**

*(9–12) Session*

Come experience an interactive, visual tour of infinity that spans the entire mathematics curriculum. From geometric series to conic sections to calculus to circle inversion, this talk will leave you with a nearly infinite number of classroom ideas.

Daniel Scher  
Key Curriculum Press Technologies, Emeryville, California

*Marriott Ballroom 6 (Marriott Downtown)*

**86**

### **Make Some Movies, Understand Some Algebra**

*(9–12) Session*

See how to capture motion with a video camera, put the motion on a coordinate system, and then investigate the algebra that describes the motion. The big ideas of algebra can come to life. We will look at parabolic motion with LoggerPro and Fathom.

Loring Coes  
Rocky Hill School, East Greenwich, Rhode Island

*Wabash Ballroom 3 (Convention Center)*

**87**

### **Mindmapping in Mathematics**

*(9–12) Session*

One teaching strategy equals four applications. Learn how to pretest without the test, allow students to personalize their learning, review units, and assess students' knowledge in a fun, creative, personal way! Creating mindmaps helps all learners construct relationships among mathematical concepts. Sample mindmaps for algebra through calculus will be available.

Mary Elizabeth Fugate  
Rutherford County Schools, Eagleville, Tennessee

*Grand Ballroom VI (JW Marriott)*

**88**

### **What Could Teachers Do When Students Propose Changing a Diagram?**

*(9–12) Research Session*

What to do when a student wants to change a geometric diagram on the board? Experienced geometry teachers proposed teaching actions one could take, in reaction to a video of instruction where a student wanted to change a diagram. Teachers' perspectives offer a glimpse into how to handle students' work in problem-based instruction in geometry class.

Gloriana González  
University of Illinois at Urbana-Champaign

*120 (Convention Center)*

**89**

### **A "Workshop" Structure Strengthens Transition to Learner-Centered Instruction**

*(9–12, Higher Education) Session*

Students often come to college mathematics classes with an established routine for learning mathematics from a teacher-centered orientation. For learner-centered instruction to be successful, an alternate "workshop" routine provides a necessary means to increase desired student participation, responsibility, engagement and ownership, leading to improved student attitudes and learning.

Gary M. Klingler  
Grand Valley State University, Allendale, Michigan

*Grand Ballroom I (JW Marriott)*



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**90**

### **Eureka! Ten Teachable Moments from the History of Mathematics**

**(9–12, Higher Education) Session**

How did Archimedes calculate pi? How did Cardano solve cubic equations? Why is secant the reciprocal of cosine? Why did they really invent imaginary numbers? We can incorporate the history of math—moments from algebra, geometry, trigonometry, and precalculus—smoothly into the courses we teach. Examples will span two thousand years and many cultures.

Gary Rubinstein  
Stuyvesant High School, New York, New York

**White River Ballroom F (JW Marriott)**

**91**

### **Instructional Perspectives on Combinations and Permutations**

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

When solving a “combinations or permutations” problem, students are often taught to use a combination formula when the order does not matter and a permutation formula when order does matter. The speakers suggest that this is a false dichotomy. They will present alternative solution methods that are easier for students to understand and implement.

Todd D. Cadwallader Olsker  
California State University, Fullerton

Scott Annin  
California State University, Fullerton

**Sagamore Ballroom 2 (Convention Center)**

**92**

### **Connecting Research and Practice with Ethnomathematics**

**(Higher Education, Preservice and In-Service) Session**

In order to bridge policy and practice in diverse populations, this presentation will focus on research conducted at U.S. higher educational institutions in ethnomathematics, the relationship among math, culture, identity, ethnicity, socioeconomic class, English language learning, and special needs.

Linda Furuto  
University of Hawai'i—West O'ahu, Pearl City

**Sagamore Ballroom 6 (Convention Center)**

**93**

### **Supporting Gifted Middle School Students through Conjecturing Activities**

**(Preservice and In-Service) Session**

Experience conjecturing activities in the context of number theory and the binary number system, which gifted middle school students find intriguing. The speakers will share students' responses to the sample activities and discuss the activities' potential for supporting mathematizing patterns and relationships in general.

Shiang-tung Liu  
National Chiayi University, Chiayi County, Taiwan

Jung-chih Chen  
National Chiayi University, Chiayi County, Taiwan

**White River Ballroom G/H (JW Marriott)**

10:00 A.M.–11:00 A.M.

**ew 93.1**

### **Developing Students' MP<sup>3</sup>: Mathematical Promise, Passion, and Perseverance**

**(2–6) Exhibitor Workshop**

Put your students on course to become mathematicians as they develop crucial, creative problem-solving skills. The award-winning, U.S. Department of Education, Javits-funded Project MP<sup>3</sup>: Mentoring Mathematical Minds for grades 2–6 students, and the new NSF-funded Project M<sup>2</sup>: Mentoring Your Mathematicians for primary school students, are both challenging and motivational. Present by Linda Sheffield.

Kendall Hunt Publishing Company  
Dubuque, Iowa

**209 (Convention Center)**

**ew 93.2**

### **Math Upgrade: Elementary School Lessons Using Songs, Video, and Games**

**(3–6) Exhibitor Workshop**

Math Upgrade for Grades 3–6 features music, animation, and manipulatives. Find out how teachers transform their classes using interactive, whole-class lessons and individual online courses. Join us for math, music, and fun!

Learning Upgrade LLC  
Escondido, California

**208 (Convention Center)**

10:00 A.M.–11:00 A.M.

**ew 93.3****“Cracking the Code of Algebra” or  
“Cracking One’s Head on Algebra”****(3–9) Exhibitor Workshop**

How does Hands-On Equations enable 80 percent of inner-city fourth graders to succeed with such basic equations as  $4x + 3 = 3x + 10$ ? If algebra is a foreign language to your students, this session is for you!

Borenson and Associates, Inc.  
Allentown, Pennsylvania

**116 (Convention Center)****ew 93.4****Prentice Hall High School Math and  
the Common Core****(8–12) Exhibitor Workshop**

Learn how this blended print and digital curriculum not only engages students but also infuses Common Core Standards and Mathematical Practices throughout each lesson to ensure *all* learners acquire the critical knowledge and skills necessary to succeed in college and in their careers.

Pearson  
Upper Saddle River, New Jersey

**117 (Convention Center)**

10:30 A.M.–12:00 NOON

**94****Come One, Come All: It’s the  
Measurement Fair!****(PreK–2) Gallery Workshop**

Come on down to the Measurement Fair! Your young students are curious about the world around them. Foster their development of important measurement concepts and processes, such as using equal-sized units and appropriate measurement tools, through exploring and investigating tasks and strategies in the context of a measurement fair.

Janine Firmender  
University of Connecticut, Storrs

Tufita Casa  
University of Connecticut, Storrs

**Marriott Ballroom 1/2 (Marriott Downtown)****95****Integrating Geometry with Children’s  
Literature and Art****(PreK–2) Gallery Workshop**

Participants will engage in hands-on activities for prekindergarten through grade 2 students integrating geometry, art, and literature. After reading children’s books, participants will create fascinating art projects using tangrams, quilts, and shapes.

Sallie Harper  
Mississippi State University, Meridian

Kimberly Triplett  
Mississippi State University, Meridian

**105/106 (Convention Center)****96****Cut, Paste, and Glue: Making  
Manipulatives for Understanding and  
Practice****(PreK–5) Gallery Workshop**

Participants will make manipulatives and gimmicks for teaching understanding and drill and practice involving counting, operations, place value, fractions, and time. Handouts and materials will be available. Please bring scissors, if possible.

Carole J. Reesink  
Bemidji State University, Minnesota

**Grand Ballroom IV (JW Marriott)**

A special **thank you**  
to all the volunteers that have  
assisted with the Annual Meeting

10:30 A.M.–12:00 NOON

**97**

### **Rhythm and Hues: Teaching and Learning with the SMART Board™**

**(PreK–5) Gallery Workshop**

Discover how the SMART Board, music, literature, and manipulatives can build conceptual understanding and make learning mathematics fun! Hands-on activities will integrate unique features of the SMART Board, appropriate for all learners. Students with special needs will be addressed. Participants will leave with ready-to-use lessons.

Christine Ruda

Teachers Teaching with Technology (T<sup>3</sup>), Miami, Florida

**Sagamore Ballroom 5 (Convention Center)**

**98**

### **Areas, Arrays, and Algorithms: Connecting Geometry to Multiplication and Division**

**(3–5) Gallery Workshop**

Visual representations can help students improve their understanding of multiplication, division, and geometry. Experience games and hands-on concrete, pictorial, and symbolic activities with a variety of manipulatives to explore connections to number. Geometry can help students avoid multiplication mayhem and division disaster!

Janet H. Caldwell

Rowan University, Glassboro, New Jersey

**Sagamore Ballroom 3 (Convention Center)**

**99**

### **Integration Activities to Excite and Enrich**

**(3–5) Gallery Workshop**

This workshop will give participants several hands-on activities to integrate mathematics with various parts of the elementary school curriculum, including language arts, science, social studies, and technology. Get ready-made activities that have been field tested with both elementary school students and preservice teachers.

Adam Goldberg

Southern Connecticut State University, New Haven

Maria Diamantis

Southern Connecticut State University, New Haven

**203/204 (Convention Center)**

**100**

### **Modular Arithmetic: The Geometry of Remainders**

**(3–5) Gallery Workshop**

Participants will explore modular arithmetic, the math of remainders. They will combine number sense with symmetry, reflections, rotations, and translations to construct a geometric work of art. Participants will leave with a completed art project and a step-by-step guide for their students to create their own masterpieces.

Ginalouise Pflanz

Council Rock School District, Newtown, Pennsylvania

Anna M. LaForgia

Council Rock School District, Newtown, Pennsylvania

**White River Ballroom A/B (JW Marriott)**

**101**

### **Supporting Students' Fraction Sense: What, Why, and How?**

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

Fraction sense is tied to common sense. Students with fraction sense can reason about fractions and don't apply rules and procedures blindly, nor do they give nonsensical answers to fraction problems. The speakers will discuss what fraction sense is, why it's important, and how you can help students develop it. They will share common dilemmas and activities.

Julie McNamara

Math Solutions, Berkeley, California

Meghan M. Shaughnessy

University of Michigan, Ann Arbor

**Grand Ballroom VII (JW Marriott)**

**102**

### **3-D Geometry: New Ways to Transform Your Teaching**

**(3–8) Gallery Workshop**

We live in three dimensions, yet 3-D geometry challenges many students. Discover hands-on, fun activities that build 3-D shapes, and learn about their rich, inspiring connections. Construct and examine big, beautiful polyhedra. Discover how they transform one into another and how they link to concepts of science and to works of art and architecture.

Aniceta Skowron

Geometro, Ancaster, Ontario, Canada

**White River Ballroom E (JW Marriott)**

10:30 A.M.–12:00 NOON

**103****GEOrganize Your Thinking****(3–8) Gallery Workshop**

Come organize your geometrical thinking! Learn how to create various graphic organizers, including mobiles, fold-ables, placemats, and more. They are a must for every geometry classroom, because they help students creatively organize and display their thoughts while allowing you to assess their knowledge. Leave with a gift box, materials, and handouts.

Deborah A. Turner  
Nova Central School District, Gander, Newfoundland and Labrador, Canada

Karen M. Moore  
Eastern School District, St. John's, Newfoundland and Labrador, Canada

**Sagamore Ballroom 1 (Convention Center)**

**104****Mapping the When, Why, and How of Differentiated Instruction****(3–8) Gallery Workshop**

Imagine having a road map for every student in your class that not only identifies where they are on their individual mathematical journey but also provides researched-based, developmentally appropriate teaching experiences to help teachers deliver them to their final destinations (Standards). Hear how one teacher does this in her classroom.

Terri Morrison  
STEPS Professional Development, Norwell, Massachusetts

**101/102 (Convention Center)**

**105****The Mysterious Treasure Chest of Fractions****(3–8) Gallery Workshop**

Come open the mysterious treasure chest of fractions as we feel the islands, draw the islands, and understand fractions by using an area model manipulative that helps develop concepts from their introduction through comparison, equivalence, operations, decimals, and percents. Activity ideas, sample manipulatives, and a CD will be provided.

Nancy A. Kitt  
Indiana University Purdue University Indianapolis

Donna J. Toll  
Ball State University, Muncie, Indiana

**Sagamore Ballroom 7 (Convention Center)**

**106****It Figures: Logic Puzzles Powered by Geometry****(6–8) Gallery Workshop**

Why settle for plain sudoku? Now you can help students develop logical and spatial reasoning using geometry-based logic puzzles. Participants will explore many new puzzle types, develop solution strategies, and discuss how they can use them in the classroom to enhance geometry and reasoning skills. Come with an open mind and a sharpened pencil.

Jeffrey J. Wanko  
Miami University, Oxford, Ohio

Gregory S. Hawk  
Miami University, Oxford, Ohio

**Marriott Ballroom 7/8 (Marriott Downtown)**

**107****My Favorite Books and Movies for Teaching Middle-Level Mathematics****(6–8) Gallery Workshop**

Participants will actively explore methods of using children's books, novels, and films as tools for facilitating or extending instruction related to middle-level mathematical topics such as measurement, problem-solving, and probability and statistics.

Michael Hardy  
Saint Xavier University, Chicago, Illinois

**Grand Ballroom II (JW Marriott)**

**108****Stretching, Shrinking, and Similarity: Exploring Dilations in the Middle Grades****(6–8) Gallery Workshop**

This workshop will focus on explorations designed to help students develop an understanding of important concepts related to dilations of two- and three-dimensional figures. Explore how dilations affects various characteristics such as perimeter, area, surface area, and volume. Participants will receive a handout.

Terry Goodman  
University of Central Missouri, Warrensburg

Ann McCoy  
University of Central Missouri, Warrensburg

Sue Sundberg  
University of Central Missouri, Warrensburg

**144/145 (Convention Center)**



10:30 A.M.–12:00 NOON

**109**

### **Constructing and Transforming Vocabulary Perspectives in Your Math Classroom**

**(6–12) Gallery Workshop**

Is having kids copy definitions not working for you? Research indicates that a knowledge of important terms is crucial to understanding any subject. This session will feature a research-based instructional strategy for building academic vocabulary. Various games and activities for increasing the understanding of geometric terms will be shared. Come have fun with us as we make the six steps come alive!

Rosann Hollinger  
Milwaukee Public Schools, Wisconsin

Laura Maly  
Milwaukee Public Schools, Wisconsin

Cynthia Cuellar Rodriguez  
Milwaukee Public Schools, Wisconsin

**103/104 (JW Marriott)**

**110**

### **Help! My Students Hate Word Problems**

**(6–12) Gallery Workshop**

This hands-on presentation will share problem-solving strategies that build understanding of concepts for all students. The speaker will demonstrate strategies such as SOLVE that help students unpack word problems, make connections to prior learning, and communicate understanding. Change how your students solve word problems forever.

John W. Staley  
Baltimore County Public Schools, Maryland

Jennifer Henschen  
Baltimore County Public Schools, Maryland

**126/127 (Convention Center)**

**111**

### **Discrete Math and Geometry: Connected More than You Think**

**(9–12) Gallery Workshop**

Many wonderful connections exist between geometry and discrete mathematics that students don't often encounter in a traditional geometry class. Participants will discover ways to connect Pascal's triangle to two- and three-dimensional geometry figures and other areas of mathematics.

Donald T. Porzio  
Illinois Mathematics and Science Academy, Aurora

**205/206 (Convention Center)**

**112**

### **Making Sense of Data, Probability, and Statistics: A Four-Step Process**

**(9–12) Gallery Workshop**

What do SAT writing scores, a school's parking lottery, and medical magnets have in common? Real studies, real data, and rich opportunities for reasoning and sense making. We'll use a four-step process and a TI-Nspire to draw conclusions from data. Classroom-ready handouts will be available.

Daren Starnes  
Lawrenceville School, New Jersey

**121/122 (Convention Center)**

**113**

### **Proof in Geometry: A Logical Approach**

**(9–12) Gallery Workshop**

Help your students experience the logic of proof with simple games as they develop communication, deductive reasoning, and logic skills required for formal geometric proof. Participants will justify and argue strategies as they use flow-chart, paragraph, and two-column formats.

Mark Coté  
Issaquah School District, Washington

**Wabash Ballroom 2 (Convention Center)**

10:30 A.M.–12:00 NOON

## 114

### Transforming Quadrilaterals and Their Changing Diagonals

(9–12) Gallery Workshop

Participants will make two classroom models that demonstrate the changing relationships between the diagonals, angles, and sides as a quadrilateral transforms from parallelogram to rectangle or rhombus to square. The speaker will conduct a hands-on lab, discuss applications in vocational fields, and present additional teaching strategies.

Charlene Keen  
Dauphin County Technical School, Harrisburg,  
Pennsylvania

**White River Ballroom I/J (JW Marriott)**

## 115

### Fostering Reasoning and Sense Making for All High School Students

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

NCTM created a series of companion books focusing on reasoning and sense making for high school students. Participants will examine issues and activities from the books, which focus on making mathematical reasoning and sense making a reality for diverse students, such as low-performing, gifted, bilingual, disabled, and others.

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

Lisa A. Dieker  
University of Central Florida, Orlando

Marilyn Strutchens  
Auburn University, Alabama

**Marriott Ballroom 5 (Marriott Downtown)**

## 116

### Moving a Wall: An Unbelievable Lesson about Measuring Unimaginable Distances

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

Experience an incredible lesson that can fit in any geometry or trigonometry course! Using basic properties of triangles and circles and a few simple tools, students calculate how much a wall moves when pushed. The lesson connects mathematics to nanotechnology and produces a real-world application of math concepts that students won't forget.

Adam R. Poetzel  
University of Illinois at Urbana-Champaign

Joseph Muskin  
University of Illinois at Urbana-Champaign

Matthew C. Hopkins  
Champaign Central High School, Illinois

**Grand Ballroom IX (JW Marriott)**

The advertisement for Nasco Math features a green background with the text "NCTM101" in the top right corner. The main title "Nasco Math" is written in a large, white, cursive font. Below the title, there is a yellow hexagonal graphic that reads "DECI-BLOCKS® Workshop The Next Generation of Pattern Blocks Saturday, April 16 8:30 - 9:30 am Room #117 Convention Center". To the right of this graphic is a blue rectangular graphic that says "Contact Nasco for your FREE Catalog! 1-800-558-9595 www.eNasco.com". In the center, there is a photograph of two women, one in a red shirt and one in a blue shirt, standing behind a table with various colorful geometric blocks. Below the photograph are two boxes of "DECI-BLOCKS" and two jars of "PATTERN BLOCKS". At the bottom of the advertisement, it says "Visit us at Booth #527 Enter to win a DECI-BLOCKS® Classroom Set".

11:00 A.M.–12:00 NOON

**117**

### Using KenKen to Enhance Students' Learning

(Preservice and In-Service)  
Gallery Workshop

KenKen is the arithmetic, logic-puzzle phenomenon sweeping the country. It is a great way to enjoy yourself and build brainpower. The speaker will discuss how to use KenKen with children and teachers. He will describe using KenKen at a camp in Bangalore, India, during summer 2010 and at various teachers' workshops. You'll learn to build KenKen-type puzzles for yourselves.

Harold B. Reiter  
University of North Carolina at Charlotte

**124 (Convention Center)**

**118**



### 314 Days until Pi Day!

(General Interest) Session

Although Pi Day is an international celebration held on March 14 (i.e., 3-14), this pi-fest will reveal some of the oddest facts about pi, which will help you and your students celebrate Pi Day with new perspective year-

round! What mysteries do origami, Vladimir Horowitz's piano, and tennis cans have regarding pi? And what popular foods have amazing pi properties?

Masunaga has shared a passion for geometry full-time in the mathematics classroom for the past 32 years. In addition to his professional work in music and the arts, he spends his time looking for many humorous, rare, and offbeat occurrences of geometry, since these offer teachers a wide repertory of perspectives to renew students' interest in the mathematics of shape, form, design, and function.

David K. Masunaga  
Board of Directors, National Council of Teachers of Mathematics; Iolani School, Honolulu, Hawaii

**Grand Ballroom V (JW Marriott)**

**119**

### Developing Computational Skills While Solving Problems and Avoiding Drill

(General Interest) Session

The speaker will examine ways for students to get practice in computation while avoiding drill. Practice occurs while solving problems that involve important mathematics and thinking in the classroom. Problems will be posed that apply to many grade levels. Useful handouts will be available.

Jerry Becker  
Southern Illinois University Carbondale

**White River Ballroom F (JW Marriott)**

**120**

### Geometry: Plan the Math and Language for ALL and ELL

(General Interest) Session

Geometry presents conceptual, language, and cultural barriers to all students. This presentation will review these challenges and present strategies to address barriers in planning and implementing lessons. The speaker will draw examples from geometry, including measurement, and discuss implications for English language learners (ELLs) and *all* students.

Miriam A. Leiva  
Emerita, University of North Carolina at Charlotte

**Sagamore Ballroom 2 (Convention Center)**

**121**

### High-Leverage Actions for Mathematics Education Leaders

(General Interest) Session

President Series Presentation

Learn about high-leverage actions—those that produce the greatest benefits for your efforts—to improve the quality of mathematics teaching and increase students' achievement. The speaker will discuss the research that demonstrates the effectiveness these actions and give practical suggestions for incorporating them into your leadership practice.

Diane J. Briars  
National Council of Supervisors of Mathematics,  
Pittsburgh, Pennsylvania

**500 Ballroom (Convention Center)**

**122**

**Keys to Successful Teaching: Turning Research into Practice**

(General Interest) Session

With heart, humor, amusing anecdotes, and references to the latest research, the speaker will describe five easy-to-apply, yet powerful tips for improving teaching effectiveness. The talk is delivered in a light-hearted, “Robin Williams”-style; the goal, however is serious—to help students succeed beyond your and their most ambitious expectations.

Frank Wang  
Alexander Dawson Foundation, Las Vegas, Nevada

**Hall F (Convention Center)**

 **123**

**Using Research to Guide Practice**

(General Interest) Research Session

In this presentation, NCTM’s Research Committee will give some guidance on how to use research findings and methods to guide teaching and assessment.

Research Committee  
National Council of Teachers of Mathematics, Reston, Virginia

**Sagamore Ballroom 6 (Convention Center)**

**124**


**Connecting Activities and Informal Assessments: A Look at Math Centers**

(PreK–2) Session

Attendees will engage in math-center activities, examine the corresponding informal assessments, and discuss how to assess informally during center time.



Julie Herron  
University of Alabama, Tuscaloosa

**Marriott Ballroom 9/10 (Marriott Downtown)**



“This is the best workshop in the NCTM Conference”  
“Best lecture here !!!”  
“...wished it had been longer”  
“You truly inspired me to teach in a different way this coming year.”

-- Talk attendee comments

Packed audience at teacher conference.

## Dr. Frank Wang

### Mathemagician and Edutainer

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Come hear Dr. Wang deliver his talk

***Keys to Successful Teaching*** (session 122)

- Thursday, April 14, 2011 11 am - 12 pm, Convention Center Hall F
- Educators who have heard Dr. Wang have described his talks as *inspiring, entertaining, thoughtful, thought-provoking, and full of passion*. Some have written to say the talk “**made the conference for them**” and was the **best and most useful** talk at the show. Come early to get a seat !

Visit the Wang Education booth (# 516)

- Register at the Wang Education booth and get a free “I Love Nerds” or “Geek is Chic” pocket protector (a \$ 3.95 value).
- Get a free sample of **FracBars**, the first and only manipulative that can easily and visually illustrate fraction division as well as do everything else that other fraction manipulatives can do.
- Get a bookmark sample of **Wittzle Pro**, an easy-to-learn mental math game so addictive and fun students won’t want to stop playing.
- See unique products such as the DVD-based classroom kits *Beauty and Mathematics* and *Group Theory with Fruits*, the *Secrets of Mental Math* book, and unique manipulatives and teaching resources.



**LOR 125****Constructing Understanding in Geometry for All Students Using Guided Math****(PreK–2) Session**

Geometry is more than shape recognition in the early grades. Come explore practical strategies to differentiate your math instruction using small-group instruction and open-ended learning centers. Develop academic language, reasoning, and discourse in *all* students. You can teach, reteach, and extend mathematical concepts every day with Guided Math.

Barbara Lynn Blanke  
California Polytechnic State University, San Luis Obispo

**207 (Convention Center)****126****Financial Literacy: Starting Early with Young Children****(PreK–2) Session**

What does financial literacy mean? How do we begin teaching very young children about money? What is the mathematics behind financial literacy for young children? Through children's literature, games, and graphs, the speaker will connect early number sense, counting money, and exploring economic ideas.

Jane Crawford  
Math Solutions, Sausalito, California

**140 (Convention Center)****127****Developing Mathematics RtI to Improve Students' Understanding of Number****(PreK–2, Preservice and In-Service) Session**

Teachers created a Response to Intervention (RtI) program for grades K–2 mathematics. The speakers will share processes used to analyze students' data and establish math concepts on which to monitor progress. They will describe creating assessments and interventions, share examples of created documents, and report how students responded.

Esther Huntzinger Billings  
Grand Valley State University, Allendale, Michigan

Diane Zehnder  
Bright Start Elementary School, Lakeview, Michigan

Kim Tompsett  
Bright Start Elementary School, Lakeview, Michigan

**Grand Ballroom VI (JW Marriott)****128****Exploring Spatial Measurement by Attending to Core Conceptual Principles****(PreK–5) Research Session**

This presentation will explore length, area, and volume measurement through core conceptual principles and underlying procedures. The speakers will examine what is present and what is missing in U.S. elementary school textbooks. They will discuss the promise of tasks, prompts, and students' solutions, both correct and flawed, in supporting students' learning.

Funda Gonulates  
Michigan State University, East Lansing

Lorraine Males  
Michigan State University, East Lansing

D. Lee Clark  
Michigan State University, East Lansing

**111/112 (Convention Center)****LOR 129****Geometric Detectives****(PreK–5) Session**

Clue students in to geometric ideas with hands-on, minds-on learning. The language can be a mystery—prism, vertex, face, dimension, edge—but students will solve it when they see the ideas behind the words. Practical differentiation of instruction helps students, so they don't have to be Doctor Watson to keep pace with even the best Sherlock Holmes in the class.

Shannon Sauder  
Cunniff Elementary School, Watertown, Massachusetts

**107/108 (Convention Center)****130****Measuring Length and Time Based on Logicomathematical Knowledge****(PreK–5) Session**

According to the *Standards*, measurement is “the assignment of a numerical value to an attribute of an object, such as the length of a pencil (p. 44).” The speaker will argue, however, that measurement is a way of making indirect comparisons between or among continuous quantities, and that logicomathematical knowledge is indispensable for measurement.

Constance Kamii  
University of Alabama at Birmingham

**Marriott Ballroom 6 (Marriott Downtown)**

11:00 A.M.–12:00 NOON

**131**

### Developing Children's Data Sense

(3–5) Session

Children are surrounded by data and need to develop an understanding that data are more than just numbers. This session will focus on helping students develop this understanding using the investigative process of statistical problem solving.

Patrick W. Hopfensperger  
Mequon-Thiensville School District, Mequon, Wisconsin

**143 (Convention Center)**

**132**

### Math and Technology Integration: It's Spreading Like Wildfire!

(3–5) Session

How can you get your students to talk about math that way? This is the most common question asked during twenty-first-century lesson study. Learn how to use a document camera and interactive whiteboard to promote problem solving and discourse with your students. Discover the secret to embedding technology into math class in a large, urban school district.

Erin M. Coyle  
Jefferson County Public Schools, Louisville, Kentucky

Amy L. Colucci  
Jefferson County Public Schools, Louisville, Kentucky

**103/104 (Convention Center)**

**LOR 133**

### Who's Bigger, Sponge Bob or Jason Kidd?

(3–5) Session

Participants will see how Japanese and Singaporean elementary school textbooks explore areas of rectangles and squares. Participants will also view video clips of engaging classroom lessons developed through lesson study.

William Jackson  
Scarsdale Public Schools, New York

**Wabash Ballroom 3 (Convention Center)**

**LOR 134**

### Exploring the Beauty of Geometry through Art and Hands-On Activities

(3–8) Session

Together we will explore connections between geometry and art to motivate elementary school students and improve their understanding of geometry. Participants will try hands-on tasks embedded in artistic contexts to learn how to engage children in reasoning and mathematical discourse as they discover the beauty of geometry.

Mi Yeon Lee  
Indiana University Bloomington

Enrique Galindo  
Indiana University Bloomington

**123 (Convention Center)**

**LOR 135**

### Spatial Reasoning through Problem Solving: Connections across Mathematics

(3–8) Session

This presentation will describe fun geometry and spatial-reasoning problems designed to connect different strands of mathematics, from algebra to probability. The speaker will take a look at students' development of geometric understanding through activities shared with the audience. Just bring your problem-solving skills and thinking caps!

Bob Drake  
University of Cincinnati, Cincinnati, Ohio

**201/202 (Convention Center)**

THURSDAY



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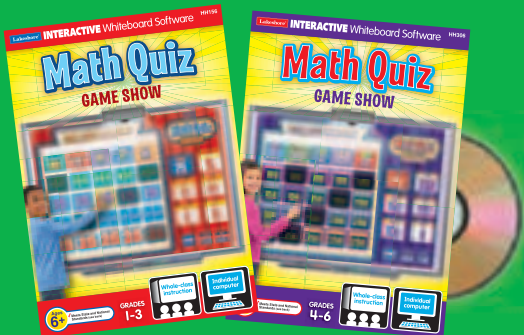


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**137****Why We Don't Always Need to Cross Multiply****(3–8) Session**

Proportional situations occur in many facets of mathematics. Students' understanding of higher-level mathematical topics such as geometry and algebra stem from their understanding of proportions. Come explore various strategies for solving proportions and learn instructional techniques to help students develop fluency with these procedures.

Jennifer M. Tobias  
Illinois State University, Normal

Janet B. Andreasen  
University of Central Florida, Orlando

Xiaofen Zhang  
Illinois State University, Normal

**White River Ballroom C/D (JW Marriott)****138****Math: It's a Whole New Game****(6–8) Session**

For years teachers have used games as instructional tools to enhance students' motivation and improve content mastery. Yet many are slow to recognize the instructional power of today's educational video games. Join this presentation to learn how one district incorporated multiplayer games as a pivotal instructional tool, with great results.

Mary L. Thomas  
Austin Independent School District, Texas

**Grand Ballroom III (JW Marriott)****139****Mathematics Literacy: Using Technology to Improve Students' Mathematics Skills****(6–8, Preservice and In-Service) Session**

This presentation will introduce teachers to a research-based, oral-reflection strategy that uses technology to both (1) increase students' conceptual understanding of procedural operations and (2) strengthen their oral and written mathematics communication skills. How to assess the work formatively will also be covered.

Kimberly Kotkovic  
Hope College, Holland, Michigan

Vicki-Lynn Holmes  
Hope College, Holland, Michigan

**Grand Ballroom VIII (JW Marriott)****140****Using Technology to Transform Students' Problem-Solving Experiences and Perspectives****(6–8, Preservice and In-Service) Session**

Problem solving is an important twenty-first-century skill for all students to master. Technology makes mastery a more realizable dream. The speakers will share free, online resources that they have used in the classroom to transform students from "I don't get it" into confident problem solvers. They will also offer tips for schools with limited technology and resources.

Ashley C. Miller  
China Grove Middle School, North Carolina

Marie Hogan  
Covina Valley Unified School District, California

Suzanne Alejandre  
Drexel University, Philadelphia, Pennsylvania

**128 (Convention Center)****141****Equalizing the Learning Game Using Graphic Organizers for Math****(6–12) Session**

Even Einstein struggled with rote details, but he did better with high-level concepts in visual form. Graphic organizers have been used successfully in other subjects to assist students with difficulties. Applying graphic organizers to math procedures like fractions, geometry, and algebra may address low performance or procedural retention concerns.

Natalia P. Darling  
Raymond Walters College, University of Cincinnati, Ohio

**101/102 (JW Marriott)****LOR 142****Geometric Wonders: How Lesson Study Brings Them to Life****(6–12) Session**

Through a lesson-study approach, learn to help students understand how beauties of geometry, such as  $\pi$  and  $\phi$ , their history and applications, and how they interconnect and build on one another to produce a coherent whole. The speaker will analyze collaboratively planned and inquiry lessons using technology, assessment alignment with instruction, and students' work.

José Francisco Sala García  
Instituto de Educación Secundaria Sa Colomina, Ibiza, Balearic Islands, Spain

**Wabash Ballroom 1 (Convention Center)**



**143****My Answers Don't Match: Using the Graphing Calculator to Check***(6–12) Session*

What do you do if you check a by-hand solution using a graphing calculator and the solutions don't match? The speakers will share results from a study of high school students who responded to this question. Participants will analyze these responses and a task designed to use with students to promote exemplary checking practices.

Allison W. McCulloch  
North Carolina State University, Raleigh

Rachael H. Kenney  
Purdue University, West Lafayette, Indiana

*Grand Ballroom I (JW Marriott)***144****Supporting Productive Struggling in the Mathematics Classroom***(6–12) Session*

Research indicates that allowing students to struggle with challenging problems can help them achieve at higher levels. How much should you allow your students to struggle? How can you support them so their struggles are productive? This presentation will examine tools that help students persist through their struggles with challenging math problems.

Susan May  
Charles A. Dana Center, University of Texas at Austin

Kathi Cook  
Charles A. Dana Center, University of Texas at Austin

*Marriott Ballroom 3/4 (Marriott Downtown)***145****Functions on the First Day of Algebra 1? Absolutely!***(9–12) Session*

This session will explore teaching Algebra 1 from a functions perspective using five communication methods—numerical, algebraic, graphical, verbal, and written. Sample activities will be shared that help students explore the eight parent functions from which the entire Algebra 1 course will derive.

Renee L. Colquitt  
Oak Ridge Schools, Tennessee

*Grand Ballroom X (JW Marriott)***LOR 146****Geometric Optimization***(9–12) Session*

You can use classical high school geometry—properties of reflections, rotations, and invariants under transformations—to solve many optimization problems typically treated in calculus. The speaker will use interactive geometry environments to visualize such problems and show how they fit into the broader mathematical landscape.

Sarah Sword  
Education Development Center, Newton, Massachusetts

*Sagamore Ballroom 4 (Convention Center)***147****Historical Topics in Mathematics: Patterns on Pascal's Triangle***(9–12) Session*

The Chinese knew Pascal's triangle some 500 years before Pascal lived. Patterns continued to be discovered. Topics to be explored include rows; columns; diagonals; powers of eleven and two; binomial expansions with positive and negative integer exponents; probability; hexagons; square, cubic, triangular, Fibonacci, and Catalan numbers; palindromes; and Euler's triangle.

Jim Fulmer  
University of Arkansas at Little Rock

Suzanne Mitchell  
Arkansas State University, Jonesboro

*White River Ballroom G/H (JW Marriott)***148****Integrating Quantitative Reasoning (QR) across the Curriculum: A Grass-Roots Movement***(9–12, Higher Education) Session*

Our students must develop QR skills to be competitive in today's world. The speakers will discuss what QR is and how they involve faculty in implementing QR activities in their classes. Participants will have access to materials to help them develop QR projects for their classes.

Gordon L. Wells  
Ohio Valley University, Vienna, West Virginia

Angie M. Morgan  
Ohio Valley University, Vienna, West Virginia

*125 (Convention Center)*

11:00 A.M.–12:00 NOON

**LCR 149**

### **Taking Advantage of Technology and Connections to Construct Multiple Proofs**

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

By investigating the Three Altitudes of a Triangle problem and exploring how it connects to a variety of other ideas, this presentation will discuss an appropriate use of dynamic geometry software—stimulating students’ conjecturing spirit and proof insights—and focus on taking advantage of connections in order to construct multiple proofs to the same problem.

Zhonghong Jiang  
Texas State University, San Marcos

**120 (Convention Center)**

**150**

### **Solving Problems Using GeoGebra: Classroom Teachers’ Experiences**

**(Preservice and In-Service) Session**

A professional course on problem solving for grades K–8 in-service teachers uses the open-source software GeoGebra. Drawing specific examples from geometry, the speakers will discuss these teachers’ mathematical learning experience, showcase the process of problem solving using dynamic technology, and describe their growth in both content knowledge and pedagogical knowledge.

Frackson Mumba  
Southern Illinois University Carbondale

Lingguo Bu  
Southern Illinois University Carbondale

Mary Wright  
Southern Illinois University Carbondale

**141/142 (Convention Center)**

11:30 A.M.–12:30 P.M.

**ew 150.1**

### **Build a Solid Foundation for Prekindergarten Using “We Discover Math”**

**(Pre–K) Exhibitor Workshop**

“We Discover Math” is a hands-on, integrated program that is developmentally appropriate and standards-based. Young children learn mathematical concepts tied to their own experiences and through explorations. Manipulatives and activities, used consistently, play a crucial role in developing concepts and skills. Take-home activities are included. Presented by John Marino

Kendall Hunt Publishing Company  
Dubuque, Iowa

**209 (Convention Center)**

**ew 150.2**

### **Smiles of Success for Students, Parents, and Teachers: Britannica Smartmath!**

**(K–5) Exhibitor Workshop**

Participants will engage in a lively, interactive demonstration of Web-based practice and assessment for elementary school students. Move students toward computational fluency while using tools that allow teachers to differentiate, assess, track, and evaluate in real time. Students enjoy doing math at home or in the classroom.

Britannica Mathematics  
Chicago, Illinois

**116 (Convention Center)**

**ew 150.3**

### **Prealgebra Upgrade: Interactive Lessons Using Songs, Video, and Games**

**(6–8) Exhibitor Workshop**

Prealgebra Upgrade features music and animation to make middle school math understandable. Find out how teachers transform their classes using interactive, whole-class lessons and individual online courses. Join us for math, music, and fun!

Learning Upgrade LLC  
Escondido, California

**208 (Convention Center)**

THURSDAY

11:30 A.M.–12:30 P.M.

**ew 150.4**

**Pearson's New *digits* Program:  
Where Math Clicks!**

**(6-8) Exhibitor Workshop**

Experience **digits**, the only middle grades math curriculum built for today's digital students with all interactive whiteboard lessons, online assessments, robust Response to Intervention, and automatic grading and reporting. Find out how **digits** harnesses the power of technology to optimize your time and individualize their learning—both in and out of the classroom.

Pearson  
Upper Saddle River, New Jersey

**117 (Convention Center)**

12:30 P.M.–1:30 P.M.

**151**

**Math Talk: Teaching Concepts and Skills through Illustrations and Stories**

**(General Interest) Session**

A young child's understanding of the world is enlightened and expanded through stories and illustrations, so it makes sense to use these resources when teaching mathematics. You will learn to use "math talk," an approach based on a method used in Singapore, as a powerful way to provide purposeful practice through nursery rhymes, fairy tales, illustrations, and photographs.

Char Forsten  
Staff Development for Educators, Peterborough, New Hampshire

**Marriott Ballroom 3/4 (Marriott Downtown)**

**152**



**My Life as a Visual Learner**

**(General Interest) Session**

How could a person earn D's in her first three college math classes and then go on to get a B.S. in mathematics education, an M.S. in mathematics with a thesis in topology, and Ph.D.

in mathematics education? It all started when a professor drew a picture that really was worth a thousand words. The speaker's experiences as a visual learner will inspire you to reconsider some of your beliefs about your students.

Dayoub has been involved in the financial services industry since 1984. She has a wide background of educational and business experience with a master's degree in mathematics, a doctorate in mathematics education, and many postgraduate courses in financial strategies and economics. She serves on various chambers of commerce and financial advisory boards. She is Council Director for the Coastal Georgia Chapter of Girls on the Run, an after-school program that uses the power of running to empower preteen girls to embrace a life of healthy living

Iris Dayoub  
Alpha Financial Management, Savannah, Georgia

**Grand Ballroom V (JW Marriott)**

**153**

**Tutoring and Teaching in a Time of Testing**

**(General Interest) Session**

This presentation will address the growing practice of mathematics tutoring by federally funded supplemental education services (SES) providers. A tutor and his student will present the experiences and impressions of a range of students who have received SES tutoring. Their interactive session focuses on how teachers and tutors can work together more effectively.

Bill Rosenthal  
Advanced Learning Centers, Inc., Saint Petersburg, Florida

John Perdomo  
Buchanan Middle School, Tampa, Florida

**143 (Convention Center)**

12:30 P.M.–1:30 P.M.

## 154

### Watch Your Language: Speaking in and about the Mathematics Classroom

(General Interest) Research Session

Some classrooms around the world promote students' use of spoken mathematics and some do not. Mathematics teachers in different countries employ different professional vocabularies to describe what they do and what occurs in their classrooms. This research-based presentation contrasts the technical vocabulary of mathematics teachers and students.

David J. Clarke  
University of Melbourne, Australia

**141/142 (Convention Center)**

## 155

### Integrating Multicultural Children's Literature into Grades K–2 Mathematics

(PreK–2, Preservice and In-Service) Session

Schools are becoming more culturally diverse. This presentation will share a collection of multicultural children's books and demonstrate how children's literature can be used to provide meaningful, multicultural mathematics. Teachers will experience finding the math in multicultural children's literature. An annotated bibliography will be provided.

Nancy L. Smith  
Emporia State University, Olathe, Kansas

Sheri Bevis  
Emporia State University, Olathe, Kansas

**128 (Convention Center)**

## LOR 156

### The Three Pig Builders Put Geometry in Action

(PreK–2, Preservice and In-Service) Session

Pig Builders is a project that connects geometry problem solving for emerging mathematicians. The participants will view and discuss video of students reasoning and using SMART Board technology. The speakers will provide information for participants about important mathematical language and graphic organizers that support formative assessment of geometric concepts.

E. Todd Brown  
University of Louisville, Kentucky

Lana B. Thomas  
University of Louisville, Kentucky

Gina Kimmery  
Jefferson County Public Schools, Louisville, Kentucky

**120 (Convention Center)**

## LOR 157

### Geometry and Early Algebra: Attributes, Function Machines, and Sorting

(PreK–5) Session

By sorting both nonstandard and garden-variety geometric shapes, children see enough contrast to recognize what features make particular shapes special. Other fun activities connect elementary school geometry with early algebraic ideas and build a robust, interconnected mathematics. See classroom videos and take home activities for your students.

Kate Sorgi  
Barbieri Elementary School, Framingham, Massachusetts

Tracy Manousaridis  
Walsh Middle School, Framingham, Massachusetts

**Wabash Ballroom 3 (Convention Center)**

## 158

### Outsmarting Your SMART Board™

(PreK–5) Session

Explore the many ways to create seamless lessons by integrating interactive technology with low-tech manipulatives. Reach all learners through the use of whole-class lessons, differentiated instruction, learning centers, and assessments. No SMART board? No problem.

Shelly Moses  
San Diego Jewish Academy, California

Kelli Cox  
San Diego Jewish Academy, California

**103/104 (Convention Center)**

THURSDAY



12:30 P.M.–1:30 P.M.

**159**

### **Problem-Solving Pen Pals**

**(PreK–5) Session**

This is nothing like the pen pals you have seen before! Come learn how you can create a community of learners outside your own district. The presenters will take you through their story of how two different school districts paired up their students to solve, analyze, and respond to a variety of open-ended math problems. The end result was a face-to-face meeting through poly-com video conferencing.

Amy Besterman  
Avonworth School District, Pittsburgh, Pennsylvania

Claire Pappas  
Avonworth School District, Pittsburgh, Pennsylvania

David Thomas  
Avonworth School District, Pittsburgh, Pennsylvania

**White River Ballroom C/D (JW Marriott)**

**160**

### **Algebra Grades K–12: A Perspective from Three Programs**

**(3–5) Session**

Students see algebraic ideas in elementary, middle, and high school. But what does having a coherent experience of that algebra mean? See how Think Math! (K–5), Connected Mathematics Project 2 (6–8), and the CME project (9–12) treat variables, simplifying, simultaneous equations, and factoring. (Yes, all those topics at all those levels!)

June Mark  
Education Development Center, Newton, Massachusetts

E. Paul Goldenberg  
Education Development Center, Newton, Massachusetts

**Sagamore Ballroom 6 (Convention Center)**

**161**

### **Connecting Mathematics Comprehension to Language Development**

**(3–5) Session**

**President Series Presentation**

The Math Pathways and Pitfalls program integrates best practices for learning math concepts, developing mathematical language, and confronting common problems.

Jose M. Franco  
TODOS: Mathematics for All, Berkeley, California

**101/102 (JW Marriott)**

**LOR 162**

### **Geometry Gone Wild!**

**(3–5) Session**

Flapping flamingos, growling alligators, and soaring seagulls gather in this presentation to engage students in geometry and measuring activities requiring vocabulary, math tools, and geometric knowhow. Participants will see students' work, hear students' podcasts, and see student-created videos for practice and assessment. Directions for these entertaining, engaging activities will be available.

Catherine Kuhns  
Country Hills Elementary School, Coral Springs, Florida

**107/108 (Convention Center)**

**LOR 163**

### **Beyond the Geometry: Discovering How Geometric Thinking Develops**

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

How do we scaffold students' thinking to create deep understanding of geometric concepts? Explore activities, problems, and discussion points that provide rich experiences for promoting students' thinking and reasoning in context. Learn how to build geometric thinking capacity by using the van Hiele hierarchy of understanding spatial ideas.

Nell W. McAnelly  
Louisiana State University, Baton Rouge

**207 (Convention Center)**

**164**

### **Singapore Lessons: Visual Models to Move from Arithmetic to Algebra**

**(3–8) Session**

Singapore's success in math is in part a result of carefully designed lessons that enable students to represent and visualize mathematical relationships. These models begin with the four operations and then connect to complex problems and then to algebra. This session will demonstrate why their students succeed in algebra at such a high level.

Andy Clark  
Great Source Education, Wilmington, Massachusetts

**White River Ballroom F (JW Marriott)**

12:30 P.M.–1:30 P.M.

**165****Targeted Connections: Thinking Proportionally—the Context Is the Key!****(3–8) Session**

Are equivalent fractions and ratios similar? Proportionality compares two quantities (i.e., cups of sugar to cups of flour). Identifying quantities and their relationship is the key to understanding situations that vary proportionally. We will examine the similarities and several Web-based simulations that provide context for exploring proportionality.

Cheryl Malm  
Northwest Missouri State University, Maryville

Patricia Lucido  
Rockhurst University, Kansas City, Missouri

**Grand Ballroom III (JW Marriott)****166****Think Rectangle and See Solution!****(3–8) Session**

The basic idea of odds and evens, multiplication, division, squares, their roots, and sums of sequences are among many numerical concepts that can be represented geometrically. Even the game of NIM reveals its secrets. It's all in the rectangle. You and your students will be able to *see* solutions!

Mary Altieri  
MOEMS, Bellmore, New York

**White River Ballroom G/H (JW Marriott)****167****Discourse: Framing an Umbrella for Teaching****(6–8) Session**

Discourse frames the heart of teaching mathematics. But how do you do it? This session will overview a framework of ways to think about using discourse in your classroom. Sample video sessions will be shown to help clarify strategies.

Susan N. Friel  
University of North Carolina at Chapel Hill

**Marriott Ballroom 6 (Marriott Downtown)****168****Learning Stats by Doing S.T.A.T.S.: A Project-Based Approach****(6–8) Session**

This presentation will discuss the construction of a project-based unit designed to improve middle grades students' understanding of statistics and advance students' attainment of twenty-first-century skills. The unit applies tasks that focus on important statistical ideas to authentic, real-world contexts that engage middle grades students.

Dionne I. Cross  
Indiana University Bloomington

Rick A. Hudson  
University of Southern Indiana, Evansville

Jean S. Lee  
University of Indianapolis, Indiana

**111/112 (Convention Center)****169****MATH-a-MAGIC: Magic from the Perspectives of Numbers****(6–8) Session**

Astonish your students by “math-a-magically” reading their minds and telling them the number or card they have secretly selected. Win a “fair” game, every time! Come add magic, mystery, and good math to those spare, teachable minutes.

David E. Ewing  
University of Central Missouri, Warrensburg

**140 (Convention Center)****170****What We Know about “Good Mathematics” Teaching for All Students****(6–8, Preservice and In-Service) Session  
President Series Presentation**

This session will examine teaching practices that claim to promote effective mathematics learning for all students. The speaker will describe vignettes, case studies, and other artifacts from research articles to help participants think about the validity of the claims.

Marilyn Strutchens  
Association of Mathematics Teacher Educators; Auburn University, Alabama

**Hall F (Convention Center)**

12:30 P.M.–1:30 P.M.

**171**

### **Slope and Tangent: It's a Geometric Connection!**

(6–12) Session

Develop the tangent ratio with the use of slope angles, similar triangles and slope of related lines. Connect these ideas to trig ratios and use of calculators, easing into that trig inverse button on the calculator! Learn how to make clinometers so students may experience using the tangent ratio in a real life situation.

Cheryl J. Tucker  
Bloomington Public Schools, Minnesota

Roy B. Dean  
Jefferson County Schools R-1, Arvada, Colorado

**Grand Ballroom VIII (JW Marriott)**

**LOR 172**

### **Geometry: The Ultimate for Reasoning, Sense Making and Connecting**

6-8 (Session)

Transform your thinking about teaching geometry so that it offers a rich context for helping students connect with other crucial mathematics. Lesson ideas will focus on easily accessible materials. Each lesson idea references multiple Common Core State Standards, and is designed to construct avenues for reasoning and to encourage sense making.

Vena M. Long  
University of Tennessee, Knoxville

**Sagamore Ballroom 4 (Convention Center)**

**LOR 173**

### **Using Screen-Capture Movies to Assess Quadrilateral Constructions in Sketchpad**

(6–12) Session

Students' sketches of quadrilateral constructions convey much information about the students' understanding of quadrilateral properties and how those properties drive sound constructions. But how do you document the decisions, missteps, and self-corrections that are lost in the final sketch? Make screen-capture movies of the construction process!

Annie Fetter  
The Math Forum @ Drexel University, Philadelphia, Pennsylvania

Christina Foran  
Tennessee School for the Deaf, Knoxville

**Wabash Ballroom 1 (Convention Center)**

**175**

### **Close Encounters of the Third Dimension: Learning through Investigation**

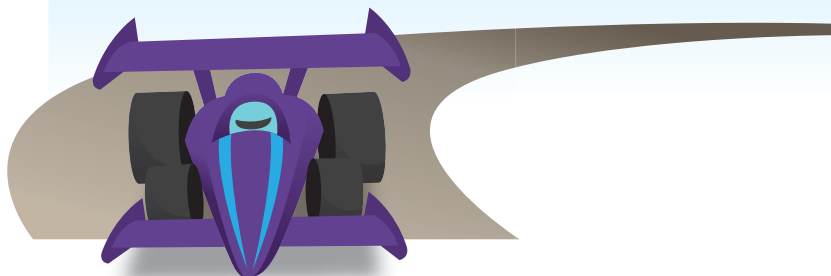
(9–12) Session

Experience a student-centered, whole-school research project involving the design and testing of a game intended to teach the 3-D coordinate system. Participants will learn about the project's development through a short video and examine the game prototype. A number of students involved in the project will present the results and analysis.

George McDermott  
Hoosier Academy High School, Indianapolis, Indiana

**500 Ballroom (Convention Center)**

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





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*\*As demonstrated by elevated test scores, WestEd study, 2004.*

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12:30 P.M.–1:30 P.M.

**176**

### **An Interesting Problem with Master Locks and Simplex Locks**

**(9–12, Higher Education) Session**

Discovering combinations of the keys for a simplex lock is an unique way to study combinatorics. Use the problem of a simplex lock, along with Texas Instruments handheld devices and math manipulatives such as Cuisenaire rods, to introduce basic counting principles and techniques. Students will be able to conceptualize the meaning of combinations and permutations.

PingHsiu Lee  
Reagan High School, Houston, Texas

Khoon Tan  
Reagan High School, Houston, Texas

**Marriott Ballroom 9/10 (Marriott Downtown)**

**177**

### **MINDSET: Mathematics Instruction Using Decision Science and Engineering Tools**

**(9–12, Higher Education) Session**

MINDSET is a collaboration among educators, engineers, and mathematicians to create and implement a curriculum to teach standard mathematics concepts using math-based, decision-making tools for a noncalculus fourth-year mathematics curriculum. Participants will receive a brief summary of the project and experience the curriculum through multistep problem solving in real-world settings.

Karen Norwood  
North Carolina State University, Raleigh

**109/110 (Convention Center)**

**178**

### **3-D Modeling with Google™ SketchUp™**

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

Do your students confuse prisms with pyramids? Do they mix up slant height with the height of the shape, or know where to put all those right triangles? Transform your classroom as you engage students with three-dimensional geometry. The speakers will share classroom activities that reinforce vocabulary, measurement, and visualization skills.

Mark A. Augustyn  
Ball State University, Muncie, Indiana

Kathryn G. Shafer  
Ball State University, Muncie, Indiana

**201/202 (Convention Center)**

**179**

### **Geometry Software Showdown: The Geometer's Sketchpad® versus GeoGebra**

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

This presentation will compare and contrast two geometry programs, The Geometer's Sketchpad and GeoGebra, and demonstrate their effectiveness in teaching various aspects of a high school geometry curriculum. Discussed topics will include conic section construction, circle properties, triangle properties, coordinate geometry, and more.

Jeffrey S. Hall  
Mercer University, Atlanta, Georgia

**Grand Ballroom VI (JW Marriott)**

**180**

### **Preparing for Your Institution's NCATE Program Review**

**(Higher Education) Session**

Learn to navigate the NCATE program review process and prepare the required documents. This presentation will provide the latest information about the overall program review system, as well as specifically what is needed to prepare mathematics education program reports. Report templates, program standards, and mistakes to avoid will be explored.

Monique Lynch  
National Council of Teachers of Mathematics, Reston, Virginia

**Sagamore Ballroom 2 (Convention Center)**

**181**

### **A Professional Collaboration Model Furthering Grades K–8, Problem-Based Instruction**

**(Higher Education, Preservice and In-Service) Session**

The speakers will share a model using professional collaboration among teachers to develop instruction through problem solving in grades K–8 classrooms. The collaboration performed lesson “face lifts” to transform low-cognitive-demand lessons into ones with high cognitive demand. The speakers will describe several techniques the teachers used and successes and concerns that the teachers faced.

Annette Ricks Leitze  
Ball State University, Muncie, Indiana

Oliver F. Jenkins  
Ball State University, Muncie, Indiana

**125 (Convention Center)**

12:30 P.M.–1:30 P.M.

**182**

### Doing What Works: Multimedia Support for Research-Based Practices Online

(Preservice and In-Service) Session

This presentation will describe the Doing What Works Web site on topics and practices such as Response to Intervention in mathematics, crucial foundations for algebra, major topics in algebra, and teaching fractions. For each practice, the speakers will explore the Web site areas on learning what works, seeing how it works, and doing what works.

Clare Heidema  
RMC Research Corporation, Denver, Colorado

Arlene Mitchell  
RMC Research Corporation, Denver, Colorado

**Grand Ballroom I (JW Marriott)**

**183**

### Engaging the Algebra 2 Student: A Professional Development Approach

(Preservice and In-Service) Session

Current theory on teaching Algebra 2 calls for engaging instruction and activities that draw students into the learning process. Learn how one state, Arkansas, used professional development to turn the tide on instructional practices. This was part of Arkansas's goal to bring credibility back to the diploma and help prepare students for college mathematics and the workforce.

Bill Nielsen  
Arkansas Department of Education, Little Rock

**Grand Ballroom X (JW Marriott)**

1:00 P.M.–2:00 P.M.

**ew 183.1**

### Improve Math Scores with Exciting, Movement-Based Activities

(General Interest) Exhibitor Workshop

Receive information about multiplication improved by 30 percent. Jump, skip, and hop while learning math concepts. Brain research and more are supported.

GeoMotion Group, Inc.  
Orlando, Florida

**116 (Convention Center)**

**ew 183.2**

### Interactive Whiteboard in an Inquiry-Based Classroom

(K–5) Exhibitor Workshop

Are you looking to use an interactive whiteboard in an inquiry-based classroom? Learn how to use activities on your interactive whiteboard to bring new depth to your class.

Pearson  
Upper Saddle River, New Jersey

**117 (Convention Center)**

**ew 183.3**

### Meeting the Common Core Standards for Middle Grade Mathematics

(6–8) Exhibitor Workshop

The new Math Innovations program, developed using Focal Points and correlated with the Common Core Standards, encourages students to think like mathematicians and focus on reasoning, sense making, questioning, and discourse. Learn how concepts are developed in depth with multiple connections to computational fluency and flexibility. Presented by Linda Sheffield.

Kendall Hunt Publishing Company  
Dubuque, Iowa

**209 (Convention Center)**

**ew 183.4**

### Algebra Upgrade Interactive Lessons Using Songs, Video, and Games

(9–12) Exhibitor Workshop

Algebra Upgrade features music and animation to make challenging concepts understandable. Find out how teachers transform their classes using interactive whole-class lessons and individual, online courses. Join us for algebra, music, and fun!

Learning Upgrade LLC  
Escondido, California

**208 (Convention Center)**

1:00 P.M.–2:30 P.M.

**184**

### **Assisting Students Struggling with Fact Fluency**

(PreK–2) Gallery Workshop

It is recommended that Response to Intervention in the elementary grades focus on issues of number, providing visual representations, and devoting ten minutes of each session to basic facts. Participants will do activities that combine all three recommendations and build mathematical relationships to increase students' fluency with facts.

Christina D. Tondevold  
Initiative for Developing Mathematical Thinking, Boise, Idaho

**Grand Ballroom IX (JW Marriott)**

**185**

### **Games for Diverse Students to Learn Number Sense and Operations**

(PreK–2) Gallery Workshop

The speaker will present effective instructional and alternative assessment strategies using hands-on learning games and activities, tested in actual classrooms with English language learners. Participants will discuss students' actual work samples and rubrics used to score them. Handouts containing activity ideas to use as assessment tools will be available.

Insook Chung  
Saint Mary's College, Notre Dame, Indiana

**126/127 (Convention Center)**

**186**

### **Jump into Number in the Early Years**

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

Early years students, when learning about number, need to engage in a variety of learning experiences to become proficient with this concept. Participants will explore learning experiences that will allow them to provide many opportunities for students to master the knowledge and skills of counting, subitizing, patterning, fractions, and problem solving.

Eva deVries  
Australian Catholic University, Brisbane, Queensland, Australia

Rhonda Horne  
Queensland Department of Education and Training, Brisbane, Queensland, Australia

**Marriott Ballroom 5 (Marriott Downtown)**

**187**

### **Linking Children's Literature, Mathematics, and the Young Child**

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

Participants will explore how to use quality children's literature as a major resource for all young children, ages 4–8, to develop number-sense ideas while engaged in reasoning and mathematical discourse. The speakers will use a variety of children's books to evaluate and develop investigations that meet appropriate learning expectations for young children.

Rita C. Janes  
Rita Janes Educational Consultants, St. John's, Newfoundland and Labrador, Canada

Elizabeth L. Strong  
Early Childhood and Literacy Consultant, St. John's, Newfoundland and Labrador, Canada

**White River Ballroom E (JW Marriott)**

**188**

### **Activities to Support Conceptual Understanding of Spatial Measurement**

(PreK–5) Gallery Workshop

This presentation will engage participants in various problems and activities that focus on the core concepts of length, area, and volume. The speakers will unpack the potential for these activities and lessons in helping students to develop conceptual understanding of measurement. Discussion will focus on ways of enhancing measurement lessons.

Lorraine Males  
Michigan State University, East Lansing

Shannon Sweeny  
Michigan State University, East Lansing

Nic Gilbertson  
Michigan State University, East Lansing

**White River Ballroom I/J (JW Marriott)**

1:00 P.M.–2:30 P.M.

**189**

### **Exploring 2-D and 3-D Geometry with Polydron Frameworks**

**(PreK–5) Gallery Workshop**

Revised standards call for introducing topics at lower grade levels. This presentation will engage participants in hands-on activities to explore and strengthen skills with two- and three-dimensional geometry, building models with Polydron Frameworks. Activities will include work with patterns, tessellations, polygrams, nets, polygons, and polyhedra.

Deborah Ann McAllister  
University of Tennessee at Chattanooga

Shirley Ann McDonald  
Ringgold Middle School, Georgia

Susan M. Bothman  
Ooltewah High School, Tennessee

**103/104 (JW Marriott)**

**190**

### **Watch Out! Whole! Translating Whole-Number Concepts to Fractional Numbers**

**(3–5) Gallery Workshop**

When children begin using fractional symbols and thinking, they need to assimilate their concepts of whole number to make room for rational numbers. The speaker will investigate some of the pivotal phases of understanding for children as they think about using the same “old” number symbols in new ways, and why identifying the whole unit matters.

Courtney Nelson  
STEPS Professional Development, Norwell, Massachusetts

**Marriott Ballroom 1/2 (Marriott Downtown)**

**191**

### **Geometry: It’s More than Vocabulary**

**(3–8) Gallery Workshop**

Developing conceptual understanding of geometry means more than learning vocabulary. This presentation will demonstrate hands-on geometry activities that incorporate conceptual thinking and vocabulary development.

Linda M. Gojak  
John Carroll University, University Heights, Ohio

**144/145 (Convention Center)**

**192**

### **I Spy Geometry around Me**

**(3–8) Gallery Workshop**

Explore children’s literature and engage in hands-on activities and games to discover, enhance, and make connections to geometry and measurement in the world around us. Investigate and construct 3-D solids, challenge your measuring abilities, and seek out shapes in your world. Receive a CD containing ready-made classroom activities.

Susan Troutman  
Rice University School Mathematics Project, Houston, Texas

Carolyn L. White  
Rice University School Mathematics Project, Houston, Texas

**124 (Convention Center)**

**193**

### **Just a Piece of Paper: Linking Geometry, Measurement, and Fractions**

**(3–8) Gallery Workshop**

Discover how one piece of paper with specific folds can be a vehicle for exploring topics of congruence, symmetry, polygon classification, and similarity. Make connections to measurement (area and perimeter), and use the activity to practice fraction topics, develop spatial visualization, and generate an interactive bulletin board.

Janice B. Koop  
Calvin College, Grand Rapids, Michigan

Mary J. DeYoung  
Hope College, Holland, Michigan

**Grand Ballroom II (JW Marriott)**

THURSDAY



1:00 P.M.–2:30 P.M.

**194**

### **Native American Beadwork and Geometric Thinking: Activities, Concepts, and Applications**

**(3–8) Gallery Workshop**

Experience active learning to develop numerous mathematical concepts involving geometry, measurement, data analysis, and statistical and algebraic reasoning using Native American beadwork. Participants will construct their own beadwork strip and use it to design mathematically rich, conceptually oriented instruction.

James Barta  
Utah State University, Salt Lake City

Chadd McGlone  
Trinity School of Durham and Chapel Hill, Durham,  
North Carolina

**Wabash Ballroom 2 (Convention Center)**

**195**

### **Come Take a Modeling Journey with Area**

**(6–8) Gallery Workshop**

This presentation will offer a journey through a middle school curriculum illustrating how area is the foundation model for whole-number multiplication, operations with fractions, the distributive property, and probability. Participants will investigate problems that frequently offer a challenge to students using manipulatives as visual models of area.

Erica A. Warren  
College Preparatory Mathematics, Sacramento, California

**White River Ballroom A/B (JW Marriott)**

**196**

### **How Active Is Your Interactive Whiteboard?**

**(6–8) Gallery Workshop**

Learn how to use interactive whiteboard technology in everyday math lessons. The speaker will present ways to create and use interactive whiteboard manipulatives to make connections in geometry and algebra. Audience participation is required!

Charlene Pope  
Promethea, Alpharetta, Georgia

**Sagamore Ballroom 3 (Convention Center)**

**197**

### **Developing Preservice Teachers' Algebra Knowledge through the 5-R Model**

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

Attendees will learn how to apply the 5-R (Realize, Review, Reflect, Revisit, Retain) model to preservice teachers. The speakers will share worksheets involving quadratic equations and algebraic inequalities. They will facilitate small-group discussions that emphasize teachers' content knowledge needs and pedagogical skills.

McKenzie A. Clements  
Illinois State University, Normal

Nerida F. Ellerton  
Illinois State University, Normal

**101/102 (Convention Center)**

**198**

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

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

Participants will make several items by paper folding. The speakers will discuss and demonstrate ways to use paper folding to introduce, review, enhance, or facilitate geometric topics, including geometric shapes, parallel and perpendicular lines, area, and perimeter. Some paper folding will connect to children's literature. Handouts will be available.

Deborah A. Crocker  
Appalachian State University, Boone, North Carolina

Betty B. Long  
Appalachian State University, Boone, North Carolina

**203/204 (Convention Center)**

1:00 P.M.–2:30 P.M.

**199****Connecting and Communicating in Math Class Using Graphic Organizers****(6–12) Gallery Workshop**

Help grades 6–12 students build on their prior knowledge and connect it to new concepts and skills by using graphic organizers. The presenter will share rule-of-four link sheets, sorts, matching activities, concept splashes, and webs. The participants will gain access to more than 200 organizers and directions for creating and using them in math class.

Carol A. Hynes  
Leominster Public Schools, Massachusetts

**Marriott Ballroom 7/8 (Marriott Downtown)****200****Have You Got the Right Image? Coordinate Plane Transformations****(6–12) Gallery Workshop**

Manipulatives and the TI-Nspire Navigator will help participants investigate strategies to engage students in generalizing the pattern of sets of ordered pairs under various transformations. After exploring the image of a geometric figure, each participant will create a picture and its image in a variety of transformations. The speakers will model and discuss assessment strategies.

Margaret Bambrick  
Volusia County Schools, DeLand, Florida

Ruth Casey  
Teachers Teaching with Technology, Frankfort, Kentucky

**105/106 (Convention Center)****201****NASA's Pi in the Sky****(6–12) Gallery Workshop**

What exactly is pi? And what's a radian? Use mathematics to investigate scientific phenomena in astronomy. Free NASA materials will be available.

Janet L. Moore  
National Air and Space Administration, Rohnert Park, California

**Grand Ballroom IV (JW Marriott)****202****Touch It, Create It, Learn It: Hands-On Gives Ownership****(6–12) Gallery Workshop**

Classroom-ready activities will showcase how personalizing work gives students ownership of both the product and the mathematical content. Participants will engage in creating designs and 3-D shapes with rotational and reflective symmetry, connecting symbolic algebra to surface area and volume, and finding patterns on student-created materials.

Nancy Elaine Bergfeld  
Valley Park School District, Mississippi

Trish Goddard  
Missouri State University, Springfield

**121/122 (Convention Center)****203****Transform Your Classroom and Construct Learning with Geometry Golf****(6–12) Gallery Workshop**

Use golf and miniature golf to engage students in creativity, transformational geometry, length and angles measurement, estimation, and physics. Learn how to construct holes-in-one on miniature golf holes with and without technology, create a miniature golf hole, and create and play protractor golf, adapted for prealgebra, geometry, or trigonometry classes.

Nancy Norem Powell  
Bloomington High School, Illinois

**Sagamore Ballroom 5 (Convention Center)****204****Deal or No Deal? Fair or Not Fair?****(9–12, Higher Education) Gallery Workshop**

Participants will engage in an interactive presentation whereby they will calculate mathematical measures of mean, median, expectation, and fairness in order to analyze the offers from the banker in the game show *Deal or No Deal* and predict offers as the game progresses until the final deal is accepted.

Jason Gershman  
Nova Southeastern University, Fort Lauderdale, Florida

**Grand Ballroom VII (JW Marriott)**

1:00 P.M.–2:30 P.M.

**205**

### **Student-Centered Projects to Enrich a Precalculus Class**

(9–12, Higher Education) Gallery Workshop

The presenters will share projects that connect directly to topics in the precalculus curriculum, using real data, information, and problems that students have developed. Some projects involve collecting data from a pendulum, bouncing ball, or cooling water. Attendees will get ready-to-use handouts and samples of students' work.

Masha Albrecht  
Berkeley High School, California

Dan Plonsey  
Berkeley High School, California

**Sagamore Ballroom 1 (Convention Center)**

**206**

### **The Fun Grows Exponentially!**

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

Explore teaching exponential growth through engaging, problem-solving activities. Come prepared to participate as students and then reflect as teachers. The speakers will share their experiences teaching these activities in an algebra classroom. They will discuss the challenges involved with introducing students to inquiry and exploration.

Carla Gerberry  
California State Polytechnic University, Pomona

Lindsay Umbeck  
Purdue University, West Lafayette, Indiana

**Sagamore Ballroom 7 (Convention Center)**

**207**

### **Invisible Culture: Locating Values in Mathematics Education**

(Preservice and In-Service)  
Gallery Workshop

Is mathematics neutral? What other lessons, aside from math, do the materials we provide to students contain? What values do the problems we choose and textbooks we share imply and transmit? The speaker will analyze textbooks, trade books, and standardized tests and discuss whether these match the values we espouse. A detailed electronic handout will be available.

Anita Bright  
George Mason University, Fairfax, Virginia

**205/206 (Convention Center)**

2:00 P.M.–3:00 P.M.

**208**

### **Identity and Power: Moving beyond the Achievement Gap**

(General Interest) Research Session

This interactive presentation will discuss the roles of identity and power (e.g., racism, sexism, ability, classism, the politics of language) in mathematics learning and teaching. The speakers will emphasize implications for classroom practice. Their goals are to engage teachers to understand better the hidden work that students do in classrooms and to reconceptualize equity in the learning environment.

Rochelle Gutierrez  
University of Illinois at Urbana-Champaign

Beatriz D'Ambrosio  
Miami University, Oxford, Ohio

**Grand Ballroom VI (JW Marriott)**

**209**

### **Make an Interactive Whiteboard for Less than \$200**

(General Interest) Session

You can create a low-cost, easy-to-use interactive whiteboard using a computer, projector, Wii remotes, and infrared pens. Come see a demonstration of such a system. Receive a list of helpful Web sites, freeware, and low-cost software that the system supports, and learn how to make a system for your classroom.

Kenneth James Thielman  
Math and Science Academy, Woodbury, Minnesota

**Sagamore Ballroom 6 (Convention Center)**

**210**

### **Measurement in American Indian Culture**

(General Interest) Session

The presenter has been working with fluent speakers from various native language groups of North America on precise standard and nonstandard measurement terms, and literal translations of those terms from before and after European contact. Participants will receive sample lessons that can be adapted to any language and used in grades K–16 classrooms.

Richard A. Sgarlotti  
Hannahville Indian School, Wilson, Michigan

**Grand Ballroom X (JW Marriott)**

2:00 P.M.–3:00 P.M.

**211**

### **Our Homework Assignment Is to Watch TV? Sweet!**

**(General Interest) Session**

Mathematics is all around, but many do not see it. This presentation will demonstrate how you can use games from the popular game show *The Price is Right* in courses from quantitative literacy to mathematical modeling. The speakers will share examples of students' work and a classification of pricing games by mathematical difficulty.

Joe A. Stickle  
Millikin University, Decatur, Illinois

Paula R. Stickle  
Millikin University, Decatur, Illinois

**141/142 (Convention Center)**

**212**

### **Teaching Mathematics to English Language Learners (ELLs)**

**(General Interest) Session**

This presentation will give straightforward advice on how to teach mathematics to ELLs. The speakers will describe strategies for facilitating classrooms discussions, helping ELLs read and interpret mathematics textbooks, and helping them tackle word problems.

Gladis Kersaint  
University of South Florida, Tampa

Denisse R. Thompson  
University of South Florida, Tampa

**500 Ballroom (Convention Center)**

**213**

### **Connecting Geometry and Algebra in the Grades K–2 Classroom**

**(PreK–2) Session**

This presentation will focus on effective ways for incorporating and connecting geometric and algebraic ideas in the primary school classroom. The presenters will show viable teaching methods and connections to higher-level mathematics. Video clips and students' work will highlight these concepts. Come join us as we explore these exciting mathematical ideas.

Zachary M. Champagne  
Duval County Public Schools, Jacksonville, Florida

Claire M. Redmond  
Duval County Public Schools, Jacksonville, Florida

**Marriott Ballroom 9/10 (Marriott Downtown)**

**214**

### **Effective Games and Practices That Lead to Students' Success**

**(PreK–2) Session**

Be more efficient and selective about time devoted to number. A ready-to-use handout of highly engaging, repeatable activities and instructional strategies will help you enhance number sense and build confidence in your students.

Laura L. Choate  
Fallbrook Union Elementary School District, California

**Grand Ballroom VIII (JW Marriott)**

**215**

### **The Power of Five**

**(PreK–2) Session**

Research shows young children need time to develop a true sense of five, and later 10, yet schools continue to push children to begin addition and subtraction as early as preschool. The speaker will explain several strategies that have proven effective and provide materials for participants to take home for use in their classrooms.

Myra J. Collins  
Northeast Regional Professional Development Center;  
Truman State University, Kirksville, Missouri

**125 (Convention Center)**

**LCR 216**

### **The Geometry of Letters: Preschoolers and Geometric Reasoning**

**(PreK–2) Session**

Our youngest students use geometric reasoning to recognize, identify, and compare letters, words, punctuation marks, numerals, shapes, colors, and objects. Come explore the developmental progression of three-to-five-year-olds as they reason geometrically about the parts and wholes of letters, shapes, and other objects in their world.

Kateri Thunder  
University of Virginia, Charlottesville

Robyn Davis  
Charlottesville City Schools, Virginia

Dana Carrico  
Charlottesville City Schools, Virginia

**123 (Convention Center)**

THURSDAY



2:00 P.M.–3:00 P.M.

**LOR 217**

**Let's Talk Geometry! Practical Strategies for Developing Advanced Geometric Vocabulary**

**(PreK–5) Session**

“This shape, um, . . .” Imagine a student trying to communicate ideas about shapes: it would be hard without the appropriate vocabulary. Come learn various practical, research-based strategies you can implement in your own classroom. Samples will be shared to showcase how advanced students’ understanding of geometry and the corresponding vocabulary can be.

Tulita Casa  
University of Connecticut, Storrs

**Wabash Ballroom 1 (Convention Center)**

**218**

**See the Math! Sharpening the Definition of Visual Learning Practice**

**(PreK–5) Session**

Ever-emerging research and quality classroom practices reinforce the important role of visual learning strategies in mathematics teaching. The presenter will give examples of these strategies. He will also give evidence of how to help students understand new concepts better and make connections within math, across the curriculum, and to their lives.

Stuart J. Murphy  
Author, Boston, Massachusetts

**Hall F (Convention Center)**

**LOR 219**

**Geometry in Quilts: We've Got It Covered!**

**(3–5) Session**

The speakers will focus on a variety of children’s literature books about quilts, and how quilts can be integrated into the mathematics curriculum for grades 3–5 and used as encouragement for mathematics. Participants will do hands-on activities using manipulatives to investigate some interesting geometry problems from these books.

Betty B. Long  
Appalachian State University, Boone, North Carolina

Deborah A. Crocker  
Appalachian State University, Boone, North Carolina

**Sagamore Ballroom 4 (Convention Center)**

**LOR 220**

**Strategies for Differentiated Mathematics Instruction**

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

Participants will view differentiated mathematics instruction enacted in the classroom through video that the presenter produced. Various components of differentiated instruction will be discussed and modeled.

Thomasenia Adams  
University of Florida, Gainesville

**201/202 (Convention Center)**

**221**

**Alongside Intellect: Affect in Mathematics Learning**

**(3–8) Session**

Why do students rush early to class bursting with ideas? What has students so lost in math that they jump at the bell? These intangible details are examples of affect, the emotions, attitudes, and beliefs that influence learning. The speakers will present theories of affect and ways that teachers can improve students’ affect in math class.

Eric L. Mann  
Purdue University, West Lafayette, Indiana

Heather Carmody  
Park Tudor School, Indianapolis, Indiana

**Wabash Ballroom 3 (Convention Center)**

**222**

**Classroom Questions That Focus on Big Ideas Bring Big Results!**

**(3–8) Session**

This presentation will explore four issues: what the big ideas are in each strand, how we can craft questions that make those big ideas more visible to students, how teaching through big ideas supports differentiated instruction, and how teaching through big ideas helps our students achieve greater mathematical success.

Marian Small  
University of New Brunswick, Fredericton, Canada

**Grand Ballroom V (JW Marriott)**



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August 9–11, 2011 | Baltimore, Maryland

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2:00 P.M.–3:00 P.M.

**223**

### Ideas for Supporting Students in Becoming Independent Problem Solvers

(3–8) Session

This session will show how Japanese teachers support their students in developing skills to become independent problem solvers. These skills include using visual representations such as tape diagrams, number-line representations, area models, and note taking.

Akihiko Takahashi  
DePaul University, Chicago, Illinois

**109/110 (Convention Center)**

**224**

### Math A to Z—Applets-Zeta Functions: Math Fun for the Classroom

(3–8) Session

Fire up your students with technology that promotes creativity and practical application. Follow the mushers in the Iditarod dog sled race in Alaska. How fast can you spend a million dollars? Create colorful 3-D designs. Learn to create an art composition using only geometric shapes, and take home a variety of integrated lesson ideas.

Julia D. Lott  
Gilbert Public Schools, Arizona

Mary Rozum-Pratto  
Gilbert Public Schools, Arizona

**101/102 (JW Marriott)**

**225**

### The History of Mathematics for Students: Increasing Motivation and Understanding

(3–8) Session

Do your students know the historical roots of the math they are learning? Do they see math as a human endeavor with personal feeling rather than a set of lifeless facts and rules? Let's explore a history of number systems and the metric system and brainstorm strategies for using such knowledge to help students see connections and meanings in math.

Rong-ji Chen  
California State University San Marcos

Cheng-Yao Lin  
Southern Illinois University Carbondale

Hsing-Wen Hu  
University of Wisconsin—River Falls

**Marriott Ballroom 3/4 (Marriott Downtown)**

**LOR 226**

### Let's Tessellate!

(6–8) Session

The presenter will share an eyes- and hands-on tessellation unit constructed for middle school students. She will begin by asking, "Why tessellate?" and end with a portfolio of students' work. A list of resources and handouts will be available.

Rebecca J. Neuwirth  
University School of Milwaukee, Wisconsin

**103/104 (Convention Center)**

**227**

### Who Am I? Mathematical Identity in Struggling Eighth-Grade Students

(6–8) Session

Mathematical identity is a potentially powerful lens for analyzing students' achievements, attitudes, and beliefs about learning mathematics. Research from in-depth interviews with struggling eighth-grade students offers insights into the experiences, encounters, and interventions that shape students' identities as mathematics learners.

Pamela J. Edwards  
Punahou School, Honolulu, Hawaii

**Grand Ballroom I (JW Marriott)**

**LOR 228**

### Geometry: Making the Connections

(6–12) Session

The speakers will look at how geometry connects to other topics in mathematics and other subjects. See how algebra, probability, data analysis, measurement, art, history, and science interrelate and show reasoning and sense making in a variety of applications.

Fred Dillon  
Board of Directors, National Council of Teachers of Mathematics; Strongsville City Schools, Ohio

Alyssa Holsar  
Strongsville City Schools, Ohio

**107/108 (Convention Center)**



2:00 P.M.–3:00 P.M.

## 229

### Mean, Median, Mode: Which One Is Your Pencil?

(6–12) Session

This activity uses pencils of different lengths to reinforce the concepts of mean, median, and mode as well as stem-and-leaf plots, estimation, and measurement. Extensions have students create box-and-whisker plots and explore powers of two. The activity incorporates measurement standards for grades 6–8 as well as data analysis and probability and statistics standards for grades 6–12.

Kathleen Mittag  
University of Texas at San Antonio

**Grand Ballroom III (JW Marriott)**

## LOR 230

### Visualizing Geometry: Connecting Geometric Ideas to the Real World

(6–12) Session

Student-made media presentations will illustrate geometric concepts and principles found in the real world. Topics such as symmetry, patterns, polygons, and measurement will be explored as they relate to art, architecture, nature, and personal interests.

Stephanie H. Cooperman  
Chatham Middle School, New Jersey

Neil D. Cooperman  
Millburn High School, New Jersey

**207 (Convention Center)**

## 231

### What's the Probability I Can Draw That?

(6–12) Session

Have fun conceptualizing probability and geometry by visualizing sample spaces. Simple and compound probability problems can be easily represented and solved using drawings and diagrams. These representations help students describe probability as fractions and percentages leading to a more intuitive understanding of probability.

Janet R. Tomlinson  
Carnegie Learning, Inc., Pittsburgh, Pennsylvania

**Marriott Ballroom 6 (Marriott Downtown)**

## 232

### Schools as Teaching Tools: Real-World Architectural Design Problems

(9–12) Session

Using your school building as a teaching tool is one of the strongest ways to help students see connections among data, architectural design, and a building's energy use. Hear about a unique collaboration between math teachers and the Chicago Architecture Foundation to create a tool for helping students solve real-world architectural problems.

Jennifer Masengarb  
Chicago Architecture Foundation, Illinois

Mary Wiltjer  
Glenbrook South High School, Glenview, Illinois

Ken Indeck  
Wheeling High School, Illinois

**White River Ballroom C/D (JW Marriott)**

## 233

### Knowing the Vocabulary: A Key to Understanding in College Algebra

(9–12, Higher Education) Session

We will present students' work that provides insight into college algebra students' understandings about important concepts such as function, equation and domain. Our data on instructors' and students' opinions about the role of vocabulary will be shared. Then, we'll lead a discussion about implications for high school and college classrooms.

Susan Gay  
University of Kansas, Lawrence

Ingrid Peterson  
University of Kansas, Lawrence

**143 (Convention Center)**



2:00 P.M.–3:00 P.M.

**234**

**The Trigonometry of Endurance:  
Teaching Geometry through  
Shackleton's Voyage**

(9–12, Higher Education) Session

The speakers will present an inquiry-based geometry course that investigates the footings of celestial navigation. The course tells the mathematical story underlying Shackleton's incredible voyage: crossing 800 miles of the Drake Passage with only a sextant and a watch. This story is told through geometry problems that high school students can solve.

Justin Dimmel  
University of Michigan, Ann Arbor

Brendan Kenny  
Web Developer, Austin, Texas

**120 (Convention Center)**

**235**

**Understanding AP Calculus Concepts  
Using Action-Consequence Documents**

(9–12, Higher Education) Session

According to an analysis of AP Calculus multiple-choice items, students have difficulty with conceptual problems. This talk will present an inquiry-based approach to understanding calculus concepts using action-consequence software documents. Students using such documents purposely act on mathematical objects, observe the consequences of these actions and reflect on their mathematical meaning.

Wade Ellis  
West Valley College, Saratoga, California

Thomas P. Dick  
Oregon State University, Corvallis

**111/112 (Convention Center)**

**236**

**Exploring Areas of Triangles: Five  
Students, Five Different Perspectives**

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

This interactive presentation will focus on students' approaches in finding areas of triangles. Explore strategies and activities that engage students, facilitate classroom discourse, and promote conceptual understanding. Dynamic technology software will be presented to illustrate multiple perspectives in connecting geometric and algebraic notions.

Farshid Safi  
College of New Jersey, Ewing

George J. Roy  
University of South Florida Saint Petersburg

**140 (Convention Center)**

**237**

**Exploring Preservice Teachers'  
Mathematical Knowledge for  
Teaching**

(Higher Education, Preservice and In-Service) Session

This research session will highlight results from a current study examining preservice teachers' mathematical knowledge for teaching (MKT). The study also identified ways in which this knowledge influences and is influenced by a math methods course. The speakers analyzed pre- and post-MKT measures, course assignments and video, and video data on postcourse implementation, survey, and teaching.

Rebecca Mitchell  
Boston College, Chestnut Hill, Massachusetts

Katherine A. Ariemma  
Boston College, Chestnut Hill, Massachusetts

**Sagamore Ballroom 2 (Convention Center)**

THURSDAY



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to submit your proposal!

2:00 P.M.–3:00 P.M.

**238**

### **A Doctorate in Mathematics Education: An Acute Shortage Exists**

(Preservice and In-Service) Session

The speakers will discuss the shortage of doctorates in mathematics education, job opportunities, and recruiting doctoral students. They will make suggestions for identifying institutions with doctoral programs and share challenges of classroom teachers returning as graduate students.

Robert Reys  
University of Missouri—Columbia

Robert Glasgow  
Southwest Baptist University, Bolivar, Missouri

Christa Jackson  
University of Kentucky, Lexington

**White River Ballroom G/H (JW Marriott)**

**239**

### **Beyond “Five Little Monkeys”—Evaluating the Quality of Children’s Literature**

(Preservice and In-Service) Session

This presentation will introduce a Web site developed for grades K–8 teachers interested in sharing lessons that integrate math and literature. The speaker will discuss a new tool for evaluating the quality of children’s literature available for teaching mathematics. She will also critique a selection of popular children’s books commonly used in math classes.

Ann C. LeSage  
University of Ontario Institute of Technology, Oshawa, Ontario, Canada

**White River Ballroom F (JW Marriott)**

**240**

### **Using The Geometer’s Sketchpad® 5 for Professional Development**

(Preservice and In-Service) Session

Professional development provides teachers with enhanced mathematical knowledge and additional ways of teaching. Sketchpad 5 is a tool that will enable both teachers and their students to explore mathematical ideas and generate hypotheses. Participants will engage in these practices in geometry, algebra, and number.

Judith E. Jacobs  
University of Michigan, Ann Arbor

**128 (Convention Center)**

2:30 P.M.–3:30 P.M.

**ew 240.1**

### **Multiply Engagement with SMART Notebook™**

(General Interest) Exhibitor Workshop

Come learn how to use *SMART Notebook* Math Tools to enhance good teaching and increase students’ achievement.

SMART Technologies  
Calgary, Alberta, Canada

**116 (Convention Center)**

**ew 240.2**

### **Teaching Fractions: Visual Models, Rich Language, and Free Online Tools**

(General Interest) Exhibitor Workshop

Learn how to use Conceptua Math to foster deep understanding of fractions. See how online teachers’ tools with dynamic visual models can help you illustrate topics and build cognitive pathways to numeric procedures. Examine the rich language and sequential scaffolding in the premium activities, and apply these methods to your classroom practice.

Conceptua Math  
Petaluma, California

**208 (Convention Center)**

**ew 240.3**

### **Singapore Math: Bar Model Method**

(General Interest) Exhibitor Workshop

Learn to use the bar model method in solving basic and not-so-basic problems from the Singapore classrooms. Ban Har Yeap will model good questioning techniques used to help students solve word problems involving whole numbers, fractions, ratio and percent.

Marshall Cavendish International  
Singapore

**209 (Convention Center)**

THURSDAY

2:30 P.M.–3:30 P.M.

**ew 240.4**  
**Connected Mathematics Program (CMP)2 and CCS: A Winning Combination!**

**(6–8) Exhibitor Workshop**

Learn why Pearson's research-proven NSF math curriculum is your best choice for teaching to the Common Core Standards (CCS) in your middle grades classroom. See how CMP's problem-based approach makes content accessible to all learners, with technology that supports both teachers and students.

Pearson  
Upper Saddle River, New Jersey

**117 (Convention Center)**

3:00 P.M.–4:30 P.M.

**241**  
**Two P's in a Pod**

**(PreK–2) Gallery Workshop**

Are you interested in learning about podcasting for your early childhood class? If so, this presentation is for you. The speakers will share many examples of podcasts created by students, along with ideas and activities. Learn how to integrate this technology into developing mathematical reasoning and communication skills. Podcasting directions will be given.

Minerva Harrell Smith  
Murfreesboro City Schools, Tennessee

Cindy L. Cliche  
Rutherford County Schools, Murfreesboro, Tennessee

**Grand Ballroom VII (JW Marriott)**

**242**

**Building Bridges through Design: Connecting Math, Science, and Engineering**

**(PreK–5) Gallery Workshop**

Build a number of bridges, both literal and figurative, using basic materials in this hands-on, interactive session. Learn about the importance of geometry in bridge design, design your own bridge, and explore the connections among math, science, and engineering. Bridge the gap between in-school learning and real-world problem solving!

Darshita N. Shah  
Museum of Science, Boston, Massachusetts

Melissa Higgins  
Museum of Science, Boston, Massachusetts

**126/127 (Convention Center)**

**243**

**Cases for Coaches: Professional Development for Elementary School Mathematics Specialists**

**(PreK–5) Gallery Workshop**

This presentation is for those serving as an elementary school math specialist, coach, or resource teacher. Participants will discuss case studies regarding mentoring activities involving mathematics content, pedagogy, and relationships. The presentation draws from the work of the Elementary Mathematics Specialists and Teacher Leaders project (<http://mathspecialists.com>).

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

Beth Kobett  
Stevenson University, Eldersburg, Maryland

Jonathan Wray  
Howard County Public Schools, Ellicott City, Maryland

**105/106 (Convention Center)**

THURSDAY



Have a tip to share with a 1st time attendee? Look for a 1st Timer wearing a blue name badge ribbon!

3:00 P.M.–4:30 P.M.

## 244

### Engaging All Children with Number Sense and Problem Solving

#### (PreK–5) Gallery Workshop

The speaker will offer strategies, including using manipulatives, to develop number sense and problem-solving skills. She will demonstrate the power of mathematical discourse in developing concepts, reasoning, and vocabulary. She will engage attendees in activities that develop place value, patterns, estimation, fractions, and problem solving. Handouts will be available.

Donna L. Knoell  
Educational Consultant, Shawnee Mission, Kansas

**White River Ballroom A/B (JW Marriott)**

## 245

### Number Bases in Second Grade? It's All about Place Value

#### (PreK–5) Gallery Workshop

Experience how to introduce students to number systems and place value using units of continuous quantities of length, area, and volume. Explore bases less than ten to enhance the understanding of regrouping in a given number system. Modeling place-value units in other bases leads to meaningful conceptual understanding of the decimal system.

Maria DaSilva  
University Laboratory School, Honolulu, Hawaii

Fay Zenigami  
University of Hawaii, Curriculum Research and Development Group, Honolulu

Seanyelle Yagi  
Kalakaua Middle School, Honolulu, Hawaii

**203/204 (Convention Center)**

## 246

### Paradigm Shift in Problem Solving: A Singapore Approach

#### (PreK–5) Gallery Workshop

With this method of solving word problems, students develop a pictorial representation, allowing them to see the big picture. Plan to learn the Singapore method first-hand from teachers and students interacting and solving problems. Algebra and pictures connect naturally, and any battle between students and word problems becomes a thing of the past.

Robert J. Hogan  
North Middlesex School District, Massachusetts

Sarah A. Schaefer  
Bolles School, Jacksonville, Florida

**124 (Convention Center)**

## 247

### Math in Your Feet: Teaching Geometry through Rhythm and Movement

#### (3–5) Gallery Workshop

Combining math and dance is a powerful way to make abstract math concepts concrete for young, kinesthetic learners. Explore collaborative movement-based lessons that increase students' understanding of mathematical topics such as spatial awareness, congruence, angles, transformation, and symmetry.

Malke Rosenfeld  
Teaching Artist, Bloomington, Indiana

**Sagamore Ballroom 1 (Convention Center)**

## 248

### Rich, Quantitative Representations to Reason about Algebraic Notation

#### (3–5) Gallery Workshop

What is algebra, anyway? Use straws, sketches, and diagrams to make sense of mathematical situations, then generalize using invented notation. Reason abstractly and quantitatively about a variety of problems to derive the advantages that algebraic notation offers the upper elementary school learner.

Frazer Boergadine  
The Math Learning Center, Salem, Oregon

**Marriott Ballroom 7/8 (Marriott Downtown)**

THURSDAY



# Move beyond the mathematics you expect your students to learn.



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## Future Topics for the Essential Understanding Series:

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- Geometric Shapes and Solids for Grades 3–5
- Expressions and Equations for Grades 6–8
- Measurement for Grades 6–8
- Data Analysis and Statistics for Grades 6–8
- Geometric Relationships for Grades 9–12
- Proof and Proving for Grades 9–12
- Statistics for Grades 9–12



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3:00 P.M.–4:30 P.M.

**249**

### **Math Fun and Games with Two Guys**

#### **(3–8) Gallery Workshop**

Throughout history, humans have turned to games for both recreation and education. Many new and historic games have a place in the mathematics classroom. Come explore some games with us and learn how to use them in your classroom to enhance your curriculum.

Tres Wells

Albemarle County Public Schools, Charlottesville, Virginia

Justin C. Hose

Frederick County Public Schools, Winchester, Virginia

**Grand Ballroom IV (JW Marriott)**

**250**

### **Geometry and Geology: Connections between Mathematics and Earth Science**

#### **(6–8) Gallery Workshop**

Enrich your students' study of two- and three-dimensional geometry through connections to earth science. Participants will learn how to identify minerals on the basis of their internal geometric structure, how to locate the epicenter of an earthquake, how GPS systems work, and how to explain the geometry of plate tectonics.

Jason L. Ermer

University of Texas at Austin

Lynn Kirby

University of Texas at Austin

**Sagamore Ballroom 7 (Convention Center)**

**251**

### **Hundreds-Grid: Keys to the Kingdom—Fractions, Decimals, Percents**

#### **(6–8) Gallery Workshop**

Use hundreds grids as models for solving word problems related to fractions, decimals, and percent. The hundreds grid is called the “keys to the kingdom” because it is a dependable model usable for many kinds of mathematics situations. It provides a context for students' thinking, communicating, reasoning, and problem solving. Explore problems and situations and see samples of students' work.

Trudy Mitchell

Retired, San Diego, California

**144/145 (Convention Center)**

**252**

### **What Our Textbooks Don't Tell Us about Fractions**

#### **(6–8) Gallery Workshop**

Why are fractions so hard to teach? Why are they so hard to understand? This interactive workshop explores fractions from a developmental perspective. We will use everyday tools to support students as they develop their conceptual understanding, and we will investigate a variety of procedures to work with the four arithmetic operations.

Kit Norris

Consultant, Southborough, Massachusetts

**Grand Ballroom II (JW Marriott)**

**253**

### **From Squares to Conics: Hands-On Geometry Using Free NCTM Resources**

#### **(6–12) Gallery Workshop**

Geometry can be fun, tactile, interactive, and rich in problem solving. Come explore and enjoy a variety of ready-to-use resources about area, perimeter, fractals, tessellations, and conic sections. Best of all, everything is available free from the NCTM Illuminations project ([illuminations.nctm.org](http://illuminations.nctm.org)).

Julia Zurkovsky

National Council of Teachers of Mathematics, Reston, Virginia

**Sagamore Ballroom 5 (Convention Center)**

**254**

### **Models for Challenging Word Problems: Finding Solutions the Singapore Way**

#### **(6–12) Gallery Workshop**

You know the basics of model drawing. Now let's kick things up a notch! You'll learn how to solve challenging multistep and before-and-after problems, then move on to prealgebra, algebra, and more. Get ready for some high-intensity learning!

Anni Elizabeth Stipek

Staff Development for Educators, Peterborough, New Hampshire

**Marriott Ballroom 1/2 (Marriott Downtown)**

THURSDAY

3:00 P.M.–4:30 P.M.

**255**

### **AB Calculus and Cooperage: A Project of a Lifetime!**

(9–12) Gallery Workshop

Come learn about a real-life project that required students to apply calculus for an international company, Kelvin Cooperage. The students presented their findings to the company directly. Come hear about the project from a student. The teacher will also challenge participants to complete the project in the workshop. Participants will receive the information to take back and apply in their own classrooms.

Tracie Catlett  
Louisville Collegiate School, Kentucky

**101/102 (Convention Center)**

**256**

### **FlexBook Workshop: Using Twenty-first-Century Teaching Tools in the Classroom**

(9–12) Gallery Workshop

The presenters will share a rich, new source of educational material from the Internet they have used to create individualized textbooks for both the traditional classroom and individual instruction in Algebra 1 and geometry classes. Imagine that as your students read about the Pythagorean theorem, they can click on a presentation of a proof.

Julia Ash  
Natomas Charter School's Individualized Learning Program, Sacramento, California

Rochelle Ferran  
Natomas Charter School, Sacramento, California

Neeru Khosla  
CK-12 Foundation, Palo Alto, California

**White River Ballroom I/J (JW Marriott)**

**257**

### **Play-Doh® in Calculus?**

(9–12) Gallery Workshop

Yes! Come see how using Play-Doh can lay the foundation for the disk, washer and shell methods for volumes of revolution. You, too, will find your students saying, "Volumes of revolution are *easy!*"

Tammy Popp  
Oakville High School, Saint Louis, Missouri

**White River Ballroom E (JW Marriott)**

**258**

### **Probability Problems and Experiments**

(9–12) Gallery Workshop

Students can best understand probability by experiencing it. Hands-on experiments and carefully selected problems can help students make sense of how and why probability properties work. Participants will do experiments to demonstrate fundamental ideas such as independent and dependent events and expected value, and they will see interesting problems and activities that get students involved.

Richard Rukin  
Evanston High School, Illinois

**Grand Ballroom IX (JW Marriott)**

**259**

### **It's Not So Complex! Transforming Your Perspective of Complex Numbers**

(9–12, Higher Education) Gallery Workshop

With a greater emphasis on complex numbers in the Common Core Standards for mathematics, teachers must understand complex numbers beyond the zeros of a polynomial. Using GeoGebra and the TI-Nspire computer algebra systems, participants will transform their perspective of complex numbers by exploring the geometry of complex numbers and their operations.

Steve Phelps  
Madeira City Schools, Cincinnati, Ohio

Troy Jones  
Westlake High School, Saratoga Springs, Utah

**Sagamore Ballroom 3 (Convention Center)**

3:00 P.M.–4:30 P.M.

## 260

### Classroom-Level Assessment That Determines and Meets Individual Students' Needs

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

Learn how to create and collect material for a classroom-level assessment program that determines individual students' needs and how to meet them for any lesson. Discuss how to use the collected data to set up your lesson, determine your instructional mode, determine strategic student groups, and create differentiated questioning and worksheets.

Allan E. Bellman  
University of California, Davis

**205/206 (Convention Center)**

## 261

### Nontypical Investigations in Geometry for 2011

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

What is the Nagel segment, and how do you construct it? What are all the Archimedean tilings? What is Pick's formula? What is origamics? Can you solve some of the challenging geometry constructions needed to design the stained glass windows and tracery in Gothic cathedrals? If any of these are new to you, come join us as we explore some not-so-typical and very cool geometry investigations.

Michael Serra  
Consultant, San Francisco, California

**Marriott Ballroom 5 (Marriott Downtown)**

## 262

### Use Ethnomathematics to Enhance the Relevance of Geometry and Algebra

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

Using a Lakota star quilt, the speaker will explore concepts such as Cartesian graphing, symmetry groups, properties of geometry, relationships among linear equations, and areas of finite regions. Participants will see how math can come alive across disciplines and cultures.

Jennifer Rodin  
Oglala Lakota College, Kyle, South Dakota

**103/104 (JW Marriott)**

## 263

### Closing the Gap: Transform Strugglers into Successful Students

(Preservice and In-Service)  
Gallery Workshop

How can we engage unmotivated students or differentiate without lowering standards? How do successful teachers create discourse and learning communities among special-needs and English-language-learner students? Learn how teachers turned their inclusion classes around. Share video clips, and easily learned, highly effective techniques.

Lucy West  
Metamorphosis Teaching Learning Communities, New York, New York

Kristin Balentine  
Aurora Public Schools, Colorado

Michelle Baughman  
Aurora Public Schools, Colorado

**Wabash Ballroom 2 (Convention Center)**



## 264

### New Teacher Workshop and Kickoff

(Preservice and In-Service)  
Gallery Workshop

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

**121/122 (Convention Center)**



3:30 P.M.–4:30 P.M.

**LOR 264.1**

**Learn↔Reflect Reflection Session**

**(General Interest) Session**

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

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

**Wabash Ballroom 1 (Convention Center)**

**265**

**Linking Diagnostic Assessments to Interventions for Students with Disabilities**

**(General Interest) Session**

This presentation will center on foundational strategies and conceptual approaches, such as the research-based CSA (concrete, semiconcrete, abstract) model, for effective mathematics teaching for students with disabilities. The speakers will share examples of interventions and assessment strategies, including samples of students' work, pencasts, and videos.

Amy Lingo  
University of Louisville, Kentucky

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

**Marriott Ballroom 6 (Marriott Downtown)**

**266**

**Mathematics Curriculum Implementation and Teaching in the United States and China**

**(General Interest) Research Session**

Presenters will share pivotal findings from an international exchange meeting among U.S. and Chinese mathematics educators in Shanghai in 2010. Meeting participants compared approaches to curriculum reform and teaching in both countries. This presentation will focus on important differences and overlaps and possible points of collaboration and shared learning.

Janine Remillard  
University of Pennsylvania, Philadelphia

Patrick Scott  
New Mexico State University, Santa Fe

Myong-Hi Kim  
State University of New York—College at Old Westbury

**207 (Convention Center)**

**267**



**Math Lessons from Research**

**(General Interest) Session**

What does the research say that provides reliable guidance to improving mathematics education? The speakers will draw several “lessons” from research, findings that support visions of research-based approaches to mathematics education, and information from recent national reports.

Clements' contributions have led to the development of new mathematics curricula, teaching approaches, teachers' training initiatives, and models of “scaling up” interventions. He serves on the Common Core committee of the National Governor's Association and the Council of Chief State School Officers, helping to write national academic standards.

Douglas Clements  
University at Buffalo, State University of New York

Julie Sarama  
University at Buffalo, State University of New York

**Sagamore Ballroom 4 (Convention Center)**

3:30 P.M.–4:30 P.M.

**268**

### The Influence of Mathematics Curriculum Implementation Strategies on Students' Learning

(General Interest) Session

This presentation will compare two districts' approaches to mathematics curriculum adoption and their implication for teachers curriculum use in the classroom. The speakers present a framework for understanding the interconnected relationship among the teachers' approaches, instructional tasks, and classroom discourse, with a focus on the unintended consequences.

Mary N. Gichobi  
Iowa State University, Ames

Comfort Akwaji-Anderson  
Iowa State University, Ames

**201/202 (Convention Center)**



**268.1**

### Journal-Writing Tips

(General Interest) Session

This session will be a collaboration of NCTM's journals—*Mathematics Teacher*, *Teaching Children Mathematics*, and *Mathematics Teaching in the Middle School*. Participants will be given ideas and suggestions for writing a manuscript for feature in one of the journals. Focus will be on helping potential authors put on paper their classroom experiences in helping students understand mathematics.

*Mathematics Teacher* Editorial Panel  
National Council of Teachers of Mathematics, Reston, Virginia

*Teaching Children Mathematics* Editorial Panel  
National Council of Teachers of Mathematics, Reston, Virginia

*Mathematics Teaching in the Middle School* Editorial Panel  
National Council of Teachers of Mathematics, Reston, Virginia

**140 (Convention Center)**

**269**

### GeoAlgebra: Kindergarteners Seeing Patterns and Making Generalizations

(PreK–2) Session

Algebra is often a subject relegated to upper middle and high school students; however, much of the arithmetic work done in elementary schools includes elements of algebraic reasoning. This presentation will discuss our experiences with using kindergarten and first-grade students' knowledge of shapes to help them develop generalizable mathematical relationships and make generalizations.

Arnulfo Perez  
Indiana University Bloomington

Dionne I. Cross  
Indiana University Bloomington

Olufunke Adefope  
Indiana University Bloomington

**101/102 (JW Marriott)**

**270**

### Math Buddy Program

(PreK–2) Session

The Math Buddy program teams older students with younger ones to enhance mathematical ability in both groups. By using Math and Movement (M&M) activities, older students can teach younger students multiples, fractions, place value, Cartesian coordinates, telling time, and more. Learn simple steps for starting a Math Buddy program and learn cross-body, aerobic movements associated with the M&M program.

Suzy Koontz  
Math Made Fun, Ithaca, New York

**109/110 (Convention Center)**

**271**

### Primary School Problem Solving: Free and Easy!

(PreK–2) Session

Model and teach problem solving in just minutes a day at no cost to you! Learn how to incorporate a system of problem-solving strategies that you can begin using in your classroom tomorrow. Students will love the real-life applications.

Rena Pate  
Danville School District 118, Illinois

**143 (Convention Center)**

THURSDAY

3:30 P.M.–4:30 P.M.

**272**

### Monthly Calendars Can Help Kindergarteners Add and Subtract Two-Digit Numbers

(PreK–5) Session

Kindergarteners can easily add and subtract two-digit numbers by using monthly calendars. This strategy develops mathematical skills by adding and subtracting days of the month. Also, hearing and spelling out numbers, days, and months develops phonological and phonemic awareness. Finally, this educational aid develops basic skills for data analysis.

Monica Y. Orozco  
Houston Independent School District, Texas

**128 (Convention Center)**

**273**

### Transforming Teaching: Examples That Take Us from Dissonance to Depth

(PreK–5) Session

Teaching for depth is a widely supported goal of the Common Core Standards; what teaching for depth means, however, is elusive. Explore authentic, classroom-tested examples contrasting common teaching practices with practices that cultivate deep conceptual understanding, creating disequilibrium that leads to necessary changes to teach for depth.

Juli K. Dixon  
University of Central Florida, Orlando

**Marriott Ballroom 9/10 (Marriott Downtown)**

**274**

### Connecting Length, Area, and Volume Tasks through Units and Comparison

(3–5) Session

This presentation will introduce a structure for designing measurement tasks for length, area, and volume based on some of the major ideas of measurement, including comparison, attribute identification, unit, and ratio. The speakers believe that using structure can help students develop a general understanding of unit and ratio. They will present examples of tasks designed with this structure and students' work.

Craig J. Cullen  
Illinois State University, Normal

Amanda L. Miller  
Illinois State University, Normal

Jeffery E. Barrett  
Illinois State University, Normal

**120 (Convention Center)**

**275**

### Pilates in Math: Strengthening Our Core

(3–5) Session

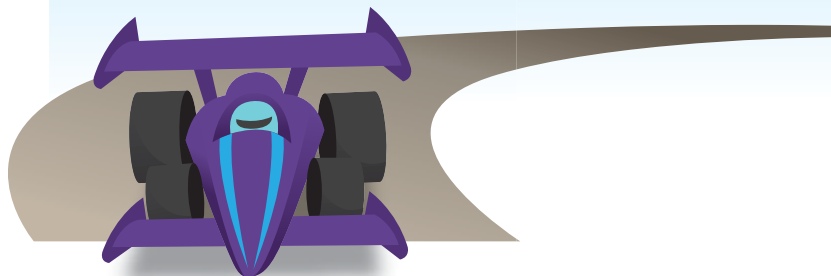
As Response to Intervention becomes more prevalent, math teachers must strengthen instruction for those students in the core group, or Tier 1. This presentation will model different strategies and techniques that allow for differentiated instruction to reach this group of learners.

Ruth Ann Kinker  
South Hill Elementary School, Virginia

**Grand Ballroom III (JW Marriott)**

THURSDAY

Check your e-mail at the  
**Internet Station** located in the  
lobby area outside the Exhibit Hall.



3:30 P.M.–4:30 P.M.

## 276

### Wii Math: Empowering Interface with Curricula!

#### (3–5) Session

Are you looking for ways to inspire creative thinking and problem solving? Join us for an educational adventure using a common digital device our students are familiar with—the Wii. Be prepared to get mentally and physically fit.

**Heather Romich**  
Howard County Public School System, Columbia,  
Maryland

**Meghan Hearn**  
Howard County Public School System, Columbia,  
Maryland

**Kelly Krownapple**  
Howard County Public School System, Columbia,  
Maryland

**White River Ballroom F (JW Marriott)**

## 277

### Singapore Math: Constructing with Cubes to Understand Volume

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

Join us as we explore how a problem-solving lesson on volume encourages students' inquiry, communication, and metacognition. When students are given the opportunity to explore volume by building figures with cubes, they not only construct meaning and the formula for volume, but also have fun and gain confidence as mathematicians.

**Katherine de la Garza**  
Scarsdale Public Schools, New York

**Grand Ballroom I (JW Marriott)**

## 278

### Hands-On Equations® and Singapore Math: Word Problems Using Icons

#### (3–8) Session

This session will see how using physical or pictorial icons helps students visualize both the representation and the conditions of a word problem. Compare the approaches used in Hands-On Equations with the bar model of Singapore math in representing and solving five word problems, including one involving fractional relations.

**Linda Bailey**  
Borenson and Associates, Inc., Allentown, Pennsylvania

**Kendra Jensen**  
Borenson and Associates, Inc., Allentown, Pennsylvania

**107/108 (Convention Center)**

## 279

### Teaching Area in the Common Core through Decomposing and Composing

#### (3–8) Session

The speakers will describe a teaching approach that meets the Common Core standards in which students decompose and reassemble plane shapes to make other plane shapes and the outer surfaces of solids. By decomposing and composing shapes, students develop an understanding of area formulas, avoid errors applying these formulas, distinguish surface area from the volume of solids, and use equivalent expressions.

**Sybilla Beckmann**  
University of Georgia, Athens

**Karen Fuson**  
Emerita, Northwestern University, Evanston, Illinois

**Grand Ballroom VI (JW Marriott)**

## 280

### The “X-less” Files: What Is Early Algebra?

#### (3–8) Session

Early algebra is not watered-down algebra for younger children. This session will demonstrate why early algebra is important and engage participants in practical classroom activities that illustrate its nature. The speakers will explain what early algebra is and how to integrate it into upper primary and middle school classrooms.

**David F. Feikes**  
Purdue University North Central, Westville, Indiana

**Marty Briggs**  
LaPorte Community Schools, Indiana

**Wabash Ballroom 3 (Convention Center)**

## 281

### Creating an Atmosphere for Inquiry and Excellence

#### (6–8) Session

How does establishing a safe, thoughtful atmosphere contribute to mathematical discourse? What sets the stage for effective informal questioning? Leave with ideas for establishing a classroom where students are excited to explore and communicate about mathematics. Examine some effective informal questions and questioning techniques for middle school mathematics topics of your choice.

**Angela Moreman**  
Carmel Clay Schools, Indiana

**White River Ballroom C/D (JW Marriott)**

THURSDAY



3:30 P.M.–4:30 P.M.

**282**

### **Sporting Math**

(6–8) Session

Students love to participate in and watch summer and winter Olympic sports. They also like to be active participants in their mathematical learning. We will show you some fun mathematical activities pertaining to basketball and figure skating that you can do with your energy-filled students.

Diana Cheng

Middle Tennessee State University, Murfreesboro

Johanna Bunn

Boston University, Massachusetts

**Marriott Ballroom 3/4 (Marriott Downtown)**

**284**

### **Interactive Geometry in More Dimensions Using Google SketchUp®**

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

Come explore topics in solid geometry using Google's free 3-D geometry software, SketchUp. The speakers will introduce the program's basics as well as a variety of classroom-ready, 3-D geometry explorations. You are encouraged to bring a laptop with battery power and Google SketchUp downloaded ([sketchup.google.com](http://sketchup.google.com)) so you can participate actively.

Suzanne Harper

Miami University, Oxford, Ohio

Nick Shay

Miami University, Oxford, Ohio

Shannon Driskell

University of Dayton, Ohio

**Grand Ballroom X (JW Marriott)**

**285**

### **And We Have Liftoff! Exploring Space through Algebra 1**

(6–12) Session

Students blast off to a better understanding of linear and quadratic functions with problems from *Exploring Space through Math: Applications in Algebra 1*. Math educators collaborated with scientists and engineers on these problems, which will inspire your students with the opportunity to analyze real data from the launch of the space shuttle.

Martha Grigsby

NASA Johnson Space Center, Houston, Texas

Monica Trevathan

NASA Johnson Space Center, Houston, Texas

**White River Ballroom G/H (JW Marriott)**

**286**

### **How Lesson Study Transformed Our Mathematics Department**

(6–12) Session

Teaching high school mathematics to unprepared students is a challenge. Teachers in the speaker's department continue to struggle with the issues this challenge presents, but have found lesson study to be an invaluable tool. Lesson study enables them to focus on how their students see mathematics, and this knowledge guide their lesson planning and implementation.

Carol Renee Caref

Chicago Public Schools, Illinois

**Sagamore Ballroom 6 (Convention Center)**

**287**

### **Transform Quadrilaterals with Formative Assessment**

(6–12) Session

As teachers, we spend much of our time creating authentic experiences for our students to learn geometry with understanding. This presentation will include a quadrilateral activity using transformations and the incorporation of formative assessment to determine if students' understanding of quadrilaterals was increased.

Colleen M. Eddy

University of North Texas, Denton

Kevin Hughes

University of North Texas, Denton

Casey Harl

Lake Dallas Independent School District, Texas

**125 (Convention Center)**

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3:30 P.M.–4:30 P.M.

**288**

### **AP Statistics: An Ideal High School Capstone Course**

(9–12) Session

Learn how to enhance your school's mathematics program by including AP Statistics. This presentation will include an introduction to the course, examples of typical problems, a guide to resources, and video clips of students talking about the course. The presenter is the College Board advisor to the AP Statistics Development Committee.

John F. Mahoney  
Benjamin Banneker Academic High School, Washington, D.C.

**123 (Convention Center)**

**289**

### **Find the Area of the Convention Center Using Determinants**

(9–12) Session

Students can use Google maps to find the footprint of any building. Connecting geometry and algebra, areas of quadrilaterals and triangles can be calculated using two-by-two determinants. This presentation will develop and prove these relationships and then apply the determinants to find the area of the Indianapolis Convention Center.

Ronald G. Armontrout  
Hotchkiss School, Lakeville, Connecticut

**Grand Ballroom V (JW Marriott)**

**290**

### **Fortifying the First Five: Five-Minute, Period-Opening Activities**

(9–12) Session

The speaker will present and discuss ten different categories of five-minute, period-opening activities that include explorations, quizzes, foreign texts, quotes, puzzles, and more.

Robert K. Gerver  
North Shore High School, Glen Head, New York

**141/142 (Convention Center)**

**291**

### **Polyhedra You've Never Met, But Will Absolutely Want to Use!**

(9–12) Session

Twenty years ago, who knew about Johnson solids, Catalan solids, and dipyramids? Now we have great activities accessible to average students using 3D software, manipulatives, and Sketchpad, in which we can build, analyze, and gather data on these marvelous figures. Come find out about what these are and bring them back to your geometry classes!

Laurie Bass  
Ethical Culture Fieldston School, Bronx, New York

**103/104 (Convention Center)**

**292**

### **Using an "Impossible" Construction Problem to Teach a Geometric Theorem**

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

The speaker will share experienced teachers' perspectives on how to conduct instruction based on an "impossible" construction problem about tangents. These perspectives came from group discussions of an animated vignette of a class at work on the problem. The speaker will report on practitioners' recommendations and the wisdom of practice that they share.

Patricio G. Herbst  
University of Michigan, Ann Arbor

**Sagamore Ballroom 2 (Convention Center)**

**293**

### **Explorations in Geometry for Teachers and Students**

(Preservice and In-Service) Session

This presentation will introduce a collection of activities that have been used in content courses, professional development sessions, and classrooms at a variety of levels. The activities focus on challenging thinking, addressing misconceptions, and promoting justification.

Beth G. Costner  
Winthrop University, Rock Hill, South Carolina

Kelly M. Costner  
Winthrop University, Rock Hill, South Carolina

**Grand Ballroom VIII (JW Marriott)**



3:30 P.M.–4:30 P.M.

**294**

### How Does Our Garden Grow? Nurturing a Learning Community

(Preservice and In-Service) Session

How can a math coach and a university faculty member assist with staff development, curriculum alignments, disaggregating data, differentiating instruction, resources, and demonstrating master teacher skills? The speakers will share data, celebrate successes, and discuss dilemmas of their three-year collaboration.

Stephen J. Bloom  
Butler University, Indianapolis, Indiana

Dana Lile  
Metropolitan School District of Wayne Township,  
Indianapolis, Indiana

**111/112 (Convention Center)**

3:30 P.M.–5:00 P.M.

**296**



### The Power and Beauty of Geometry: Reasoning, Constructing, and Transforming

(General Interest) Session

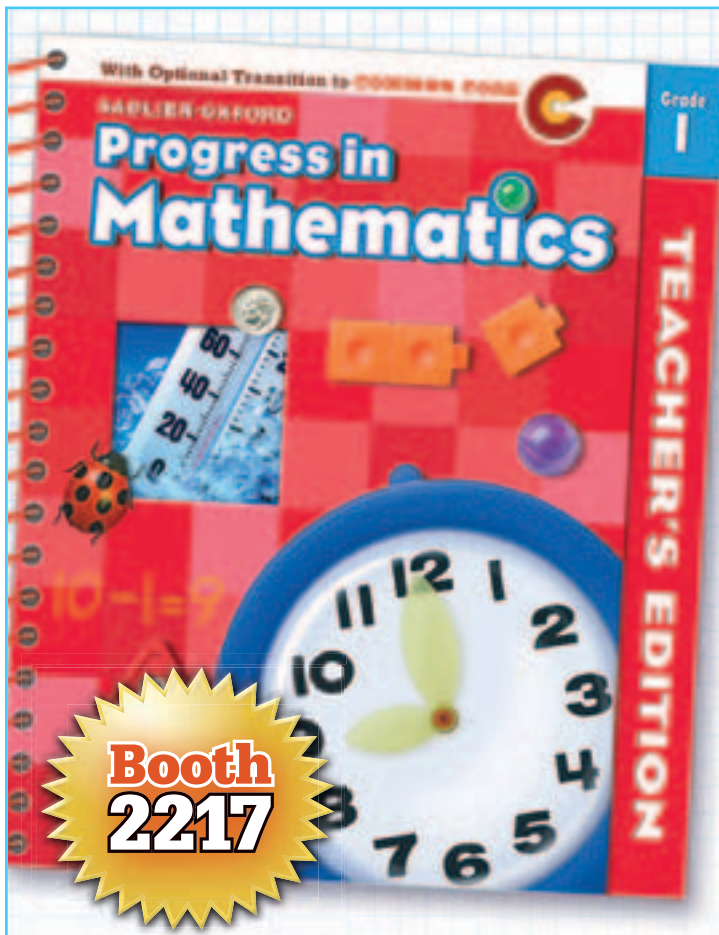
Lifetime Achievement Awards  
Presentation

Participants will join with the presenter in reasoning about some geometry tasks that have proven to be rich sources for promoting students' reasoning and discourse in the classroom. The representations chosen for geometry problems often unveil different aspects of the mathematics and give clues about students' thinking paths.

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

**Hall F (Convention Center)**

THURSDAY



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4:00 P.M.–5:00 P.M.

**ew 296.1**

**How The Brain Learns Math**

**(General Interest) Exhibitor Workshop**

Author David Sousa will explain the latest neuroscientific findings in practical, understandable terms and discuss the impact this information has for teaching math at all grade levels. The workshop will cover the cognitive mechanisms for learning math, the environmental and developmental factors that contribute to difficulties, and ways to differentiate instruction.

Corwin  
Thousand Oaks, California

**209 (Convention Center)**

**ew 296.2**

**How to Assess While Teaching Math: An INFORMative Assessment Perspective**

**(K–6) Exhibitor Workshop**

What is formative assessment, really? Why do we do it and what do students gain? This session gives a roadmap for thinking about the process of formative assessment in mathematics instruction. Learn from an INFORMative perspective, explore must-have practices, and view video of assessment in action. Complimentary copies of resources distributed to 50 attendees.

Presented by Jeane Joynes, Mari Muri, and Dana Isles

Math Solutions  
Sausalito, California

**116 (Convention Center)**

**ew 296.3**

**Bridging the Gap for Struggling Students with Multisensory Instruction**

**(K–8) Exhibitor Workshop**

Learn about research-based, proven instructional strategies and new, innovative programs that support them from Northpoint Horizons. Featured strategies are the C-R-A instructional approach of Math Elevations Intervention (grades 3–8) and the 5-E lesson design of CAVS (grades K–8) academic vocabulary based on the research of Robert Marzano. Samples to be provided.

Northpoint Horizons  
Vernon Hills, Illinois

**208 (Convention Center)**

**ew 296.4**

**CME Project: Get to the Core**

**(8–12) Exhibitor Workshop**

Somewhere between a tradition and a progressive approach lies another way to teach math—CME Project. This NSF-funded, high school mathematics program takes a problem-based, student-centered approach while balancing Common Core instructional elements and infusing mathematical practices through habits of mind.

Pearson  
Upper Saddle River, New Jersey

**117 (Convention Center)**

THURSDAY

**New to Teaching?**

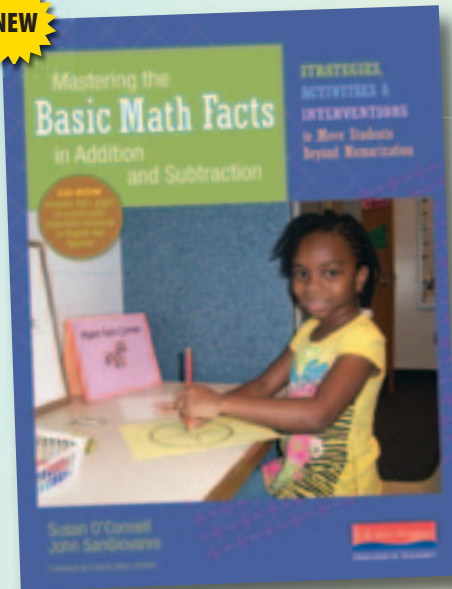
Get answers to pivotal questions and concerns of new and soon-to-be teachers at the New Teacher Strand on Friday.



# Notes

# Get Them Moving beyond memorization

NEW



Grades K–3 / 978-0-325-02963-4 / 2011 / 176pp / \$25.00

## Mastering the Basic Math Facts in Addition and Subtraction and in Multiplication and Division

Strategies, Activities, and Interventions  
to Move Students Beyond Memorization

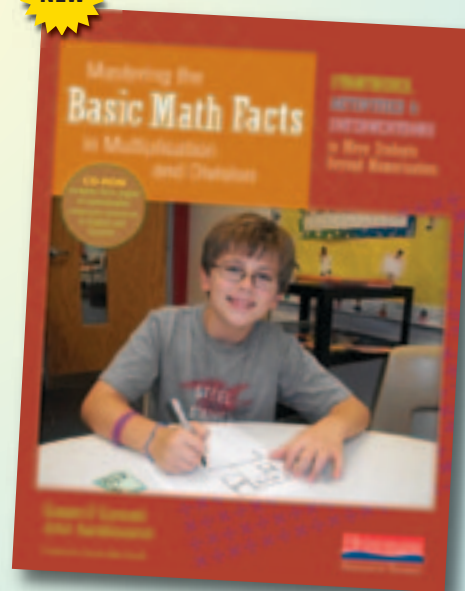
In today's math classroom, we want children to do more than just memorize math facts. We want them to understand the math facts they are being asked to memorize.

Whether you're introducing your students to basic math facts, reviewing facts, or providing remediation for struggling students, **Sue O'Connell** and **John SanGiovanni** will get you well on the road to moving beyond memorization.

*“What a find! These books are ‘must haves’ as we all navigate the route to computational fluency.”*

—Francis (Skip) Fennell  
Professor of Education & Graduate  
and Professional Studies, McDaniel College  
Past President of NCTM

NEW



Grades 2–6 / 978-0-325-02962-7 / 2011 / 192pp / \$25.00

FRIDAY

Learn more at the Heinemann booth

OR VISIT [www.Heinemann.com](http://www.Heinemann.com)

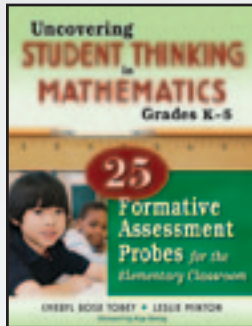
Heinemann  
DEDICATED TO TEACHERS



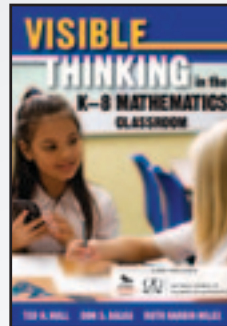


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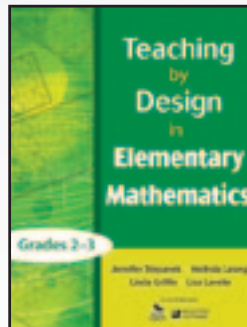
978-1-4129-9205-3, \$31.95



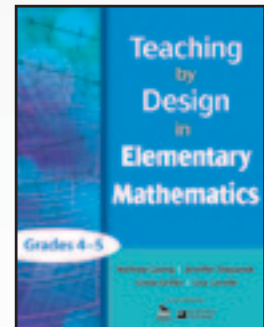
978-1-4129-9223-7, \$33.95



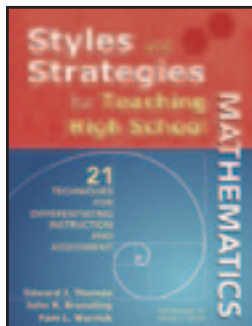
978-1-4129-8704-2, \$38.95



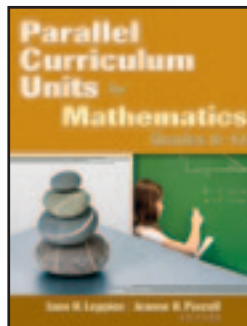
978-1-4129-8705-9, \$38.95



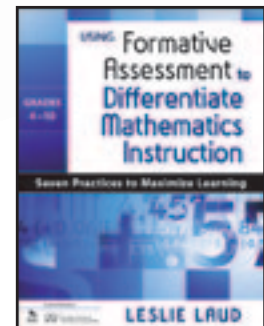
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978-1-4129-6548-4, \$25.95



978-1-4129-9524-5, \$30.95

FRIDAY

Visit us at NCTM booth 1729  
[www.corwin.com](http://www.corwin.com) | 800.233.9936




# Planner Friday

8:00	
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FRIDAY

 New Teacher Strand

 Exhibitor Workshop

 NCTM Committee Presentations

## HIGHLIGHTS

- Iris M. Carl Equity Address (Presentation 416)
- NCTM Business Meeting (Presentation 504)
- NCTM Immediate Past President's Address (Presentation 559)
- New Teacher Celebration! (Presentation 590)

### Registration Hours

7:00 a.m.–4:00 p.m.

### Exhibits and Calculation Nation® Hours

8:30 a.m.–5:00 p.m.

### Bookstore and Member Showcase Hours

7:30 a.m.–5:30 p.m.

### Fire Codes

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

8:00 A.M.–9:00 A.M.

**297**

**A Math-Educational (and Geometric?)  
“Whack on the Side of the Head”**

*(General Interest) Session*

The speaker will take a humorous, but thought-provoking look at some of the “mental locks” we all experience and explore how we can make a positive effect on students’ sense making. Fun examples from all levels—basic skills to algebra to geometry—will be discussed, including some from the speaker’s experience.

Larry N. Campbell  
Missouri State University, Springfield

**Grand Ballroom V (JW Marriott)**

**298**

**Equity and Rigor:  
How Do They Relate?**

*(General Interest) Session*

This session will discuss the relationship between equity and rigor. The definition of rigor one chooses determines which students appear to succeed and which do not. The speakers will present definitions of rigor from a variety of sources; share examples of rigorous, classroom-based mathematical tasks; and discuss implications of these definitions and tasks for increasing equity in the mathematics classroom.

William P. Bintz  
Kent State University, Ohio

Sara Delano Moore  
ETA/Cuisenaire, Vernon Hills, Illinois

**140 (Convention Center)**

**299**

**Exploring Probability:  
From Hands-On Experiments  
to Computer Simulations**

*(General Interest) Session*

How is a fourth-grade Track Meet game related to the World Series problem and the Fermat-Pascal Problem of Points in probability theory? Using student-generated data and computer simulations, we explore the connections of the problems, the implications of the contexts, and the underlying mathematical structure.

Lingguo Bu  
Southern Illinois University Carbondale

Erhan Haciomeroglu  
University of Central Florida, Orlando

Maria L. Fernández  
Florida International University, Miami

**Marriott Ballroom 9/10 (Marriott Downtown)**

**300**

**Extra Credit in Mathematics:  
Privilege or Expectation**

*(General Interest) Session*

We have all been asked if we give extra credit. Students expect it, whereas teachers view it as a privilege. But what does mathematics extra credit mean? How is it used? Why is it used? What are its implications? Come find out what more than 1000 students and teachers have to say.

Mike Long  
Shippensburg University, Pennsylvania

Christine Royce  
Shippensburg University, Pennsylvania

**101/102 (JW Marriott)**

FRIDAY



Thank you to the Local Arrangements  
and Program Committee members—  
your time and dedication made this year’s  
Annual Meeting a huge success!

**301**

### **New Perspectives: Differentiating the Math Classroom to Engage All Students**

**(General Interest) Session**

Why is math so hard for many students? This presentation will look at the impact of students' differences on instruction and how to address those differences while maintaining rigor and conceptual development. Participants will diagnose learning profiles, readiness, and interest and explore strategies and lessons that address students' differences.

Smith is a full-time consultant in differentiated instruction and mathematics. Before that, she taught mathematics at the high school and university levels, fully implementing differentiated instruction in her classroom. She is nationally board certified in adolescent and young adult mathematics, and she has written several works on differentiated instruction.

**Nanci N. Smith**  
Effective Classrooms Educational Consulting, Cave Creek, Arizona

**500 Ballroom (Convention Center)**

**302**

### **Renew Yourself by Teaching Math in Another Country**

**(General Interest) Session**

Whether you are a new teacher, a seasoned veteran, or retired, you have much to offer and learn by teaching in another country. The U.S. National Commission on Math Instruction will sponsor this session, bringing panelists together to discuss their own international experiences and to respond to your ideas or questions about teaching overseas.

**Stuart Moskowitz**  
Humboldt State University, Arcata, California

**Susan Hillman**  
Saginaw Valley State University, University Center, Michigan

**Ann Lawrence**  
U.S. National Commission on Mathematics Instruction, Washington, D.C.

**207 (Convention Center)**

**303**

### **What the Beatles, Hockey Players, and Rice Paddies Teach Us**

**(General Interest) Session**

Malcolm Gladwell's book *Outliers* takes a fresh look at how success is achieved. This presentation will engage participants in conversation and contemplation regarding the conclusions of Gladwell's work. The roles that culture, opportunity, and practice play in achieving mathematical success will be explored.

**John A. Anderson**  
Houghton Mifflin Harcourt, Boston, Massachusetts

**Wabash Ballroom 3 (Convention Center)**

**304**

### **Building Children's Understanding of Place Value**

**(PreK–2, Preservice and In-Service) Session**

This presentation will address what children need to know as they learn place-value concepts. The presenters will profile children's levels of place-value understanding and discuss appropriate instruction at each level. They will also share quick place-value assessments. Come learn what you can do to give your students the building blocks for a solid foundation in place value.

**Mercedes Tichenor**  
Stetson University, DeLand, Florida

**Doug Maclsaac**  
Stetson University, DeLand, Florida

**128 (Convention Center)**

**305**

### **Do the Math: Using Engineering to Integrate and Inspire**

**(PreK–5) Session**

Using engineering principles and the design process can be a powerful tool to reach all students. Engineering design challenges require the application of all subjects, particularly math. Participants will learn how to use engineering in the classroom to integrate math with other subjects through hands-on, inquiry-based design activities.

**Elizabeth Parry**  
North Carolina State University College of Engineering, Raleigh

**Christine D. Thomas**  
Board of Directors, National Council of Teachers of Mathematics; Georgia State University, Atlanta

**Marriott Ballroom 6 (Marriott Downtown)**



8:00 A.M.–9:00 A.M.

### 306

#### Grades 2–4 Number Sense: Making It Visual

(PreK–5) Session

Do your students struggle with number sense in numbers above 20? The speakers will share successful visual and kinesthetic strategies. They will demonstrate techniques that support students' building mental models to help with rounding, estimation, and mathematical operations. Walk away with concrete resources that can be applied immediately.

Marianne V. Strayton  
Clarkstown Central School District, New City, New York  
  
Kristin Hanley  
Clarkstown Central School District, New City, New York

**Grand Ballroom III (JW Marriott)**

### 307

#### How to Promote Number Sense in Early Childhood

(PreK–5) Session

Having a one-hundred-bead abacus in your classroom as a teaching aid is fun. It gives you the opportunity to make the children's learning experience exciting, enjoyable, and unique, because you will have a multitude of different techniques at your fingertips. Come see the speakers as they demonstrate them.

Tomoe Fujimoto  
Tomoe MI Academy, Tokyo, Japan  
  
Hiroo Kodama  
Tomoe MI Academy, Tokyo, Japan

**Grand Ballroom I (JW Marriott)**

### 308

#### Mental Gymnastics for Your Students: Building Computational Skill and Understanding

(PreK–5) Session

Save paper by using your head! Classroom video will show the astonishing mental arithmetic that nearly all young children can learn to do. Take home easy activities you can use with your own students to build not only great mental computational skill, quite quickly, but also the focus, attention, and working memory students need for problem solving.

Julie Jones  
Malden Public Schools, Massachusetts  
  
Patti Schacht  
Malden Public Schools, Massachusetts

**Sagamore Ballroom 4 (Convention Center)**

### 309

#### Computation Workshop: You Can Manage Differentiated Learning Goals

(3–5) Session

You want to give students the time they need with models and pictures to develop conceptual understanding, but some students are ready for symbolic representation and others were there from the start. Learn ways to manage an engaging workshop approach where students become fluent in operations with whole numbers and fractions.

Donna B. Wiktorowski  
Goshen Community Schools, Indiana

**120 (Convention Center)**

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FRIDAY

8:00 A.M.–9:00 A.M.

**310**

### **What's the Story behind Children's Multiplication and Division Story Problems?**

(3–5) Session

Participants will examine children's stories representing multiplication and division sentences, in order to make sense of their conceptual understanding of the operations, and then look at the children's work on other types of multiplication and division tasks related to the understandings expressed in the stories.

Kelly K. McCormick  
University of Southern Maine, Portland

Kathryn Essex  
Indiana University Purdue University Columbus

**Wabash Ballroom 1 (Convention Center)**

**311**

### **Assessment Considerations during Mathematics Lesson Planning**

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

Assessment is a primary consideration for teachers during the mathematics lesson-planning process. Teachers face planning for formal and informal assessments and determining how they will use assessment results. This presentation will highlight how teachers think about assessment when planning lessons, and how they make decisions for future planning on the basis of assessment results.

Julie Amador  
Indiana University Bloomington

**141/142 (Convention Center)**

**312**

### **Becoming a Consumer of Mathematics Coaching: Expectations and Responsibilities**

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

Coaching is a collaborative process done *with* teachers, not *to* them, to increase teachers' effectiveness and students' achievement. Books and articles offer advice to coaches, but nothing for teachers who receive the coaching. Learn what mathematics teachers need to know and do in order to be good consumers of coaching.

Arlene P. Mitchell  
RMC Research Corporation, Denver, Colorado

Clare Heidema  
RMC Research Corporation, Denver, Colorado

David Yopp  
Montana State University, Bozeman

**Grand Ballroom VI (JW Marriott)**

**313**

### **Engaging All Students in Classroom Discourse**

(3–8) Session

The speakers will present general principles and specific techniques for engaging all students in meaningful classroom discussions.

Damon L. Bahr  
Brigham Young University, Provo, Utah

Kim Bahr  
Alpine School District, American Fork, Utah

Eula Ewing Monroe  
Brigham Young University, Provo, Utah

**White River Ballroom C/D (JW Marriott)**

**314**

### **Fabulous, Fascinating Fractions**

(3–8) Session

With all respects to Judy Collins, we'll look at fractions from more sides now, as we investigate alternative methods for dividing fractions, comparing fractions, determining unit fractions, and more. We'll use the multiplication table and the standard, twelve-inch ruler to learn fraction facts. We'll also see how studying fractions can be an excellent bridge to algebra and geometry.

Steve Yurek  
Lesley University, Cambridge, Massachusetts

**143 (Convention Center)**

FRIDAY

8:00 A.M.–9:00 A.M.

**315**

### **Transforming Perspectives about Fractions: Helping Students Develop Fraction Reasoning**

(3–8) Session

Students often think that fractions are hard! This presentation will examine ways to transform that perspective, using a variety of contexts and models to help students understand and reason about the big ideas of fractions, including comparison, equivalence, and operations on fractions.

Nadine Bezuk  
San Diego State University, California

**Sagamore Ballroom 6 (Convention Center)**

**316**

### **Interactive Classroom Activities That Enhance Mathematical Reasoning and Problem Solving**

(6–8) Session

This presentation will showcase a collection of hands-on, interactive, action-oriented classroom activities designed to develop and enhance numerical, geometric, and algebraic reasoning and skills. These activities support the belief that mathematics must tickle the senses as well as stretch the mind.

Evan M. Maletsky  
Retired, Montclair State University, New Jersey

**Hall F (Convention Center)**

**317**

### **Making It Real: Using Context Engages Middle School Learners**

(6–8) Session

Connecting mathematics to real-world contexts can engage students in meaningful discourse about mathematical topics. Teachers can use students' interests to help students develop ownership in the mathematics. The speakers will share an approach that has been effective, will offer examples for geometry instruction that can work for other teachers, and will provide a process for transforming the contexts.

Gail Englert  
Norfolk Public Schools, Virginia

Rose Sinicrope  
East Carolina University, Greenville, North Carolina

**White River Ballroom F (JW Marriott)**

**318**

### **Who Owns What? Vertical Teaming and Curriculum Alignment**

(6–8) Session

The presenters will share how Westport School District realigned the middle school math curriculum through a vertical-teaming process. Attendees will learn how teachers determined who “owns” which concept and how Connected Math, HeyMath!, and common assessments are now used in the curriculum.

April Harvey  
Westport Public Schools, Connecticut

Michele Niedermeier  
Westport Public Schools, Connecticut

Stacey Delmhorst  
Westport Public Schools, Connecticut

**103/104 (Convention Center)**

**319**

### **ADAGE Algebra**

(6–12) Session

Algebra for All is a worthwhile but challenging endeavor. The ADAGE approach uses **A**ctivities, **D**ata, **A**nalysis, **G**eneralizations, and **E**xtensions to engage students at differentiated levels and to promote algebraic thinking and understanding. The speaker will describe and discuss NCTM resources and other explorations that exemplify the ADAGE approach.

Bob Mann  
Western Illinois University, Macomb

**Grand Ballroom VIII (JW Marriott)**

**320**

### **Mathematics of Game Shows**

(6–12) Session

How does the banker come up with offers on *Deal or No Deal*? Where should you drop Plinko chips to win the most money? These questions lead to topics in probability and statistics. The speakers will examine game shows from two perspectives: those who play the game, and those who design the games. Audience members will win prizes!

Bowen Kerins  
Education Development Center, Newton, Massachusetts

Kevin Waterman  
Education Development Center, Newton, Massachusetts

**125 (Convention Center)**



## Excite Them about Math and Science and the Results Can Last a Lifetime

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8:00 A.M.–9:00 A.M.

**321**

### **Responding to Coaching Dilemmas**

(6–12) Session

Coaching mathematics teachers requires a blend of pedagogical and mathematical insights that respond to the unique challenges faced in different teaching situations. The presenters will share stories of the various types of dilemmas they faced coaching teachers from grades 7–12 and how they managed to overcome those dilemmas.

Ruth Teszeri  
Halton District School Board, Burlington, Ontario,  
Canada

Amy Lin  
Halton District School Board, Burlington, Ontario,  
Canada

*White River Ballroom G/H (JW Marriott)*

**322**

### **Proof or Consequences: Interactive Geometry Investigations Lead to Proof**

(9–12) Session

Interactive geometry software is an excellent vehicle for discovering essential definitions, axioms, and theorems in geometry as well as foundational concepts in algebra. This presentation will focus on how to use interactive geometry to bridge the gap between investigation and formal proof in high school algebra and geometry.

Paul A. Kennedy  
Colorado State University, Fort Collins

Maurice Burke  
Montana State University, Bozeman

*Sagamore Ballroom 2 (Convention Center)*

**323**

### **Calculus Animations with Geogebra**

(9–12, Higher Education) Session

Geogebra is a free, Web-based software that does interactive geometry and graphing. The dynamic feature of the software allows for animations that can illustrate a variety of topics in calculus. This talk will show some of the animations the speaker has used in calculus and feature some instruction on how to create such animations. Come with ideas for creating additional animations.

Kevin W. Hopkins  
Southwest Baptist University, Bolivar, Missouri

*111/112 (Convention Center)*

**324**

### **The Geometry of Perspective**

(9–12, Higher Education) Session

The geometric basis of architectural drawing was first developed by Leon Battista Alberti in Renaissance Italy in the 1400s. Using The Geometers Sketchpad, this presentation will discuss Alberti's method and explore its mathematical basis using the cross ratio and related concepts.

David A. Thomas  
Mathematics Education Associates LLP, Great Falls,  
Montana

*Grand Ballroom X (JW Marriott)*

**325**

### **Great High School Investigations Adapted from College Math Journals**

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

We love mathematics and enjoy reading college-level mathematics journals. This presentation will focus on three high-level articles that the speakers converted for use in secondary school classrooms, to rekindle this love in both teachers and students. Participants will learn the process used and walk away with several activities for their own classes.

Amanda Ketner  
Elon University, North Carolina

Alan Russell  
Elon University, North Carolina

Jan Mays  
Elon University, North Carolina

*Marriott Ballroom 3/4 (Marriott Downtown)*

**326**

### **How to Train Your Draggin': Functional Thinking with Dynamic Sketches**

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

This interactive presentation will explore several freely available dynamic applets that generate plots of ordered pairs by dragging geometric objects. By applying educative dragging, the speakers will build algebraic models to fit these plots while collaboratively generating functions that both surprise and satisfy mathematically.

Michael Todd Edwards  
Miami University, Oxford, Ohio

Jeffrey J. Wanko  
Miami University, Oxford, Ohio

*123 (Convention Center)*

8:00 A.M.–9:00 A.M.

**327**

### **I'm Going to Teach Math: Why Didn't I Know This?**

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

This presentation will show participants some deficiencies that a secondary methods teacher and his students have discovered concerning conceptual understanding of several math procedures and formulas. Many preservice and in-service math teachers confess that they “should have known these things a long time ago.”

Steven T. Williams

Lock Haven University of Pennsylvania

**109/110 (Convention Center)**

**328**

### **Mentoring Student Teachers: Coconstructing a Professional Relationship**

(Higher Education) Session

This presentation will highlight characteristics of a coconstructed professional relationship between a cooperating in-service teacher and a student teacher. The speaker will use video segments of teaching and a feedback session to analyze a lesson's mathematics and pedagogy. They will share strategies for nurturing reflection and communication.

Cynthia O. Anhalt

University of Arizona, Tucson

Jennifer Eli

University of Arizona, Tucson

Joe Cuprak

Tucson Unified School District, Arizona

**201/202 (Convention Center)**

**329**

### **Stereotype Management among Successful Black College Mathematics and Engineering Students**

(Higher Education) Session

Benjamin Banneker Association Presentation

The speakers will introduce stereotype management to explain mathematics and engineering resilience and success among black college students. Life-story interviews of 23 black college students from four midwestern universities revealed that these students achieved their academic success through different motivations and responses to both perceived and real racism.

Ebony O. McGee

Northwestern University, Chicago, Illinois

Danny B. Martin

University of Illinois at Chicago

**107/108 (Convention Center)**

8:30 A.M.–9:30 A.M.

**ew 329.1**

### **Notebooking in the Math Classroom**

(K–5) Exhibitor Workshop

Inquiry Math can increase students' literacy skills and mathematical understanding. Learn how pairing hands-on materials and notebooking improves students' understanding of abstract ideas while building a robust math vocabulary. Participants will explore Math Out of the Box lessons, focusing on the new math Common Core State Standards. Materials will be provided.

Carolina Biological Supply Company

Burlington, North Carolina

**208 (Convention Center)**

**ew 329.2**

### **Redesigned, Rechargeable, Revolutionary: Experience the Latest TI-Nspire™ Technology**

(7–12) Exhibitor Workshop

See TI's newest learning technology: redesigned, rechargeable, & revolutionary! The most visually engaging TI technology ever allows for exploration of math concepts through multiple representations, interactive manipulation, and brilliant display, and it has some new features that may surprise you. Plus, it's permitted on many college entrance exams!

Texas Instruments (TI)

Dallas, Texas

**209 (Convention Center)**

FRIDAY

8:30 A.M.–9:30 A.M.

**ew 329.3**

**From Instruction to Exam Success on the AP Calculus Exam**

(9–12) Exhibitor Workshop

The high school math landscape is constantly changing but the end goal in AP Calculus remains the same: success on the AP Exam. Come learn why teachers have trusted the nationally recognized author team of *Calculus: Graphing, Numerical, Algebraic* for more than 15 years to prepare students for the AP Calculus AB and BC exams.

Pearson  
Upper Saddle River, New Jersey

**117 (Convention Center)**

**ew 329.4**

**Using Financial Algebra to Drive Your Third- or Fourth-Year Math Course**

(9–12) Exhibitor Workshop

Financial Algebra is a comprehensive learning program that includes a textbook, support materials, and projects. It is an applications-based, technology-oriented program that incorporates topics from Algebra 2, precalculus, calculus, probability, and Statistics in real-world contexts. It is an ideal solution for a third- or fourth-year math course. Presented by Robert Gerver.

Cengage Learning  
Belmont, California

**116 (Convention Center)**

8:30 A.M.–10:00 A.M.

**330**

**Building Number and Geometry Power with Strategic Intervention and Challenge**

(PreK–5) Gallery Workshop

Learn how to use formative assessments and motivating activities to help students increase number and geometry understanding as they engage in math discourse. The speaker will compare conceptual knowledge to procedural knowledge, analyze specific number and geometry concepts, and discuss how to provide strategic intervention and meaningful challenge.

Jennifer Taylor-Cox  
Taylor-Cox Instruction, Severna Park, Maryland

**121/122 (Convention Center)**

**330.1**

**Exploring Shape Games: The Math Begins When the Game Ends!**

(PreK–5) Gallery Workshop

Explore how students learn all about shapes through creating, playing, and analyzing shape games. These games (Zani Lingo, Grupo, and more) are part of research-based units developed under an NSF grant. Students identify, describe, sort, and classify shapes. After each game, questions on the important math behind the games provoke rich discussions.

M. Katherine Gavin  
University of Connecticut, Storrs

Janine Firmender  
University of Connecticut, Storrs

**Sagamore Ballroom I (Convention Center)**

**331**

**Inside, Outside, Upside-Down!**

(PreK–5) Gallery Workshop

“What is this tip-top point called?” “Can I stack two of those and make one of these?” “What would that look like if it fell open?” Out of the mouths of babes come some of our best ideas! Let’s explore 3-D shapes from the inside, outside, even up-side-down! Weave connections, communication, reasoning, and problem-solving all together as kids construct their own understanding of 3-D shapes.

Libby S. Pollett  
Consultant, Shelbyville, Kentucky

Dana Sparkman Cleghorn  
University of West Alabama, Livingston

**203/204 (Convention Center)**

**332**

**Slide, Flip, and Turn! Transform Geometric Shapes into Unique Tessellations**

(PreK–5) Gallery Workshop

Participants will start with a rectangle, triangle, and hexagon to fold, alter, and cut. They will then create unique tessellation art work by flipping, turning, and sliding. The speaker will share students’ examples, as well as interactive Web sites to demonstrate the geometric connections with art, architecture, and nature.

Kim K. Hartweg  
Western Illinois University, Macomb

**White River Ballroom I/J (JW Marriott)**

8:30 A.M.–10:00 A.M.

**333**

### **Science, Technology, Engineering, and Mathematics (STEM) Takes Flight**

(PreK–5) Gallery Workshop

STEM integrations offer a curriculum that makes connections, emphasizes questioning and inquiry, and allows students to apply engineering design and problem solving. STEM content comes alive as participants build an airplane and create a simple flight plan. This lesson seamlessly weaves together the four STEM subdisciplines.

Tammy L. Jones  
TLJ Consulting Group, Lebanon, Tennessee

**Grand Ballroom VII (JW Marriott)**

 **334**

### **Terrific Techniques for Transforming Your Classroom into a Mathematical Community**

(PreK–5) Gallery Workshop

This session is for beginning teachers who are looking for effective motivation and management activities to engage all students in mathematical reasoning and discourse, in geometry and across the strands. Learn how to jump start inquiry-based learning that will support a range of learners through fun and engaging activities, formative assessment strategies, video clips, and management ideas.

Kimberley Englert  
Jefferson County Public Schools, Louisville, Kentucky

Ronah Bogert  
Jefferson County Public Schools, Louisville, Kentucky

**105/106 (Convention Center)**

**335**

### **What Is Spatial Sense, and Why Is It So Special?**

(PreK–5) Gallery Workshop

This informational, hands-on workshop will explore the topic of spatial sense and its importance throughout not only geometry, but also the broader math curriculum. Enjoy engaging, sometimes challenging activities that support this important part of mathematical curriculum.

Marilyn Lance  
Houghton Mifflin Harcourt, Austin, Texas

**Grand Ballroom IX (JW Marriott)**

**336**

### **Let's Play! Math Learning Games with Friends**

(3–5) Gallery Workshop

Learning can be fun! Come try out some innovative games and puzzles you can use with your students. With the element of competition, you will get a chance to show how well you can reason and make decisions. Every player can win, and every player will get a chance to think. The speaker will bring the games and puzzles, and you can bring your friends. See how much fun learning can be! Solve math puzzles you have never seen before.

Mary Kay Bacallao  
Mercer University, Macon, Georgia

**Marriott Ballroom 1/2 (Marriott Downtown)**

**337**

### **Math Activities for the Special Student in the Regular Classroom**

(3–5) Gallery Workshop

Are you experiencing difficulty teaching computation to your students with special needs? Do you need alternative strategies? Using the NCTM Math Computation Standard, you will be actively involved with games and activities that develop concepts, then practice these concepts and apply them in problem-solving ways.

Shirley H. Bradsby  
Jefferson County Schools, Lakewood, Colorado

**Wabash Ballroom 2 (Convention Center)**

**338**

### **Math Investigation Centers (MIC)**

(3–5) Gallery Workshop

Geometric MIC maps enable the elementary school classroom teacher to provide challenging math activities better without designing daily lesson plans. Activities enrich and challenge with depth and analytical and critical independent thinking. The focus is on problem solving rather than computation.

Linda K. Morrin  
Sol Feinstone Elementary School, Newtown, Pennsylvania

**126/127 (Convention Center)**

FRIDAY



8:30 A.M.–10:00 A.M.

**339**

### **Building a Bridge from Elementary School Mathematics to Formal Geometry**

(3–8) Gallery Workshop

Hands-on activities and strategies will be presented that help the elementary school student, including English language learners and those considered at-risk, master the geometric principles necessary for success in higher-level mathematics courses. Explorations of symmetry, slope, and scale will be included.

Juanita R. Walker  
Santa Ana Unified School District, California

Barbara Post  
California State University, Fullerton

**Grand Ballroom IV (JW Marriott)**

**340**

### **Real-World Math for Earth's Sake**

(3–8) Gallery Workshop

So much environmental awareness relies on our understanding of mathematics. Discover how algebra, data analysis, problem solving, measurement, and more can all be used in hands-on activities to learn more about human population trends, energy use, land use, climate change, and other issues shaping our future on Earth. Receive a free CD-ROM of activities.

Jodi Bondy  
Population Connection, Washington, D.C.

**103/104 (JW Marriott)**

**341**

### **Teach and Assess Fractions through Problem Solving, Communications, and Modeling**

(3–8) Gallery Workshop

There are about twelve problem types in arithmetic. Beginning tomorrow, your students will recognize each one. They will also be able to solve them and communicate their thinking verbally and in writing. This presentation will develop the meaning behind each problem type by using concrete and pictorial solutions while simultaneously developing the symbolic algorithms.

Philip Halloran  
Central Connecticut State University, New Britain

**205/206 (Convention Center)**

**NT 342**

### **Engaging Students through Engaging Mathematics**

(6–8) Gallery Workshop

Are your students actively doing new, meaningful math? Mathematical meaning plays a vital role in students' solutions of problems in everyday activities when compared to in-school, algorithmic, problem-solving activities. Learn how math can be embedded in real-life applications and activities of interest to middle school students.

Rick Billstein  
University of Montana, Missoula

**101/102 (Convention Center)**

**343**

### **Putting a Positive Spin on Negative Numbers**

(6–8) Gallery Workshop

No need to fear negative numbers! This session will share a variety of kinesthetic, tactile, and visual games. Activities will include miniature golf, bingo, an integer fashion show, an integer ops line dance, Jeopardy, Concentration, and a cauldron card game. Attendees will receive a CD of all activities.

Shelley R. Hunter  
School District 14, Florenceville, New Brunswick, Canada

**Sagamore Ballroom 3 (Convention Center)**

**344**

### **What's That Polygon in the Mirror?**

(6–8) Gallery Workshop

Join the speakers as they use mirrors to explore the special features of regular polygons. These classroom-ready investigations allow teachers to reinforce prior knowledge while students discover algebraic relationships between the angles and sides of polygons.

Christie Perry  
Morehead State University, Kentucky

Vivian F. Cyrus  
Morehead State University, Kentucky

**Grand Ballroom II (JW Marriott)**

8:30 A.M.–10:00 A.M.

### 345

#### **Yes, All Middle School Students Can Reason Proportionally**

(6–8) Gallery Workshop

TODOS: Mathematics for ALL Presentation

Experience as a learner an engaging lesson that uses a TI-73 with a middle school teacher as facilitator. The lesson was developed by middle school math teachers, English language (EL) teachers, and EL experts in a collaboration between TODOS and Texas Instruments.

Michael Lutz  
California State University Bakersfield

**Sagamore Ballroom 7 (Convention Center)**

### 346

#### **Folding and Unfolding: Making Sense of Surface Area**

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

This gallery workshop will give teachers a hands-on approach to helping students make sense of the surface area of prisms and cylinders. These specially designed tasks can help students develop productive habits of mind, including making conjectures, providing justifications, and generalizing across shapes.

Ziv Feldman  
Boston University, Massachusetts

Matthew Chedister  
Boston University, Massachusetts

**Marriott Ballroom 7/8 (Marriott Downtown)**

### 347

#### **The Math Workshop: Supporting All Learners in Mathematics Instruction**

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

The math workshop is a teaching framework in which a community of math learners develops through lessons that respond to students' needs. Students learn how to work collaboratively, evaluate their work and that of others, engage in meaningful conversations, persevere through difficult tasks, represent ideas in multiple forms, and reflect on their mathematical thinking.

Lanette R. Waddell  
Lehigh University, Bethlehem, Pennsylvania

**Sagamore Ballroom 5 (Convention Center)**

### 349

#### **Reasoning and Sense Making in Statistics and Probability**

(6–12) Gallery Workshop

NCTM has commissioned a series of companion books to focus on reasoning and sense making in high school mathematics. The speakers present reasoning and sense-making activities from companion books on statistics and probability.

Henry Kranendonk  
University of Wisconsin—Milwaukee

Beth Chance  
California Polytechnic State University, San Luis Obispo

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

**144/145 (Convention Center)**

### 350

#### **Slope Explorations: Slippery, But So Much Fun!**

(6–12) Gallery Workshop

Use hands-on data collection activities and TI-NSpire explorations to help students understand and interpret slope in real-world contexts.

Elizabeth M. Gasque  
Retired, Charleston, South Carolina

Judith Hicks  
Retired, Arvada, Colorado

**124 (Convention Center)**

FRIDAY

The **NCTM**  
**Membership**  
**Showcase**  
has activities, lessons,  
sample journals, and  
more. Stop by!

8:30 A.M.–10:00 A.M.

**351**

**Using Algebra Tiles from Integers to Factoring**

(6–12) Gallery Workshop

See how successful manipulatives can be in a secondary school classroom. Participants will engage actively in using algebra tiles in a variety of situations. They will explore operations on polynomials all the way through factoring and completing the square. The important part will be transitioning from the concrete (manipulative) to the abstract (paper and pencil).

Virginia A. Head

College Preparatory Mathematics Educational Program,  
Sacramento, California

Christine Mikles

College Preparatory Mathematics Educational Program,  
Sacramento, California

Lonnie Bellman

College Preparatory Mathematics Educational Program,  
Sacramento, California

**White River Ballroom A/B (JW Marriott)**

**352**

**Construct Worthwhile Tasks for the Geoboard and Transform Your Class**

(9–12) Gallery Workshop

Participants will explore geoboard tasks connecting geometry, trigonometry, and algebra. Tasks will involve systematic counting, reasoning and sense making, and academic vocabulary development. Get ready to be involved in genuine mathematical discoveries and to broaden your repertoire of worthwhile mathematical tasks. Transform your class with a geoboard!

Greisy Winicki Landman

California State Polytechnic University, Pomona

**White River Ballroom E (JW Marriott)**

**353**

**Exploring Conic Sections from Paper Folding to TI-NSpire™ Handheld Tools**

(9–12) Gallery Workshop

Participants will develop a deeper understanding of the definition of parabolas, ellipses, and hyperbolas by paper folding; discover that what looks like each conic section is really the “envelope” of tangent lines; find where the loci of points actually are; mimic the same actions on the TI-NSpire; and compare and contrast the ellipse with the hyperbola.

Arthur T. Mabbott

Seattle Public Schools, Washington

**Marriott Ballroom 5 (Marriott Downtown)**

9:30 A.M.–10:30 A.M.

**354**

**Culture, Language, and Teaching: Three Dimensions to Supporting ELLs**

(General Interest) Session

The speakers will explore various strategies that support English language learners (ELLs), with particular attention to culture and vocabulary support that honors effective mathematics learning environment. Specific strategies for effective planning and teaching will be shared.

Jennifer M. Bay-Williams

University of Louisville, Kentucky

Stefanie Livers

University of Louisville, Kentucky

**Grand Ballroom VI (JW Marriott)**

**355**

**Dancing the Dance: Special Educators as Dance Partners in Mathematics**

(General Interest) Session

This session will provide practical tools for collaborating with secondary school special educators. The speaker will highlight video images and a summary of resources for working with secondary school students with disabilities, as well as practical examples of what is needed for special education to really dance the dance in secondary mathematics classrooms.

Lisa A. Dieker

University of Central Florida, Orlando

**128 (Convention Center)**

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**356**

### Experiencing Symmetry: Geometric Transformations in Art, Music, and Dance

(General Interest) Session

This session will show you exciting, creative activities that let students of all ages experience symmetry and geometric transformations through the arts. You will draw symmetrical ambigram lettering designs, hear geometric transformations in the music of Bach and Mozart, see animated visual canons, and act out symmetries with your body.

Kim is a puzzle designer with a passion for bringing the arts into math education. He has designed thousands of puzzles for various Web game companies, and he was the puzzle columnist for *Discover* magazine. He has been an innovator in bringing theatrical performance into math education, and he has lectured widely on symmetry in art and music.

Scott E. Kim  
Lumos Labs, San Francisco, California

**500 Ballroom (Convention Center)**

**357**

### Learning Progressions for the Common Core State Standards

(General Interest) Session

Presidents' Series Presentation

Learning progressions can drive professional development activities created to support quality implementation of the Common Core State Standards. Examples across grade levels will be drawn from district and state collaborations.

Bradford Findell  
Association of State Supervisors of Mathematics; Ohio  
Department of Education, Columbus

**Sagamore Ballroom 2 (Convention Center)**

**358**

### Effects of Inquiry-Based Pre-K Curricula on Children's Knowledge of Mathematics

(PreK–2) Session

This presentation will describe a prekindergarten math-science curriculum, professional development for Head Start teachers, prekindergarten children's outcomes, and findings from the first four years of data collection assessing the curriculum. Suggestions for helping teachers become successful facilitators of math-science activities will be shared.

David L. Brown  
Texas A&M University—Commerce

**White River Ballroom C/D (JW Marriott)**

**359**

### Fun Creates Math Futures for All

(PreK–2) Session

Women and Mathematics Education Presentation

The speakers will share the findings of their study that used interactive math computer games with preschool children. This presentation will address how fun computer-game use was a significant tool for reaching all children while working with math concepts.

Marla Masfin  
Minnesota State University Mankato

Tricia Soupir  
Minnesota State University Mankato

**111/112 (Convention Center)**

**360**

### Preparing Young Students for Fluency with Basic Addition Facts

(PreK–2, Preservice and In-Service) Session

A fluency approach to learning basic addition facts incorporates efficiency, flexibility, and, most of all, an understanding of basic number combinations. This presentation will discuss the advantages of using a fluency approach to learning basic addition facts, and explore how to use models and games to help young students develop mastery of basic facts in a meaningful way.

Gina M. Garza-Kling  
Western Michigan University, Kalamazoo

**123 (Convention Center)**

9:30 A.M.–10:30 A.M.

**361**

**Addition and Subtraction Interventions That Work**

(PreK–5) Session

When children struggle to master addition and subtraction, use ten frames as a foundation for instruction. You will learn how the ten-frame model strengthens number sense, encourages algebraic thinking, and supports mastering basic facts and place value. Take away classroom-ready, classroom-tested materials.

Christine Losq  
CLEA, Inc., Palo Alto, California

**Sagamore Ballroom 6 (Convention Center)**

**362**

**Understanding Place Value**

(PreK–5) Session

Too many intermediate students have an incomplete understanding of place value, which results in problems with multiplication, division, and decimals. The speaker will look at what causes this problem, what primary school teachers need to do to prevent it from happening, and what intermediate school teachers can do to help their students understand.

Kathy Richardson  
Math Perspectives Teacher Development Center,  
Bellingham, Washington

**107/108 (Convention Center)**

**363**

**Connecting Algebraic Thinking with Number and Geometry**

(3–5) Session

Connecting algebraic thinking with number and geometry is an essential part of students' coming to know and understand mathematics. This presentation will focus on these ideas for grades 3–5. Participants will engage in activities that emphasize several ways of thinking about algebraic ideas.

Sandra Davis Trowell  
Valdosta State University, Georgia

Anne Reynolds  
Kent State University, Ohio

Eileen Lillard  
University of Oklahoma, Norman

**Grand Ballroom VIII (JW Marriott)**

**364**

**Using Children's Literature as a Springboard to Teach Probability**

(3–5) Session

Many children love being read to and hearing stories. This presentation will demonstrate an array of probability activities stemming from the story lines of children's books. Participants will receive a bibliography of more than 30 children's literature books with engaging, hands-on, student-centered probability activities to use with children.

Teri L. Bingham  
West Texas A&M University, Canyon

**Marriott Ballroom 3/4 (Marriott Downtown)**

**365**

**Fusion Math! Integrating Mathematics, Science, and Everyday Life**

(3–8) Session

This presentation will demonstrate making meaningful fusion mathematics that attracts students' curiosity and stimulates higher-order mathematical thinking. The speakers will discuss how we can use mathematical thinking to change our daily lives by integrating mathematics, science, and everyday life.

Mangoo Park  
Seoul National University of Education, South Korea

Jongsoo Bae  
Seoul National University of Education, South Korea

Hang Gyun Sihm  
Seoul National University of Education, South Korea

**101/102 (JW Marriott)**

FRIDAY

9:30 A.M.–10:30 A.M.

**366**

### High-Impact Techniques for Helping Students Overcome Math Learning Deficits

(3–8) Session

Finding classroom techniques that enable students' success in math despite disabilities is difficult; so is finding such techniques that require little additional teacher's preparation. Where do virtual manipulatives fit? This presentation will discuss specific techniques and the learning deficits that each one addresses.

Deborah L. Gochenaur  
Shippensburg University, Pennsylvania

Kelly Kozain  
Northern York High School, Dillsburg, Pennsylvania

**125 (Convention Center)**

**367**

### How Deep Analysis of Students' Work Can Improve Instruction

(3–8) Session

The speakers will show how grades 5–8 teachers can use the Vermont Partnership's Ongoing Assessment Project Frameworks to analyze students' fractional and proportional reasoning, using examples from students' work on nonroutine problems. Such close analysis can lead teachers to deeper understanding of students' knowledge and thus guide instructional practices.

Wendy M. Smith  
University of Nebraska—Lincoln

Ruth M. Heaton  
University of Nebraska—Lincoln

Mary Alice Carlson  
University of Nebraska—Lincoln

**Marriott Ballroom 6 (Marriott Downtown)**

FRIDAY

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9:30 A.M.–10:30 A.M.

**368**

### **Films: Cultural Media for Exploring Mathematics**

(6–8) Session

#### **Benjamin Banneker Association Presentation**

This presentation address ways to use films with an African American cultural focus to teach mathematics. The speakers will share specific investigations for featured films and discuss major factors involved in using film media.

Michaele Chappell  
Middle Tennessee State University, Murfreesboro

Denisse R. Thompson  
University of South Florida, Tampa

**103/104 (Convention Center)**

**369**

### **Spatial Ability and Mathematical Performance among Korean Gifted Students**

(6–8) Research Session

This study explored the role of spatial visualization in the math performance of Korean middle school students. By considering the level of spatial visualization ability and gender as moderators, this study also compared math performance of students who were placed in gifted programs with those who were not.

So Yoon Yoon  
Purdue University, West Lafayette, Indiana

Sungsun Park  
Chuncheon National University of Education, Gangwon,  
South Korea

Eric L. Mann  
Purdue University, West Lafayette, Indiana

**Grand Ballroom III (JW Marriott)**

**370**

### **Developing Teachers' Algebraic Reasoning through Job-Embedded Professional Development**

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

The presenters will describe a model of job-embedded professional development used to support teaching algebraic reasoning in middle school. They will explore how using context and representations enhanced content and pedagogical content knowledge to help support learners as they move from the concrete to the abstract.

David Coffey  
Grand Valley State University, Allendale, Michigan

Esther Huntzinger Billings  
Grand Valley State University, Allendale, Michigan

Mary Scott  
Muskegon Public Schools, Michigan

**Marriott Ballroom 9/10 (Marriott Downtown)**

**371**

### **When Teachers Analyze Students' Work, Teachers and Students Learn**

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

Math teachers in one professional learning community each committed to bringing one sample of students' work to every biweekly team meeting for a year. Come learn how this habit affected instruction, assessment, professional development, and most important, students' learning. Learn how to engage teachers at your school in this powerful practice.

Linde Rickert Tassell  
Charlottesville City Schools, Virginia

Sarah Gallagher  
Charlottesville City Schools, Virginia

**141/142 (Convention Center)**

**372**

### **A Day in the Life of a Fractal**

(6-12) Session

Fractal geometry is a beautiful, captivating motivator that engages students in mathematical learning. This presentation will introduce participants to fractal geometry and its connections to algebra, geometry, precalculus, and the real world. Teachers will learn how to create their own fractals and teach this topic to their students.

Neil D. Cooperman  
Millburn High School, Millburn, New Jersey

Stephanie H. Cooperman  
Chatham Middle School, Chatham, New Jersey

**White River Ballroom G/H (JW Marriott)**

FRIDAY



9:30 A.M.–10:30 A.M.

**373**

### **Geometric Pathways to Function Promote Variation and Visual Representations**

(6–12) Session

Students struggle with domain, range, composition, and inverses, partly because of our reliance on numeric functions. Learn how geometric functions in Sketchpad 5, with drag-able input points determining output points by transformation or construction, offer visual images of compositions and inverses and transform sets of points and even pictures.

Scott Steketee  
Key Curriculum Press Technologies, Emeryville,  
California

*White River Ballroom F (JW Marriott)*

**374**

### **Geometry Concepts Applied to Physics Problem Solving in Mathematics Classrooms**

(6–12) Session

This presentation will show examples of integrating geometric and algebraic concepts with applied physics appropriate for use in the mathematics classroom. Topics include vector application, angle relationships, similar triangles, and trigonometric ratios. Examples can be adapted to various age levels and depths of knowledge.

Sherrie L. Wisdom  
Lindenwood University, Saint Charles, Missouri

*140 (Convention Center)*

**375**

### **Loaded Dice and Central Tendency: Analyzing Games of Chance**

(6–12) Session

Middle school students played and analyzed games using a specially labeled 20-sided die. Their optimal strategies varied on the basis of three different sets of scoring rules. These strategies often related to the mean, median, or mode of the set of outcomes. Variations and extensions, such as using technology, will be discussed.

Dustin L. Jones  
Sam Houston State University, Huntsville, Texas

*Grand Ballroom I (JW Marriott)*

**NTE** **376**

### **Professional Development That Answers Your Questions**

(9–12) Session

Methods classes are over, and now you are teaching actual students in an actual classroom. Good teachers recognize that they are never done learning. You probably generate lots of questions. Learn specific ways to identify and answer your questions through self-critique, finding a mentor, and developing a support system.

Erin Moss  
Millersville University, Pennsylvania

Janet White  
Millersville University, Pennsylvania

*109/110 (Convention Center)*

**377**

### **Challenges and Opportunities for Teaching and Learning Proofs**

(9–12) Session

Although reasoning and proof should permeate all mathematics instruction, constructing and evaluating proofs remains a major focus of high school geometry. Still, many teachers find helping students develop proficiency with proofs challenging. This presentation will examine how Japanese curriculum materials treat teaching formal proofs.

Tad Watanabe  
Kennesaw State University, Georgia

*Grand Ballroom V (JW Marriott)*

**378**

### **Transforming Geometric Proof with Reflections, Rotations, and Translations**

(9–12) Session

Make your geometry class more dynamic and visual by helping students reason with transformations. Explore standard geometry examples of how transformations can define objects, connect ideas, and prove theorems, both informally and rigorously. Try your own hand at some examples.

Kristin A. Camenga  
Houghton College, New York

*Grand Ballroom X (JW Marriott)*

9:30 A.M.–10:30 A.M.

**379**

### **What We Learned from the First Three Years of Teaching**

(9–12) Session

The speakers will discuss methods they have found useful for getting students to learn the material generally covered in a first- and second-year algebra classes. They will focus on ways to grade, check, and assign homework; methods for getting students to learn from and reflect on mistakes; and teaching strategies to help students grasp the course material.

Rustin Reys

Park Hill High School, Kansas City, Missouri

Adam Hoffman Bezinovich

Park Hill High School, Kansas City, Missouri

**143 (Convention Center)**

**380**

### **Improving Classroom Discourse to Support Communication, Equity, and Students' Agency**

(9–12, Higher Education) Research Session

NCTM states that communication and equity are two main focuses in mathematics education, yet many teachers search for ways to support these areas. Hear a report on research that analyzed transcripts from problem-based geometry classrooms for discourse techniques that support instructional methods that empower agency and encourage students' voices in classroom practice.

Carmel Schettino

State University of New York—University at Albany

**Wabash Ballroom 1 (Convention Center)**

**381**

### **Promoting Reasoning and Sense Making in High School Mathematics**

(9–12, Higher Education) Session

Since the release of its *Focus in High School Mathematics: Reasoning and Sense Making* in October 2009, NCTM has been exploring ways to promote the messages of the publication. This session will highlight several new projects, including videos of classrooms, a national conference, and professional development resources. Come and give your input!

W. Gary Martin

Auburn University, Alabama

Daniel Chazan

University of Maryland, College Park

Laurie A. Boswell

The Riverside School, Lyndonville, Vermont

**Sagamore Ballroom 4 (Convention Center)**

**382**

### **The Law of Cosines (without the Cosines)**

(9–12, Higher Education) Session

This session will explore ideas for teaching some topics in trigonometry as part of geometry, without trigonometric notation, which can obscure important concepts and relationships. The speakers will connect this material to typical school-geometry topics and intriguing calculations suitable for Algebra 2. The session will be interactive and use GeoGebra.

Ellen Ford

Northshore Recovery High School, Beverly, Massachusetts

Bill Rosenthal

Advanced Learning Centers, Inc., Saint Petersburg, Florida

**207 (Convention Center)**

FRIDAY

9:30 A.M.–10:30 A.M.

**383**

**Experiencing the Euler Line and More!**

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

In 1765, Euler proved that the centroid of a triangle trisects the line segment joining its circumcenter to its orthocenter. Students respond, “Show me.” This presentation will investigate a wide variety of ways to explore this important finding, including a student’s project that can help solidify mastering many concepts normally studied in Algebra 2.

James M. Rubillo

Former Executive Director, National Council of Teachers of Mathematics; DeSales University, Center Valley, Pennsylvania

**Hall F (Convention Center)**

**384**

**Getting Them to Talk about It**

(Higher Education, Preservice and In-Service) Session

In content courses, getting prospective school teachers (PSTs) to talk about and try to make sense of the mathematics they are studying can be challenging. This presentation will describe efforts to engage PSTs in class and online discussions about relationships between the perimeter and area of polygons. It will also discuss influences on their learning.

Kadian M. Callahan

Kennesaw State University, Georgia

**120 (Convention Center)**

**385**

**Preservice Teachers’ Epistemological Beliefs about Teaching and Learning Mathematics**

(Higher Education, Preservice and In-Service) Session

This talk will explore preservice teachers’ epistemological beliefs toward mathematics teaching and learning and how these beliefs may affect their ability to implement pedagogy that is consistent with current educational reform efforts. The discussion will center on William Perry’s Scheme of Intellectual Development.

Heidi J. Higgins

University of North Carolina at Wilmington

Deborah Powell

University of North Carolina at Wilmington

**201/202 (Convention Center)**

**386**

**Modified Lesson Study as a Vehicle for Creating Engaging Lessons**

(Preservice and In-Service) Session

Intern teachers use modified lesson study as a vehicle to create lessons that engage students in the content and provide the structures for academic language. Lesson study’s formative and summative assessments note the evidence of students’ learning throughout the lesson.

Carol E. Treglio

San Diego Unified School District, California

**Wabash Ballroom 3 (Convention Center)**

10:00 A.M.–11:00 A.M.

**ew 386.1**

**Envisioning Common Core in the Grades K–2 Classroom**

(K–2) Exhibitor Workshop

Come learn more about how the Common Core State Standards will affect your work with grades K–2 students. Through specific examples in the workshop, participants will learn strategies for developing mathematical practices in students.

Pearson

Upper Saddle River, New Jersey

**117 (Convention Center)**

**ew 386.2**

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

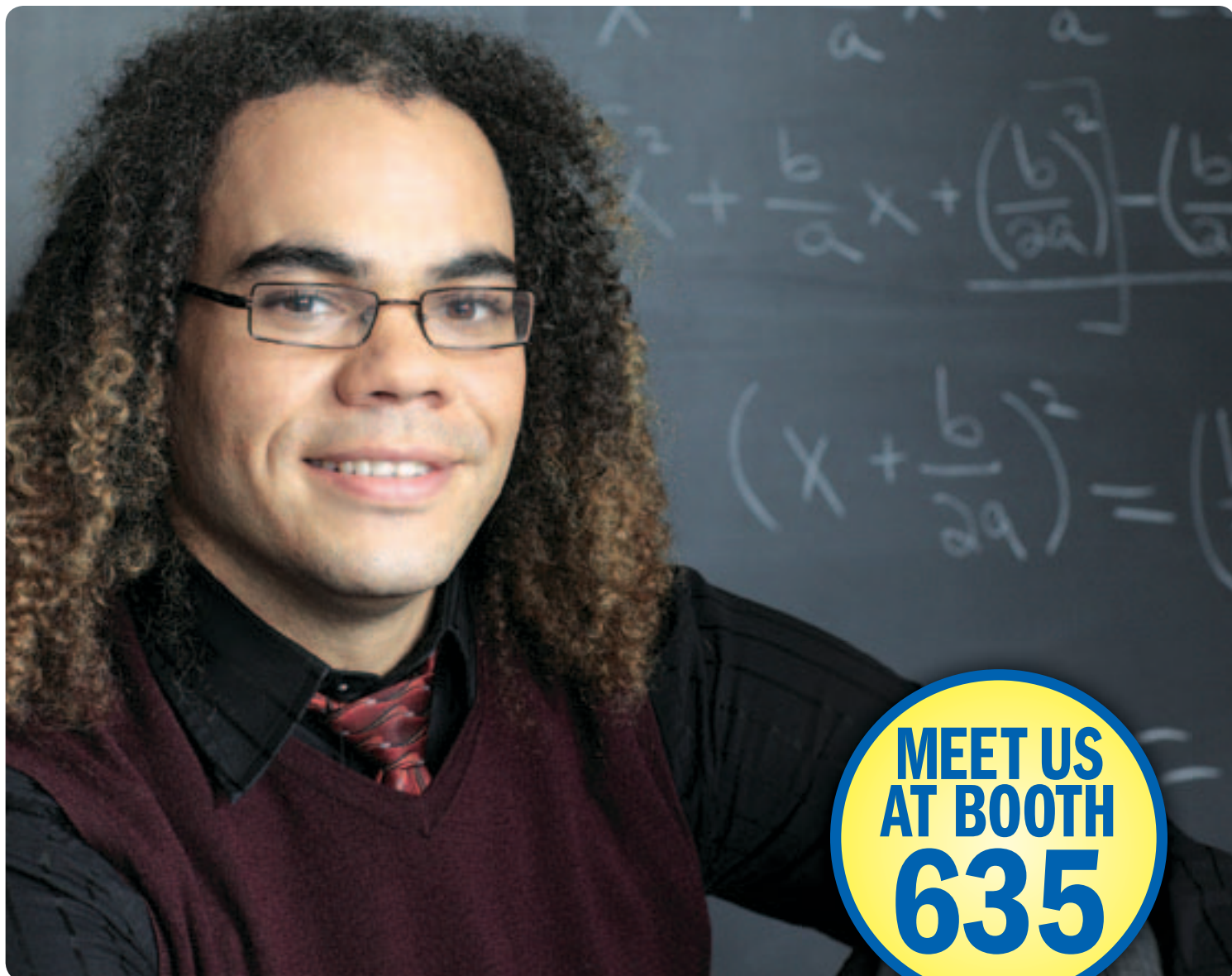
(4–9) Exhibitor Workshop

Find out how Hands-On Equations enables students to represent and solve word problems, visually using game pieces, including age and consecutive number problems.

Borenson and Associates, Inc.

Allentown, Pennsylvania

**116 (Convention Center)**



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AT BOOTH  
**635**

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*Helping Scores of Students*



10:00 A.M.–11:00 A.M.

**ew 386.3**

**Redesigned, Rechargeable,  
Revolutionary: Experience the Latest  
TI-Nspire™ Technology**

(7–12) Exhibitor Workshop

See TI's newest learning technology: redesigned, rechargeable, & revolutionary! The most visually engaging TI technology ever allows for exploration of math concepts through multiple representations, interactive manipulation, and brilliant display – and has some new features that may surprise you. Plus, it's permitted on many college entrance exams!

Texas Instruments (TI)  
Dallas, Texas

**209 (Convention Center)**

**ew 386.4**

**Building the Fundamentals for  
AP Readiness with SpringBoard  
Mathematics**

(9–12) Exhibitor Workshop

Attendees will trace how the NCTM Process Standards build fundamental understandings required for AP readiness. SpringBoard activities will provide insight into how students internalize the habits that promote success in AP courses, and it will demonstrate concrete examples of how one can stem of AP questions for secondary school math classroom use.

The College Board  
New York, New York

**208 (Convention Center)**

10:30 A.M.–12:00 NOON

**387**

**Spotlight on Geometry**

(PreK–2) Gallery Workshop

Take geometry to new dimensions with command math performances connected to literature, drama, and math standards. Experience teacher-created math theater activities that enhance students' learning. See how literature and drama can be infused into your teaching, and leave with scripts, Web tools, and Web sites to produce your own class math videos.

Charyl Kerns Hills  
Council Rock School District, Newtown, Pennsylvania

**Marriott Ballroom 1/2 (Marriott Downtown)**

**388**

**Building Early-Childhood Foundations  
of Geometry**

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

Participants will learn how to introduce geometry concepts in prekindergarten through second grade, with the use of household objects, classroom materials, and children's literature. These activities will provide the foundation for geometry concepts that students will use in the intermediate grades.

Jeanne White  
Elmhurst College, Illinois

**White River Ballroom I/J (JW Marriott)**

**389**

**Number and Geometry: NRC's  
Foundation for Early Childhood Math  
Programs**

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

The National Research Council's (NRC's) report *Mathematics Learning in Early Childhood* recommends that mathematics experiences in early childhood settings concentrate on (1) number and (2) geometry, spatial relations, and measurement. The materials in this workshop integrate number and geometry concepts in an environment that is engaging and appropriate for young children.

Lynn T. Kuske  
Kuske Math, Inc., Bellevue, Washington

Karen Fuson  
Emerita, Northwestern University, Evanston, Illinois

**Sagamore Ballroom 3 (Convention Center)**

**391**

**Japanese Abacus: Excellent  
Manipulative for Children**

(PreK–5) Gallery Workshop

The Japanese abacus, called a soroban, has been one of the most effective educational tools in Japan for improving children's number sense for hundreds of years. The presenter will demonstrate how to use a soroban in mental calculation.

Hiroo Kodama  
Tomoe MI Academy, Tokyo, Japan

Tomoe Fujimoto  
Tomoe MI Academy, Tokyo, Japan

**126/127 (Convention Center)**

10:30 A.M.–12:00 NOON

**▶ 392**

**Engaging Activities for Introducing Important Ideas in Elementary School Mathematics**

**(PreK–5) Gallery Workshop**

Activities can be designed to engage students' interests and provide learning experiences that support students' development of important math concepts. This workshop will provide you the opportunity to experience and analyze engaging activities designed to introduce and support essential math topics spanning the elementary grades.

Andrea Aiona  
University of Hawaii at Manoa

Beatriz Camacho  
George Washington High School, Barrigada, Guam

Dora Miura  
Saipan Southern High School, Northern Mariana Islands

**121/122 (Convention Center)**

**393**

**Constructing Zodiac Constellations from Ancient Chinese Tangrams**

**(3–5) Gallery Workshop**

Technology and learning's interdisciplinary nature open the door to develop spatial sense in real-life contexts. Participants will construct shapes in a zodiac context and compare the perimeters and areas of animals. Videotaped, talk-aloud examples will show students' sense making of mathematical relationships. The presenter will offer classroom-ready materials.

Judit Kerekes  
City University of New York—College of Staten Island,  
New York

**Marriott Ballroom 5 (Marriott Downtown)**

**394**

**Fractions Do Make Sense and All Students Can Learn Them**

**(3–5) Gallery Workshop**

**TODOS: Mathematics for ALL Presentation**

Learn how to scaffold fractions teaching and learning by focusing on the big ideas and combining the uses of multiple representations, manipulatives, and technology. The speaker will present strategies for integrating the use of language and discourse to make fractions accessible for all learners, including English language learners and students with special needs.

Nora G. Ramirez  
Arizona State University, Tempe, Arizona

**205/206 (Convention Center)**

**395**

**Silly Statistics and Meaningful Means: Data Explorations for Elementary School**

**(3–5) Gallery Workshop**

This workshop will engage participants in several investigations designed to help students develop an understanding of data analysis. These activities will focus on collecting and organizing data, and on developing an understanding of the statistical methods used in the upper elementary grades. Participants will leave with classroom-ready activities.

Emily Combs  
Clinton Public Schools, Missouri

Ann McCoy  
University of Central Missouri, Warrensburg

Jami Smith  
Archie Public Schools, Missouri

**101/102 (Convention Center)**

**396**

**Geometric and Algebraic Reasoning through Pattern Generalization**

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

This presentation will describe methods to solve challenging pattern problems that promote geometric and algebraic reasoning. Participants will explore activities used with fourth to sixth graders as well as with elementary school teachers. Activities will focus on connecting visual and abstract representations and emphasize interconnections between geometry and algebra.

Galina Dobrynina  
Wheelock College, Boston, Massachusetts

**Grand Ballroom II (JW Marriott)**

FRIDAY

10:30 A.M.–12:00 NOON

**397**

**Algebraic Thinking: Becoming Proficient with Patterns (Discovering the Explicit Rules)**

(3–8) Gallery Workshop

Participants will work with manipulatives (colored square tiles) to construct patterns, continue those patterns, and develop iterative rules followed by explicit rules which will enable them to predict the total number of squares needed for any stage in the pattern. Handouts and CD's will be available.

Linda S. West  
Northern Kentucky University, Highland Heights

Phyllis A. Kelsch  
Phillip A. Sharp Middle School, Butler, Kentucky

*White River Ballroom A/B (JW Marriott)*

**398**

**Missing Links in Proportional Reasoning**

(3–8) Gallery Workshop

Participants will explore tasks and students' solution strategies about proportional reasoning. The goal will be understanding the evolution of proportional reasoning with tasks that support students' understanding of inverse proportions.

Kathleen Lynch-Davis  
Appalachian State University, Boone, North Carolina

Signe Kastberg  
Purdue University, West Lafayette, Indiana

Beatriz D'Ambrosio  
Miami University, Oxford, Ohio

*White River Ballroom E (JW Marriott)*

**399**

**What's Vocabulary Got to Do with Equity in Mathematics?**

(3–8) Gallery Workshop

Struggling students often lack the requisite math vocabulary. This presentation will focus on essential components of embedded vocabulary development. The speakers will share practical strategies and games to increase mathematical vocabulary, many of which you can implement next week.

Ruth Chamberlin  
Olympia School District, Washington

Shairlyn Fish  
Moses Lake School District, Washington

*Sagamore Ballroom 1 (Convention Center)*

**400**

**Engaging Young Women in Geometric Investigations**

(6–8) Gallery Workshop

Women and Mathematics Education Presentation

The presenters will share engaging investigations that they use in outreach programs for young women in grades 6–8 and are appropriate for all students. Activities include concepts such as volume relationships, tilings with rep-tiles, patterns used to discover Euler's formula in nature, and linear relations between knotted ropes and their lengths.

Elizabeth Yanik  
Emporia State University, Kansas

Marvin Harrell  
Emporia State University, Kansas

*Sagamore Ballroom 7 (Convention Center)*

**401**

**Fantastic Flexible Foldables for the Middle-School Classroom**

(6–8) Gallery Workshop

Help your middle-school students create irresistible math tools that they can't put down. Participants will make five different styles of foldable learning tools using paper, scissors and glue. Projects can be folded and unfolded to reveal facts and questions about geometry, integers, fractions, and factors; assessment options will be provided.

Carol J. DeFreese  
Fort Zumwalt School District, O'Fallon, Missouri

*124 (Convention Center)*

**402**

**Cutting Apart or Putting Together: Geometrical Reasoning Practice with Shapes**

(6–12) Gallery Workshop

Students need interesting geometric examples to explore for practice with reasoning. Using scissors, the speaker will dissect well-known figures to produce shapes. Using tape, he will assemble shapes from geometrical building blocks. In each instance, he will do the hands-on work in a parallel with the reasoning that yields interesting angle or ratio properties.

James King  
University of Washington, Seattle

*105/106 (Convention Center)*

10:30 A.M.–12:00 NOON

**403**

### **Mathematics in the Sky**

(6–12) Gallery Workshop

This presentation will show instructors new ways to teach distance-rate-time problems, using real-life air traffic control.

William C. Luke  
Central Texas College, Killeen

Gregory Luke  
Temple High School, Texas

**Grand Ballroom VII (JW Marriott)**

**404**

### **Using Free NCTM Resources to Promote an Understanding of Proportion**

(6–12) Gallery Workshop

Solve a mystery with proportional reasoning. Participants will use clues from the Highway Robbery lesson on the Illuminations Web site, [illuminations.nctm.org](http://illuminations.nctm.org), to nab a criminal. They will also investigate online tools that develop students' conceptual understanding of proportions. All resources for this workshop are available free from NCTM.

G. Patrick Vennebush  
National Council of Teachers of Mathematics, Reston, Virginia

**Sagamore Ballroom 5 (Convention Center)**

**404.1**

### **Interesting Ideas, Manipulatives, and Activities for Teaching Geometry Topics**

(6–12) Gallery Workshop

Participants will use hinged mirrors, rubber bands, patty paper, paper plates, other manipulatives, and interesting problems to develop and apply geometry concepts and review vocabulary such as similarity, triangle heights, transformations, central angles, polygons, polyhedra, area, and more.

Christine Mikles  
College Preparatory Mathematics Educational Program, Sacramento, California

**Grand Ballroom IV (JW Marriott)**

**NCTM 405**

### **Building Lessons for All Students: Workshop for Grades 6–12**

(6–12) Gallery Workshop

Are all your students the same? Never! Learn to develop lessons to meet the needs of the full range of students in a class. The speaker will work on strategies in all aspects of lesson development, including questions, activities, assignments, technology, and assessment. Start developing strategies you can use to get everyone engaged and learning math.

Edward C. Nolan  
Albert Einstein High School, Kensington, Maryland

**Wabash Ballroom 2 (Convention Center)**

**406**

### **NSpiring Investigations of Quadrilaterals and Their Properties**

(9–12) Gallery Workshop

Participants will use the geometry utility on the TI-NSpire handheld to construct various quadrilaterals and transform them dynamically to explore properties of the quadrilateral family. This hands-on presentation will focus on an interactive approach to enhance your students' abilities to visualize, conjecture, and prove properties they have discovered.

Ilene Hamilton  
Retired, Adlai Stevenson High School, Lincolnshire, Illinois

**Marriott Ballroom 7/8 (Marriott Downtown)**

**407**

### **Using Super Mario with Falling Objects and Quadratics**

(9–12) Gallery Workshop

Attendees will work on a series of problems that model the motion of falling objects, using the Super Mario character. Mario's adventures will model quadratic and linear-quadratic systems of equations. Attendees will use the graphing calculator to solve these systems.

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

**103/104 (JW Marriott)**

FRIDAY



# A New NCTM Event



July 28–30, 2011 | Orlando, Florida

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Join us and give your students the essential tools to succeed. By participating in the Institute attendees will:

- Better understand how reasoning and sense making are integral to teaching the *Common Core State Standards for Mathematics*.
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- Learn to select, develop, and use mathematical tasks to engage students in reasoning and sense making.
- Initiate an action plan for their school or practice.



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10:30 A.M.–12:00 NOON

**408**

**Building Conway's Pencil Models**

(9–12, Higher Education) Gallery Workshop

John Conway of Princeton invented a class of models built of hexagonal prisms. Participants will learn to build these three-dimensional geometric models from pencils, explore symmetries of these models, and understand the relationship between this model and the cubic lattice. Models may be viewed at [www.rider.edu/172\\_5403.htm](http://www.rider.edu/172_5403.htm).

Charles F. Schwartz  
Rider University, Lawrenceville, New Jersey

**Grand Ballroom IX (JW Marriott)**

**409**

**The Fundamental Theorem of Calculus: Integration, Differentiation, Making Connections**

(9–12, Higher Education) Gallery Workshop

Working through a series of paper-and-pencil- and technology-based classroom activities, participants will experience hands-on investigations designed to help students improve their conceptual understanding of the fundamental theorem of calculus. Activities will focus on connections between integrally defined functions and the derivatives of these functions.

Mike Koehler  
Blue Valley North High School, Overland Park, Kansas

**203/204 (Convention Center)**

**410**

**Modular Arithmetic: A Delightful Excursion into Mathematical Discovery**

(Higher Education, Preservice and In-Service)  
Gallery Workshop

The NCTM Standards encourage mathematical discovery. This hands-on workshop will have participants apply modular arithmetic to algebra, geometry, calculus, number theory, and discrete mathematics. Detecting patterns, using analog clocks, and a CAS graphing calculator will help participants explore an exciting world of possibilities.

Jay L. Schiffman  
Rowan University, Glassboro, New Jersey

**144/145 (Convention Center)**

11:00 A.M.–12:00 NOON

**411**

**Broaden Your Perspective: Geometry—What's in Your Area?**

(General Interest) Session

Geometry is everywhere! Take a tour with the speakers. They will actively explore the geometry of your environment—in architecture, natural formations, and interior design. Using interactive geometry software with embedded photos and movies, they will make strong connections to number, measurement, and algebra through the work of students of a wide range of ages and abilities.

Iris DeLoach Johnson  
Miami University, Oxford, Ohio

Michael Todd Edwards  
Miami University, Oxford, Ohio

**Sagamore Ballroom 6 (Convention Center)**

**412**

**Building Shared Knowledge and Practice: China's Three-Tier Professional Development Scheme**

(General Interest) Session

The speakers will explore the three-tier professional development scheme institutionalized at the national, local, and school levels in China's elementary schools. The systematic scheme has been instrumental in spreading reform pedagogies and enabling teachers' transformation in China's constructivist-based curriculum reform. Two schools will be spotlighted.

Wei Gao  
Syracuse University, New York

Patricia Tinto  
Syracuse University, New York

**White River Ballroom G/H (JW Marriott)**

FRIDAY

11:00 A.M.–12:00 NOON

**413**

**Elementary Mathematics Specialists:  
Constructing State Certification and  
Transforming Students' Learning**

*(General Interest) Session*

Fewer than twelve states have an Elementary Mathematics Specialist (EMS) certification, yet every state uses EMS professionals in some capacity. The speakers will explore documents supporting the development of EMS certification, examine the most recent research on EMS's effect, and learn from states at various points in the certification process.

Nicole Rigelman  
Portland State University, Oregon

Maggie McGatha  
University of Louisville, Kentucky

**Marriott Ballroom 3/4 (Marriott Downtown)**

**414**

**How Do My Students Compare?  
Exploring National Assessment Tools**

*(General Interest) Session*

Participants will learn how use online tools to help prepare their students for standardized testing, as well as to compare their students' performance with students in their state and the nation. The online tools provide access to hundreds of multiple-choice and open-ended items, along with scoring rubrics and state and national results.

Crystal Walcott  
Indiana University–Purdue University Columbus

Doris Mohr  
University of Southern Indiana, Evansville

Peter Kloosterman  
Indiana University Bloomington

**207 (Convention Center)**

**415**

**Making the Most of Coaching with  
Cohorts**

*(General Interest) Session*

Districts around the country have created math coaching positions. Coaches are often responsible for too many teachers and schools. Come hear about cohorts that use a lesson-study approach, promote professional learning communities, increase teachers' knowledge of content and pedagogy, increase students' achievement, and move beyond the power of one.

Pia Hansen  
PHP Consulting, Cheyenne, Wyoming

**Sagamore Ballroom 2 (Convention Center)**

**416**



**No More Leftovers:  
Making Democracy a  
Reality In Schools**

*(General Interest) Session*  
*Iris M. Carl Equity Address*

Are we producing leftovers—students taught by leftover teachers, using leftover materials, sometimes in leftover schools? We set high expectations but make it okay for some students to fall short. These students face a future in leftover jobs with little chance of breaking the pattern. How can we make democracy a reality in math class and in school?

Seeley is a 35-year mathematics educator and change facilitator at local, state, and national levels. She has been an active participant in and spokesperson for improving mathematics education, motivated by a deep commitment to equity for all students. Active in mathematics, she taught in middle and high school, working as a grades K–12, district mathematics supervisor. She served as director of Mathematics for the Texas Education Agency, taught as a Peace Corps volunteer in Burkina Faso, and currently works on state and national policy and improvement efforts in mathematics education.

Cathy Seeley  
Past President, National Council of Teachers of  
Mathematics; Charles A. Dana Center, University of Texas  
at Austin

**500 Ballroom (Convention Center)**

FRIDAY



11:00 A.M.–12:00 NOON

**417**

### **Mathematical Players in the Preschool Classroom**

*(PreK–2) Session*

Our Reggio-inspired classroom promotes mathematical thinking and problem solving. Two preschool teachers will share classroom practices through photos, children's work, and anecdotes. Come learn ways to document young mathematicians at work.

Brenda S. Mercado  
Tucson Unified School District, Arizona

Ann Sanchez  
Tucson Unified School District, Arizona

**109/110 (Convention Center)**

**418**

### **When Math Becomes a Balancing Act**

*(PreK–2) Session*

What do they know? Introducing balance scales with open play and discussion has inspired students to create new mathematical meaning. The speakers explored how they could be developed this idea further with lesson study. They will share a classroom-tested lesson based on what students' language revealed. Come hear what kids had to say; stay to listen to the story.

Rachel D. Landreman  
Hamilton City Schools, Ohio

Dana C. Cox  
Miami University, Oxford, Ohio

**Wabash Ballroom 1 (Convention Center)**

**419**

### **Promoting Students' "Math Talk" through Shared Reading**

*(PreK–2, Higher Education) Research Session*

This session will share the results of giving teachers explicit instruction in embedding "math talk" in shared storybook reading. The results will detail the training's effect on the frequency, the content, and the complexity of teachers' "math talk" during shared storybook reading.

Lynn Columba  
Lehigh University, Bethlehem, Pennsylvania

**White River Ballroom F (JW Marriott)**

**420**

### **Student-Created Geometry Books for Kids: A Transforming Partnership**

*(PreK–2, Preservice and In-Service) Session*

Hear three perspectives on a university-school project that builds content knowledge in preservice teachers and their pen pals while offering both a view into appealing activities—teaching children and being a college student. Pen pal letters, student-created geometry books, and a school visit are part of this exciting partnership.

Sally Kleiner  
Dayton Public Schools, Ohio

Virginia L. Keen  
University of Dayton, Ohio

Kimberly S. Smethurst  
University of Dayton, Ohio

**Grand Ballroom X (JW Marriott)**

**421**

### **A Journey of Project, Place, and Problems in Mathematics Lessons**

*(PreK–5) Session*

Come explore the projects the speaker has used over a two-year journey in a project-based setting. She will share projects that focus on mathematics and discuss the essential roles of community and communication as they pertain to the projects and mathematical thinking.

Elizabeth Winarski  
Project School, Bloomington, Indiana

**Grand Ballroom I (JW Marriott)**

**422**

### **Developing Algebra, Number Sense, and Geometry through NCTM's Free E-Examples**

*(PreK–5) Session*

Make your classroom come alive while developing algebra, number sense, and geometry concepts through NCTM's E-examples! From geoboards and tangrams to hundreds boards and interpreting graphs, the newly revised applets give you online resources to demonstrate important topics in your classrooms and for students to explore on their own. Facilitate guided reflections with these applets on Monday!

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

**103/104 (Convention Center)**

FRIDAY



11:00 A.M.–12:00 NOON

**423**

**Stories That Count: Children's Literature in the Math Classroom**

(PreK–5) Session

The right story sparks interest in math, provides a way for children to make mathematics learning personal, and helps children realize the variety of situations in which people use math. Plus, good books make math fun! Explore the best in children's books with underlying math themes with the speaker, an award-winning author. Book lists and lesson plans will be available.

M. W. Penn  
Author, New Haven, Connecticut

**Marriott Ballroom 9/10 (Marriott Downtown)**

**424**

**Teachers as Learners, Children as Teachers of Mathematics**

(PreK–5) Session

What do teachers learn about geometry and measurement when they invite children in first, second, and fourth grade to share their thinking? The speakers will share how conversations in mathematics assessment provide opportunities for children to teach through illustrating their deep thinking and for teachers to learn by listening to children.

Florence Glanfield  
University of Alberta, Edmonton, Canada

M. Shaun Murphy  
University of Saskatchewan, Saskatoon, Canada

Gladys Sterenberg  
University of Alberta, Edmonton, Canada

**Grand Ballroom VI (JW Marriott)**

**425**

**Visual Reasoning: Seeing and Learning Mathematics**

(PreK–5) Session

Presidents' Series Presentation

Visual reasoning is a powerful tool for making sense of mathematics. Come examine activities designed to have children use their visual abilities while learning number, geometry, and measurement concepts.

Kay A. Wohlhuter  
Research Council on Mathematics Learning; University of Minnesota—Duluth

**Sagamore Ballroom 4 (Convention Center)**

**426**

**Differentiating through Problem Solving: Creating a Community of Diverse Learners**

(3–5) Session

Teaching math to a wide spectrum of learners is challenging. This presentation will explore teaching mathematics concepts through problem-solving tasks with several entry points. Come see how writing and conversation are essential ingredients in helping students make meaning of mathematical language and naturally create opportunities for differentiation.

Beth Buchholz  
Albemarle County Schools, Charlottesville, Virginia

Kateri Thunder  
University of Virginia, Charlottesville

**Grand Ballroom III (JW Marriott)**

**427**

**Mathematics Concept Maps: A Path to Understanding**

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

Attendees will actively engage in "concept mapping" assessment techniques in mathematics that will reach students at the concrete, pictorial-representational, and symbolic levels of learning. Critical thinking and problem solving will be emphasized while connecting math concepts. Concept maps on geometry will be included.

Nancy L. Gallenstein  
Coastal Carolina University, Conway, South Carolina

**143 (Convention Center)**

**428**

**Absolute to Relative Thinking: The Road to Proportional Reasoning**

(3–8) Session

When given a proportional-reasoning situation, do your students use absolute or relative thinking? Explore the difference between absolute and relative thinking as you engage in solving real-world tasks, examine students' work, and consider available options in order to strengthen their thinking in proportional-reasoning situations.

Connie Laughlin  
Consultant, Milwaukee, Wisconsin

Beth Schefelker  
Milwaukee Public Schools, Wisconsin

**101/102 (JW Marriott)**

FRIDAY

**429****Building Number Sense: Balancing Paper, Pencil, and Calculator****(3–8) Session**

This highly interactive session will highlight activities and strategies that build a sense of number. Activities will indicate when using a calculator is appropriate and when it is not necessary. Participants will leave with a comprehensive handout ready to use in class the next day.

Joan J. Vas  
Kean University, Union, New Jersey

**123 (Convention Center)****430****Unlocking Students' Potential: Going from Mathematical Frustration to Mathematical Inspiration****(3–8) Session**

Learn about strategies and perspectives to help teachers create classrooms that help diverse students unlock their inner mathematician. The speakers' methods have led to significant increases in achievement as well as turnarounds in attitudes. They will share activities, work samples, and provide plenty of resources to help transform your classroom.

Mark Ellis  
California State University Fullerton

Cathery Yeh  
Arnold Elementary School, Cypress, California

**Marriott Ballroom 6 (Marriott Downtown)****431****Endless Possibilities: Open-Ended Projects in Middle School Mathematics****(6–8) Session**

Creativity is vital to math, but it can be elusive in daily classes. Open-ended projects give students opportunities for high levels of understanding, expressions of their creativity, and meaningful connections between math and the real world. Participants will see middle school examples and begin to develop their own projects.

Heather Carmody  
Park Tudor School, Indianapolis, Indiana

**120 (Convention Center)****432****Geometry with E-Motion!****(6–8) Session**

Make mathematics more accessible to all students. "Motion" geometry enables students to use intuitive sense making to understand middle grades topics. This session will demonstrate how transformations relate to the geometry topics of congruence and similarity and also connect to rational number and proportional reasoning.

Hannah Slovin  
University of Hawaii, Honolulu

Barbara J. Dougherty  
Board of Directors, National Council of Teachers of Mathematics; Iowa State University, Ames

**111/112 (Convention Center)****433****Prove It! Focusing on Mathematical Reasoning and the Pythagorean Theorem****(6–8) Session**

Students may remember  $a^2 + b^2 = c^2$ , but often forget what it means or know when to apply it. Explore a fun, hands-on approach that encourages metacognitive reasoning and builds a deep understanding of the Pythagorean theorem. Using inductive and deductive reasoning, these field-tested activities will bring out the real mathematician in your students.

Ann Marie Spinelli  
Bristol Public Schools, Connecticut

M. Katherine Gavin  
University of Connecticut, Storrs

**140 (Convention Center)****434****Teaching and Learning Rational Numbers for the Internet Generation****(6–8) Session**

This presentation will examine how to engage, encourage, and teach rational numbers to the Internet Generation. Participants will receive videos, Web site addresses, social networking opportunities, and motivational strategies for students in grades 3–8 that can lead to building better number sense and understanding of rational numbers.

Eric Milou  
Rowan University, Glassboro, New Jersey

**Hall F (Convention Center)**

11:00 A.M.–12:00 NOON

**435**

### **Integrating The Geometer's Sketchpad® (GSP) into Understanding the Pythagorean Theorem**

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

This presentation will focus on discussing the construction of a GSP-based unit designed to enhance preservice teachers' understanding of the Pythagorean theorem. Students often learn the Pythagorean theorem through memorization without understanding. Tasks and activities were developed to address geometric and algebraic understanding using GSP.

Olufunke Adefope  
Indiana University Bloomington

Mi Yeon Lee  
Indiana University Bloomington

**125 (Convention Center)**

**436**

### **Transform Your Geometry Teaching with These Free, Online Resources**

(6–12) Session

With more than a million pages of cataloged content, the Math Forum is home to a large variety of mathematics resources and lets you find reference materials, applets, activities, and problems easily that engage your students in exploring topics in geometry. Technology helps make the material come alive and allows for dynamic investigations.

Steve Risberg  
The Math Forum @ Drexel University, Philadelphia, Pennsylvania

Annie Fetter  
The Math Forum @ Drexel University, Philadelphia, Pennsylvania

**128 (Convention Center)**

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- Interactive whiteboard activities to engage all students
- Parent membership at no additional cost
- Embedded professional development for teachers

FRIDAY

**437****Video Games for Mathematics Education: They Will Soon Get Better***(6–12) Session*

A number of math-educational video games are available. Most focus on basic skills and are little more than a forced marriage of video games to traditional pedagogy. As our experience with the genre increases, we can expect to see some genuinely innovative new educational games. What pedagogic and design principles are educational video game developers currently following? How will they affect the way we teach?

Keith Devlin

Stanford University, Palo Alto, California

**Grand Ballroom V (JW Marriott)****438****Bringing Algebra and Geometry Together through Linear Algebra***(9–12) Session*

Linear algebra can bring algebraic and geometric thinking together in ways that reinforce both. Participants will sample activities from a new, NSF-funded high school course that explores vector algebra and how matrices can represent transformations in a way that introduces computer graphics and animation. The only background required is second-year algebra.

Kevin Waterman

Education Development Center, Newton, Massachusetts

Stephanie Ragucci

Andover High School, Massachusetts

Bowen Kerins

Education Development Center, Newton, Massachusetts

**Grand Ballroom VIII (JW Marriott)****439****Sequences of Shapes and the Cantor Set***(9–12) Session*

To help students understand that sequences are not necessarily lists of numbers, the speaker will explore sequences of nonnumeric mathematical objects such as geometric shapes and intervals on the real number line. He will then extend this to develop the famous Cantor set, which has a number of surprising properties and connections to precalculus topics.

Martin Funk

New Trier High School, Winnetka, Illinois

**107/108 (Convention Center)****440****Counting across the Curriculum***(9–12, Higher Education) Session*

Rich problems involving counting occur not only in various mathematics courses but also in other courses outside mathematics. Explore some of these problems in depth and learn about the counting techniques used in the solution processes. Participants will receive ready-to-use classroom activities involving these rich problems.

Clifton Wingard

Delta State University, Cleveland, Mississippi

**201/202 (Convention Center)****441****Geometry and Technology: The Unit Circle and Geogebra***(9–12, Preservice and In-Service) Session*

Viewers will see the pencil-protractor method of using the unit circle to obtain the trigonometric functions. The lesson will then be taught using GeoGebra. With technology, the audience will discover that students can obtain a clearer understanding of where the trigonometric functions get their values, in a more accurate illustration.

Zyad Bawatneh

University of Central Florida, Orlando

Erhan Haciomeroglu

University of Central Florida, Orlando

Deana L. Deichert

University of Central Florida, Orlando

**141/142 (Convention Center)**



11:00 A.M.–12:00 NOON

**442**

### **How Graphing Technology Changes Teachers' Questioning**

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

The TI-Nspire provides teachers with a technology tool that can foster mathematical discourse through exploration. In order to promote conversation, the teacher's questions aim for eliciting students' thinking. Several questioning types will be shared for sample algebra and geometry classroom activities.

Daniel Ilaria  
Ridgewood Public Schools, New Jersey

**Wabash Ballroom 3 (Convention Center)**

**443**

### **"Show Your Work!" Why This Is Not Enough with Wolfram|Alpha**

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

Do you assess your students' understanding by telling them to show their work? Come see why Wolfram|Alpha, a computational Web site, might change the way you think about assessing your students. Learn alternative assessment strategies as well as ways to incorporate technology into instruction.

Sarah K. Bleiler  
University of South Florida, Tampa

**White River Ballroom C/D (JW Marriott)**

11:30 A.M.–12:30 P.M.

**ew 443.1**

### **Finally, a Math Curriculum for Students of Differing Abilities: Equals Curriculum**

(PreK–12) Exhibitor Workshop

Equals is a curriculum for students of differing abilities, encompassing readiness, fundamental, and higher-order math skills—data analysis, probability, spatial sense, geometry, and more. The curriculum offers a multisensory structure to math, with three levels of instructional strategies or components dedicated to each lesson.

AbleNet  
Roseville, Minnesota

**116 (Convention Center)**

**ew 443.2**

### **Assessment and Hands-On Lessons to Differentiate Instruction for RtI**

(PreK–12) Exhibitor Workshop

Moving with Math® is the Response to Intervention (RtI) solution that will reach PreK through high school students in all tiers with proven results! Attendees will learn about our Web-based assessment suite that provides universal screening and progress monitoring. Participants will also learn hands-on activities and what makes Moving with Math the intervention leader.

Math Teachers Press  
Minneapolis, Minnesota

**208 (Convention Center)**

**ew 443.3**

### **Improving Students' Success through Better Engagement: MathXL® for School**

(6–12) Exhibitor Workshop

Through rich, multimedia resources, MathXL® for School allows teachers to focus on important aspects of teaching, such as measuring learning outcomes, while students receive a personalized learning experience with immediate feedback, interactive learning aids, and practice, practice, practice! NEW: *Alignment to Common Core State Standards!*

Pearson  
Upper Saddle River, New Jersey

**117 (Convention Center)**

**ew 443.4**

### **Redesigned, Rechargeable, Revolutionary: Experience the Latest TI-Nspire™ Technology**

(7–12) Exhibitor Workshop

See TI's newest learning technology: redesigned, rechargeable, and revolutionary! The most visually engaging TI technology ever allows for exploration of math concepts through multiple representations, interactive manipulation, and brilliant display, and it has some new features that may surprise you. Plus, it's permitted on many college entrance exams!

Texas Instruments (TI)  
Dallas, Texas

**209 (Convention Center)**

12:30 P.M.–1:30 P.M.

**444**

### **Building and Supporting Math Leadership: One Step at a Time**

(General Interest) Session

How do we establish systems of leadership? Learn how the Milwaukee Mathematics Partnership has established a support system for district math leaders, school math teacher leaders, and teachers. Discuss examples of how one school is using leadership and coaching strategies, have attributed to more successes in mathematics teaching and learning.

Astrid Fossum

Milwaukee Public Schools, Wisconsin

Frelesha LeFlore

Milwaukee Public Schools, Wisconsin

**143 (Convention Center)**

**445**

### **Data, Data, Data, Got Data? Engaging Students in Their Data**

(General Interest) Session

This presentation will describe various ways to collect and analyze data for improving students' pass rate on high-stakes tests. The audience will see how teachers and students share in the process of collecting and analyzing data. Students will be able to identify areas of weakness and prescribe strategies to strengthen them.

Sharon J. Baker

Warwick High School, Newport News, Virginia

Sherri Sanchez

Warwick High School, Newport News, Virginia

Barry Zorumski

Warwick High School, Newport News, Virginia

**103/104 (Convention Center)**

**446**

### **Integrating Language Learning Activities into Mathematics Classes for Successful Learning**

(General Interest) Session

TODOS: Mathematics for ALL Presentation

A high school teacher and a university professor will engage participants in hands-on activities that integrate research-based language-learning strategies into mathematics classrooms. The activities help English language learners successfully develop proficiency in English while they construct and transform their prior mathematics content knowledge.

Robert Perez

Hanna High School, Brownsville, Texas

Joyce F. Fischer

Texas State University—San Marcos

**201/202 (Convention Center)**

**447**

### **Online Learning and the Interactions While Learning Mathematics**

(General Interest) Research Session

Research surrounding online learning has focused primarily on college courses where students' learning is self-directed and requires limited interaction. This presentation will explore findings focused on high school students' interactions with online content and the effect teacher and peer engagement has on their mathematical learning.

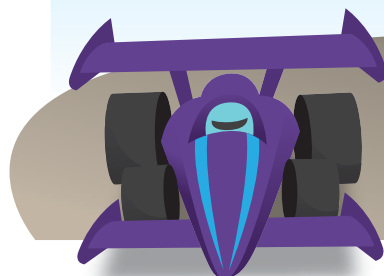
Cherie Ichinose

California State University Fullerton

**Grand Ballroom VIII (JW Marriott)**

FRIDAY

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



12:30 P.M.–1:30 P.M.

**448**

**Public Displays of Authority:  
Cultivating Students' Decision-Making  
in Mathematics**

*(General Interest) Session*

What mathematical decisions do your students make? How do they make them? Using episodes from two years of reflection on the way authority works in our classrooms, the speakers will identify challenges and opportunities teachers face. What mathematics do your students trust, and from whom? How can you help them develop confidence in their understanding?

Tracy Gatto  
Leo Hayes High School, Fredericton, New Brunswick,  
Canada

Sandra Braun  
Devon Middle School, Fredericton, New Brunswick,  
Canada

Kirk Gormley  
Leo Hayes High School, Fredericton, New Brunswick,  
Canada

**125 (Convention Center)**

**449**

**Time Travel with M. C. Escher from  
Islamic Art to Infinity**

*(General Interest) Session*

Escher used Islamic art as a basis for creating intriguing masterpieces. Participants will travel through a Powerpoint presentation of Escher's world to learn how to construct triangular and square grids, recognize patterns, arrange stars, use a "nibbling" technique to create Escher-like designs, and see images enhanced by Adobe Photoshop. Materials will be available.

Carol D. Desoe  
Scarsdale High School, Scarsdale, New York

**White River Ballroom F (JW Marriott)**

**450**

**Math Work Stations: Little Stuff That  
Makes a Big Difference**

*(PreK–2) Session*

Learn how to set up and manage partnering math work stations in prekindergarten through grade 2. This classroom structure helps children develop conceptual understanding. It also encourages students to use math vocabulary as they talk about their thinking and reinforce big ideas explored in whole-class instruction. Get practical ideas today for use tomorrow.

Debbie Diller  
Debbie Diller & Associates, Houston, Texas

**101/102 (JW Marriott)**

**451**

**The Marriage of Lesson Study and  
CGI: Will It Last?**

*(PreK–2, Preservice and In-Service) Session*

A three-year, grant-funded study to improve grades K–2 teacher quality combined lesson study and cognitively guided instruction (CGI). Learn how the two professional development approaches complement each other. Watch lesson study cycles that use a CGI philosophy, and observe how the resulting lessons engage children in mathematics.

Melanie R. Wenrick  
California State University, Fresno

Naomi S. Kent  
San Joaquin Valley Mathematics Project, California State  
University, Fresno

**123 (Convention Center)**

**452**

**Math Night: So Easy a Caveman Can  
Do It!**

*(PreK–5) Session*

Have you ever wanted to host a math night, but were afraid to try? The speakers have run highly successful math nights for many years and coached many other teachers and schools to begin their own math nights. They will share the how-to's, show a step-by-step process, and give some prizes.

Sandra M. Powers  
Retired, Charleston, South Carolina

Joyce A. Moon  
Berkeley County Schools, Summerville, South Carolina

**Wabash Ballroom 1 (Convention Center)**

12:30 P.M.–1:30 P.M.

**453**

### **Preplanning for Differentiation: Teaming with a Math Coach**

*(PreK–5) Session*

Teachers face the challenge of planning for different levels of mathematical abilities on a daily basis. Planning does not have to be a solitary endeavor. Math coaches and teachers can form a powerful team. This presentation will discuss ideas from a project that allowed this team planning to occur.

Susan Deese

Portsmouth School District, New Hampshire

Karen Graham

University of New Hampshire, Durham

Roxanne Monmaney

New Franklin School, Portsmouth, New Hampshire

**Marriott Ballroom 3/4 (Marriott Downtown)**

**454**



### **Response to Intervention (RtI) in Mathematics**

*(PreK–5) Session*

The speaker will describe the evidence base on RtI in mathematics and suggest strategies for successful implementation that are based on content

from an IES practice guide. He will stress the pivotal role mathematics teachers can and should play in RtI and argue that differences in terminology and philosophy should not impede serious collaboration to meet the needs of struggling students.

Gersten is the director of Instructional Research Group and a professor emeritus at the University of Oregon's College of Education. He has conducted meta-analyses and research syntheses on instructional approaches for teaching students with mathematics difficulties, early screening and Response to Intervention in mathematics, and research on number sense.

Russell Gersten

Instructional Research Group, Los Alamitos, California

**Hall F (Convention Center)**

**455**

### **Using Children's Literature to Teach Mathematics: Learning from Teacher Research**

*(PreK–5) Session*

This presentation will summarize the findings and give examples from the action research of ten classroom teachers who are learning to maximize the potential of children's literature in their instruction. Guidelines and benefits will emerge that should help others who want to use children's literature more effectively in teaching mathematics.

Eula Ewing Monroe

Brigham Young University, Provo, Utah

Damon L. Bahr

Brigham Young University, Provo, Utah

Nancy Wentworth

Brigham Young University, Provo, Utah

**Sagamore Ballroom 6 (Convention Center)**

**456**

### **Capturing Students' Thinking through Diagnostic Interviews**

*(3–5) Session*

Diagnostic interviews are an informal assessment process for accessing in-depth information about student's knowledge and mental strategies. This presentation will share interviews and students' corresponding work samples across a variety of mathematics content strands. Each example will share students' evidence of thinking through verbalized ideas, making models, or creating drawings.

Karen Karp

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

Jennifer M. Bay-Williams

University of Louisville, Kentucky

**Grand Ballroom V (JW Marriott)**

**457**

### **She Wanted the Bigger Half**

*(3–5) Session*

Fractions continue to challenge students who lack a conceptual understanding of fractional concepts. This session will engage participants in six games designed to help students develop a deep conceptual understanding of fractions.

Sue Brown

University of Houston—Clear Lake, Texas

**Marriott Ballroom 9/10 (Marriott Downtown)**

FRIDAY



12:30 P.M.–1:30 P.M.

**458**

### **Modeling Fraction Operations with Paper Strips**

(3–8) Session

Use one-inch paper strips to model fractions addition, subtraction, multiplication, and division as well as verifying equivalent fractions. Use a fraction table to measure the length of strips. The speaker will give instructions on how to create custom fraction tables. This model allows for a hands-on, visual representation of fraction computations and is an alternative to using a circle model.

Ryan A. Nivens  
East Tennessee State University, Johnson City

**128 (Convention Center)**

**459**

### **Need Math Help? There May Be an App for That!**

(3–8) Session

Thousands of “educational” math apps for the iPodTouch are available on the App store. How do you find the ones that work? The speakers will share an evidence-based rubric for evaluating apps and review a collection of free and low-cost math apps for learning. Finally, they will describe effective techniques for integrating apps into your classroom practice.

Tim Pelton  
University of Victoria, British Columbia, Canada

Leslee Francis Pelton  
University of Victoria, British Columbia, Canada

**Wabash Ballroom 3 (Convention Center)**

**460**

### **Using Hands-On Equations® and Gestures to Teach Basic Algebra**

(3–8) Session

**Benjamin Banneker Association Presentation**

The speakers will illustrate how primary algebraic concepts, including the distributive property and the subtraction property of equality, can be modeled using gestures and Hands-On Equations, so that even your weakest students can successfully understand and solve linear equations with unknowns on both sides.

Joyce Hardaway  
Borenson and Associates, Inc., Allentown, Pennsylvania

Kathryn Dillard  
Borenson and Associates, Inc., Allentown, Pennsylvania

**Sagamore Ballroom 2 (Convention Center)**

**461**

### **Geometry and the Real World: Budget Math Trips**

(6–8) Session

Take a field trip at school and engage students in exciting, significant math activities as they develop the skills necessary to see the world with mathematical eyes. Highlighted investigations include teaching students trigonometry by measuring trees, embarking on a tessellation scavenger hunt, and weighing a car using a piece of paper.

Ryan Higgins  
Community Montessori Charter Public School, New Albany, Indiana

Amy English-Hunter  
Gheens Professional Development Academy, Louisville, Kentucky

Sarah Bush  
Highland Hills Middle School, Georgetown, Indiana

**109/110 (Convention Center)**

**462**

### **Improving Problem-Solving Skills: The Travel Game**

(6–8) Session

This presentation will give examples of how to implement problem-solving stations in your classroom to help with differentiation and improve problem-solving skills and critical thinking. Teachers will learn about an all-class project—the travel game—that incorporates several NCTM standards. The speaker will include specific, hands-on materials and assessments.

Jennifer C. Brown  
Hewitt School, New York, New York

**207 (Convention Center)**

**463**

### **Problems, Patterns, Pascal’s Triangle, and Mathematical Power**

(6–8) Session

Problems encourage the study of mathematics. Pascal’s triangle is an important pattern in the solution of many problems. What are the connections? This session will explore those connections algebraically and geometrically. Participants will fold paper, construct fractals, and make connections to problems, Pascal, and mathematical power.

Joseph R. Georgeson  
University School of Milwaukee, Wisconsin

**120 (Convention Center)**

12:30 P.M.–1:30 P.M.

**464**

### **Rational Numbers on the Cartesian Coordinate Plane**

(6–8) Session

Participants will use a graphical representation to find least common multiples, find the sum or difference between two ratios, convert the ratio to a decimal or percent, and multiply or divide ratios. Visual learners will flourish with this representation, and all learners will develop an understanding that slope is a ratio.

Anne M. Collins  
Board of Directors, National Council of Teachers of Mathematics; Lesley University, Cambridge, Massachusetts

**Sagamore Ballroom 4 (Convention Center)**

**465**

### **The Habits-of-Mind Approach to Eighth-Grade Algebra**

(6–8) Session

This session will illustrate how to support eighth-grade teachers and students, furthering mathematical understanding through habits of mind and general-purpose tools such as expansion boxes. Specific examples are taken from the CME Project Algebra 1, currently used in more than 90 eighth-grade classrooms in Chicago Public Schools.

Mary Wedow  
Education Development Center, Inc., Newton, Massachusetts

Matthew McLeod  
Chicago Public Schools, Illinois

**140 (Convention Center)**

**466**

### **The Peak in the Middle: Developing Mathematically Gifted Students**

(6–8) Session

Gifted students need much more than acceleration. Join us for a look at NCTM's, NAGC's, and NMSA's copublished book, *The Peak in the Middle*, and explore activities from a full spectrum of challenging, articulated curricular and extracurricular mathematics designed to develop middle grades students' MP<sup>3</sup>: mathematical power, passion, and perseverance.

Linda Jensen Sheffield  
Emerita, Northern Kentucky University, Highland Heights

**Grand Ballroom X (JW Marriott)**

**467**

### **Turning the Lens: Complementary Perspectives from a Professional Development Workshop**

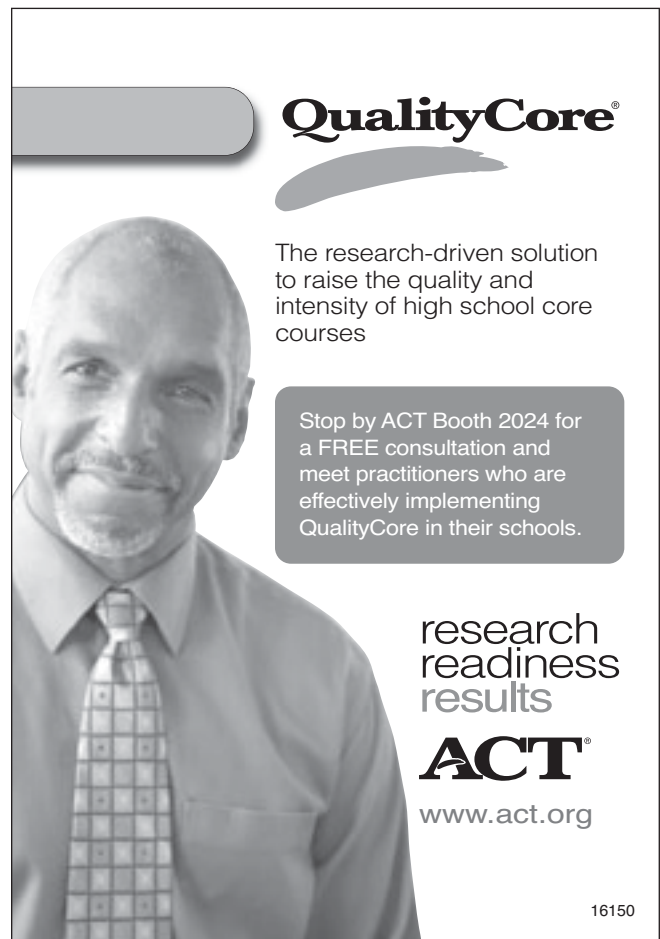
(6–8, Preservice and In-Service) Session

The speakers will examine tasks used in a middle grades workshop focused on arithmetic with fractions and decimals. The facilitator and a teacher from the workshop will share work on these tasks as well as their perspectives on the workshop's goals and outcomes. As a group, they will consider ways to make the most out of a professional development experience.

Rachael Eriksen Brown  
Knowles Science Teaching Foundation, Moorestown, New Jersey

Marion Arlene Chapman  
Hephzibah Middle School, Georgia

**Grand Ballroom III (JW Marriott)**



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FRIDAY

12:30 P.M.–1:30 P.M.

**468**

### **Learning Mathematics with Classroom Robotics**

(6–12) Session

Discover how classroom robotics can motivate students to develop and apply mathematical knowledge as they program robots. Example activities integrate ideas from algebra, geometry, measurement, computer science, and more.

Rick Anderson  
Eastern Illinois University, Charleston

**Grand Ballroom I (JW Marriott)**

**469**

### **Research, Algebra, and Technology: Changing Practice to Enable Learning**

(6–12) Session

Research about teaching and learning algebra offers suggestions that we have not incorporated into how we design curriculum and help teachers think about algebra instruction. New tools and ways of thinking based on this research could make a difference in what students learn.

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

**500 Ballroom (Convention Center)**

**470**

### **Using Your Graphing Calculator to Explore Translations, Rotations, and Reflections**

(6–12) Session

The “list” and “stat plot” features on the TI-84 are used to graph objects. By experimenting with changes in the  $x$  and  $y$  values, participants will discover and develop rules to create translations, reflections, and rotations.

Fred Decovsky  
Teachers Teaching with Technology, Millburn, New Jersey

**Marriott Ballroom 6 (Marriott Downtown)**

**471**

### **Why Motivation Matters: Research-Based Strategies for Improving Students' Engagement**

(6–12) Session

Learn how to motivate your students! This presentation will focus on what teachers can do to increase students' liking for, and engagement in, mathematics. Motivational strategies and classroom management tips will be tailored to new teachers and teachers who are struggling with helping students develop persistence in challenging content.

James A. Middleton  
Arizona State University, Tempe

**107/108 (Convention Center)**

**472**

### **Bringing Mathematics to Life through Dance**

(9–12) Session

A group of precalculus students at the Toledo School for the Arts have connected mathematics and dance. A video production will share students' insights and their performance of a mathematics puzzle published in *Mathematics Teacher* in 2006.

Tod Shockey  
University of Toledo, Ohio

Sandra Baldwin  
Toledo School for the Arts, Ohio

**Grand Ballroom VI (JW Marriott)**

**473**

### **Reasoning and Sense Making in Algebra: It's about Good Problems!**

(9–12) Session

This presentation's goal is to develop reasoning and sense making in the context of important content. The speakers will examine rich problems that connect to common algebra lessons (slope, solutions to equations, functions transformation) and show classroom videos and students' work.

Laurie A. Boswell  
The Riverside School, Lyndonville, Vermont

Paul Kelley  
Anoka High School, Minnesota

**141/142 (Convention Center)**

12:30 P.M.–1:30 P.M.

**474**

**Sliding through Trig and Precalculus: Animations to See Patterns**

(9–12) Session

Dynamic computer animations help students visualize concepts, patterns, and change in mathematics. The speaker will compare several software programs, show examples, and discuss possibilities for using animations effectively in the classroom with students.

Ruth Dover

Illinois Mathematics and Science Academy, Aurora

**White River Ballroom G/H (JW Marriott)**

**475**

**Ten Investment and Finance Problems**

(9–12) Session

This session will present ten areas of investment and finance that every high school student should understand and explore. The problems emphasize the importance of monthly savings, the power of interest rates, the depreciation of a car, the risk of adjustable rates, the relationship between risk and return, and the volatility of the stock market.

Paul Young

Colorado Springs School, Colorado

**111/112 (Convention Center)**

**476**

**Strengthening Mathematical Knowledge through Video Creation**

(Preservice and In-Service) Session

Come hear the perspectives of an instructor and her students as they describe creating and making available online videos, in which students articulate mathematical concepts for their peers with words, pictures, and symbols. The speakers will share example videos and critique the assessment rubric.

Virginia L. Keen

University of Dayton, Ohio

Jennifer L. Bucher

University of Dayton, Ohio

Katie Ertle

University of Dayton, Ohio

**White River Ballroom C/D (JW Marriott)**

1:00 P.M.–2:00 P.M.

**EW 476.1**

**Make Sense of Numbers Using Mathematical Models from Math in Context®**

(General Interest) Exhibitor Workshop

Experience realistic mathematics education and problem solving while exploring multiple number models. These models will move students to a deeper understanding of number and operations. Each participant will receive free *Number Tools* workbook.

Britannica Mathematics

Chicago, Illinois

**208 (Convention Center)**

**EW 476.2**

**Secrets of High-Quality, Interactive Whiteboard (IWB) Content**

(General Interest) Exhibitor Workshop

Come learn about key features and strategies for developing high quality IWB content that students will love, and more importantly, from which they will learn. The speaker will discuss a science of pedagogy, and you will be able to participate in activities and lessons that illustrate strong instructional principles.

DYMO/Mimio

Cambridge, Massachusetts

**116 (Convention Center)**

**EW 476.3**

**EnVision Math Common Core: Problem Solving and the Mathematical Practices**

(K–6) Exhibitor Workshop

Are you ready to meet the needs of learners in the Common Core classroom? Participants will learn strategies to engage a range of learners and develop the mathematical practices outlined in the Common Core State Standards through problem-based, interactive learning and pictorial representations for solving problems.

Pearson

Upper Saddle River, New Jersey

**117 (Convention Center)**

FRIDAY



# 1:1

The student-teacher ratio you get with  
**i-Ready Diagnostic & Instruction.**

 **i-Ready**  
Diagnostic & Instruction

Come see for yourself  
at **Booth 1435.**



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1:00 P.M.–2:00 P.M.

**ew 476.4**

**Redesigned, Rechargeable,  
Revolutionary: Experience the Latest  
TI-Nspire™ Technology**

**(7–12) Exhibitor Workshop**

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Texas Instruments (TI)  
Dallas, Texas

**209 (Convention Center)**

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1:00 P.M.–2:30 P.M.

**477**

**Building Math Skills through  
Interactive Calendar Activities in  
Grades K–2**

**(PreK–2) Gallery Workshop**

Learn how brief, daily, calendar-based activities build students' math skills. You will learn about activities to preview and review important skills throughout the year. The activities use visual models and integrate problem solving with skill building, many featuring engaging patterns on a calendar grid. Participants can access all activities online.

Dennis E. Adams  
The Math Learning Center, Salem, Oregon

**103/104 (JW Marriott)**

**478**

**Elementary Math-Zoo-Matics**

**(PreK–2) Gallery Workshop**

Come explore mathematics as used with animals in the zoo. The speakers will explore counting, estimation, measurement, and patterns. Participants will leave with ideas designed to help students make connections among mathematics, science, and the animals they love.

Pam Price  
Dickerson Park Zoo, Springfield, Missouri

Terri Doman  
Webb City School District, Missouri

**Grand Ballroom VII (JW Marriott)**

**479**

**Food for Thought: Using Food to  
Teach Math**

**(PreK–2) Gallery Workshop**

M&M's, marshmallows, pancakes, and popcorn ... is your mouth watering yet? These inexpensive items will grab your students' attention and double as math manipulatives. This food-based workshop will not only fill your belly but also give you a CD of ideas that can be replicated and modified to use in your classroom or at your next Family Fun Night.

Andrea Mitchell  
New York City Department of Education, Queens Village,  
New York

Wilhelmine Herard-James  
New York City Department of Education, Queens Village,  
New York

Janine Schleicher  
New York City Department of Education, Queens Village,  
New York

**Sagamore Ballroom 1 (Convention Center)**

**480**

**What's the Value of @#\*?**

**(PreK–2, Preservice and In-Service)  
Gallery Workshop**

Participants will learn about children's difficulties with base-ten representations when the speakers introduce them to an invented number system, Orpda. Engagement in counting, grouping, and patterning activities will give participants experiences that parallel elementary school students' struggles with base ten.

Jo Ann Cady  
University of Tennessee, Knoxville

Theresa Hopkins  
University of Tennessee, Knoxville

Jamie Price  
East Tennessee State University, Johnson City

**105/106 (Convention Center)**

FRIDAY

1:00 P.M.–2:30 P.M.

**481**

**Building Number Sense, One-Digit to Decimals in a Base-Ten World**

*(PreK–5) Gallery Workshop*

Students won't understand decimals if they don't truly understand place value. From ten-frames and rekenreks to other bases and changing the whole, come explore strategies and learn hands-on activities to help primary or upper elementary school students with gaps in their knowledge build a robust understanding of place value.

Gina S. Kilday  
Exeter-West Greenwich School District, Exeter, Rhode Island

**205/206 (Convention Center)**

**482**

**Camping In: Math Style**

*(PreK–5) Gallery Workshop*

Are you hiking through the world of mathematics looking for great ideas? Hike to math "trail posts" (stations), solve problems in your camp journal, and earn camp badges. Fill your backpack with great ideas! Learn how to implement and replicate a Math Camp In for your school or classroom. Handouts (and s'mores) will be available.

Kelli Shrewsberry  
Teaching & Learning Collaborative, Columbus, Ohio

Phyllis Bates  
South Western City Schools, Grove City, Ohio

Jessica Cahill  
South Western City Schools, Grove City, Ohio

**144/145 (Convention Center)**

**483**

**Grab Your Students by Their Brains**

*(PreK–5) Gallery Workshop*

Energize your students by engaging them in fun, exciting geometry and measurement activities that help them become better math learners, a skill they will take to future math classes and challenges. The activities will be ready to use on Monday.

Mary Alice Hatchett  
Texas Council of Teachers of Mathematics, Austin

**Grand Ballroom IX (JW Marriott)**

**484**

**Parents and Children: Playing Math Games Together**

*(PreK–5) Gallery Workshop*

Are you looking for ways to partner with parents in the educational process? Do you want to engage parents in meaningful, fun activities that will strengthen math skills? Explore exciting games that encourage counting, estimation, facts, and logical thinking to be played any time and any place, even in the busiest of lives!

Martha E. Hildebrandt  
Chatham University, Pittsburgh, Pennsylvania

Barbara Biglan  
Chatham University, Pittsburgh, Pennsylvania

**Grand Ballroom IV (JW Marriott)**

**485**

**Blocks and Paper: Minimum Materials, Maximum Mathematics**

*(3–5) Gallery Workshop*

Construct understanding and connect students' knowledge of angles, fractions, algebra, and more with just blocks and paper. Transform your perspective of these simple items as you engage in mathematically rich, problem-based tasks and discussion. Leave with activities for immediate use in the classroom that develop students' math competence and understanding!

Anna M. LaForgia  
Council Rock School District, Newtown, Pennsylvania

Mary Doherty  
Council Rock School District, Newtown, Pennsylvania

**White River Ballroom A/B (JW Marriott)**

FRIDAY

1:00 P.M.–2:30 P.M.

**487**

### **Geometry Origami: Using Rich Vocabulary for Paper-Folding Tasks**

(3–5) Gallery Workshop

Looking for a good way to help your students construct geometric knowledge? Try origami! In this unit, students follow verbal clues for paper folding *before* looking at pictures. Come hear about this exciting unit that really got students to “speak math.” Participants will receive a CD with Smart Notebook files for immediate classroom implementation.

Rebecca Borowski  
Ponderosa Elementary School, Fayetteville, North Carolina

Kamela Dautain  
W. T. Brown Elementary School, Spring Lake, North Carolina

**Marriott Ballroom 7/8 (Marriott Downtown)**

**NCTM** **488**

### **Let’s Measure Up!**

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

Improve students’ engagement to motivate them to learn mathematics. This presentation will demonstrate how to improve students’ conceptions of measurement and link them to number and algebra. Classroom-ready tasks will be used.

Barbara J. Dougherty  
Board of Directors, National Council of Teachers of Mathematics; Iowa State University, Ames

Hannah Slovin  
University of Hawaii, Honolulu

**101/102 (Convention Center)**

**489**

### **Math Success for All: Effective Coteaching with Inclusion**

(6–8) Gallery Workshop

A middle school in Oklahoma City implemented inclusion for all core math classes, using a coteaching model. Hear the journey’s story including lessons learned and pitfalls avoided while successfully reaching all their students. The speakers will share sample math lessons developed to provide a variety of access points for all learners.

Heather Sparks  
Oklahoma City Public Schools, Oklahoma

Alex Countryman  
Oklahoma City Public Schools, Oklahoma

David Woodside  
Oklahoma City Public Schools, Oklahoma

**Grand Ballroom II (JW Marriott)**

**490**

### **Oh, What a View: The Mathematics in Astronaut Photography!**

(6–8) Gallery Workshop

Give your students an “out of this world” experience with NASA’s new, exciting Expedition Earth and Beyond education program and NCTM’s Student Explorations in Mathematics, “Oh, What a View.” Launch classroom mathematical connections to astronaut photography with free resources, ideas, investigations, and handouts.

Marshalyn E. Baker  
Messalonskee Middle School, Oakland, Maine

Michele R. Mailhot  
State of Maine Department of Education, Augusta

Paige V. Graff  
National Air and Space Administration, Houston, Texas

**Marriott Ballroom 5 (Marriott Downtown)**

**491**

### **Thinking Proportionally with Origami Cubes**

(6–8) Gallery Workshop

An essential component of a middle school student’s algebra readiness is the ability to think and reason proportionally. Participants will construct origami cubes of various sizes, explore the proportional relationships among the models, complete activities, and discuss rubrics based on these models.

Diane Devine  
Consultant, Peabody, Massachusetts

**203/204 (Convention Center)**

FRIDAY



1:00 P.M.–2:30 P.M.

**492**

**Inspiring Middle School Students to Be Geometry Problem Solvers**

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

Experience each of the components of quality mathematics problem-solving lessons. Participate in solving geometry tasks intended to reach a diversity of students' abilities. We will focus on questioning, scaffolding students' sharing, and extending topics for depth. Take away a CD with problem-solving lessons that link to our virtual manipulatives.

Winnie Miller  
Teacher to Teacher Publications, Portland, Oregon

Cathy Brown  
Teachers Inspiring Problem Solvers, Redmond, Oregon

**White River Ballroom I/J (JW Marriott)**

**493**

**Thirteen Formulas or One Idea? Area, Volume, Dissections, and Proof**

(6–12) Gallery Workshop

Unify all familiar area and volume formulas, both two- and three-dimensional, as one versatile idea: scale factor  $\times$  base  $\times$  height. Engage in interactive whiteboard and hands-on activities that make this idea intuitive to students. See how these compelling activities can also deceive the eye and mind, facilitating proof through ideas that are accessible in middle school.

Cindy Carter  
Rashi School, Dedham, Massachusetts

Keith Civin  
Rashi School, Dedham, Massachusetts

**Sagamore Ballroom 3 (Convention Center)**

**494**

**Functions: Making The Connections in Algebra 2**

(9–12) Gallery Workshop

Functions are a core topic in any Algebra 2 course. Participants will engage in several activities focused on functions including using a human graph to explore functions, domain and range, and asymptotes. We will extend our knowledge of functions through the exploration of parent graphs, a silent board game, and a function treasure hunt.

Melissa L. Thomley  
College Preparatory Mathematics Educational Program,  
Sacramento, California

**Marriott Ballroom 1/2 (Marriott Downtown)**

**495**

**Papierfalten, Papiroflexia, or Origami: Folding Your Way through School Mathematics**

(9–12) Gallery Workshop

Participants will fold animals, flowers, and other nonstandard models to guide them as they tour the entire school mathematics curriculum. Symmetry, data collection, measurement, algebra, and geometry are some of the deep grades K–12 mathematics they will investigate along the way. Expect folding instructions, lesson plans, and a new view of origami.

Alan Russell  
Elon University, North Carolina

Amanda Ketner  
Elon University, North Carolina

Jan Mays  
Elon University, North Carolina

**Sagamore Ballroom 7 (Convention Center)**

**496**

**Precalculus Projects: Challenge Your Students, and Stand Back!**

(9–12) Gallery Workshop

Do your students remember just long enough to get answers down on a test? Try engaging students in relevant activities for sustained learning. This presentation will showcase project-based learning suitable for precalculus, yet adaptable for algebra or calculus. Participants will receive project manuals and CDs that connect math to other subjects.

Luajuan N. Bryan  
Walker Valley High School, Cleveland, Tennessee

**124 (Convention Center)**

**497**

**Does a Tetrahedron Have an Euler Line?**

(9–12, Higher Education) Gallery Workshop

Expect to perform activities exploring the points of concurrency in a triangle, and then extend these ideas to its three-dimensional analog, the tetrahedron. Interactive geometry software will model the points of concurrency in two and three dimensions and help students visualize the underpinnings of calculus.

Troy Jones  
Westlake High School, Saratoga Springs, Utah

Steve Phelps  
Madeira City Schools, Cincinnati, Ohio

**Sagamore Ballroom 5 (Convention Center)**

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1:00 P.M.–2:30 P.M.

## 497.1

### **Are These the Right Standards for Preparing Future Mathematics Teachers?**

(9–12, Higher Education)

NCTM is currently revising the standards for mathematics teacher education programs. These standards will be used as part of the NCATE program review process, as well as other in venues. Come hear about the draft standards and help shape the final revisions through your feedback.

NCATE Standards Task Force  
National Council of Teachers of Mathematics, Reston,  
Virginia

**Wabash Ballroom 2 (Convention Center)**

## 498

### **Quantitative Literacy: The Math-and-Science Inside Resistors**

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

Come learn about the science and mathematics of electronic resistors through a hands-on activity. See quantitative literacy in action as you acquire and graph data to make predictions, examine alternative assessment techniques and differentiating instruction, and receive classroom-ready materials.

Teri Willard  
Central Washington University, Ellensburg

**White River Ballroom E (JW Marriott)**

## 499

### **Transform Your Geometry Classroom by Using Transformational Geometry and Technology**

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

Many geometry classrooms cover transformational geometry, but few *use* it as an integral part of their curriculum. This hands-on workshop will teach participants how to *do* transformational geometry on the TI-Nspire calculator and how to incorporate this important, NCTM-recommended approach to learning into their present curriculum.

Raymond J. Klein  
Northern Illinois University, DeKalb

**126/127 (Convention Center)**

## 500

### **Are All Math Tasks Created Equally?**

(Preservice and In-Service)  
Gallery Workshop

Come explore the topic of cognitive demand and how it affects classroom instruction at all grade levels. Learn the research behind cognitive demand as well as analyze mathematical tasks in order to identify its level in each task. This presentation will leave you thinking about your instruction and the tasks you give to students.

Lee Ann Pruske  
Milwaukee Public Schools, Wisconsin

Paige Richards  
South Milwaukee School District, Wisconsin

**121/122 (Convention Center)**

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2:00 P.M.–3:00 P.M.

## 501

### **Addressing Equity in Mathematics Education: The Need for Aggressive Action**

(General Interest) Session

This talk will analyze in depth the continued underperformance of certain groups of students. The speaker will then guide participants through the process of gaining a more thorough understanding of this phenomenon, so that they come to see more clearly the possibilities for significant, sustainable, positive change in these students' achievement.

Charles H. Roberts  
Mercer University, Macon, Georgia

**111/112 (Convention Center)**

FRIDAY

2:00 P.M.–3:00 P.M.

**502**

### **Building Connections through Lesson Study**

**(General Interest) Session**

Learn how lesson study has met the needs of math teachers of grades K–12, representing diverse districts throughout northwestern Wisconsin. This unique professional development model focuses on students' mathematical thinking, combining face-to-face meetings, active online communication, and time during the school year for conducting public lessons.

Michelle Parks

Cooperative Educational Services Agency #10, Chippewa Falls, Wisconsin

Christopher Hlas

University of Wisconsin—Eau Claire

Kate Masarik

University of Wisconsin—Eau Claire

**Grand Ballroom I (JW Marriott)**

**503**

### **Grace under Fire: Narratives from Women Succeeding in STEM Field**

**(General Interest) Session**

**Women and Mathematics Education Presentation**

Based on the real-life narratives of women of diverse ethnic and racial backgrounds who have learned to flourish in the science, technology, engineering, and mathematics (STEM) fields, this presentation will describe authentic pathways for helping girls of diverse ethnic and racial backgrounds choose and then succeed in STEM fields.

Jill M. Drake

University of West Georgia, Carrollton

Ursula Thomas

University of West Georgia, Carrollton

**Sagamore Ballroom 2 (Convention Center)**

**504**



### **NCTM Business Meeting**

**(General Interest) Session**

This session will give a summary of the past year's significant accomplishments and an overview of NCTM's current and future strategic directions.

Kichoon Yang

Executive Director, National Council of Teachers of Mathematics, Reston, Virginia

**120 (Convention Center)**

**505**

### **The Common Core: Where Do We Go from Here?**

**(General Interest) Session**

The grades K–12 Common Core State Standards for Mathematics (CCSSM) have now been adopted in more than forty states and territories. This session will present two perspectives that states, supervisors, teacher leaders, teachers, and policymakers should consider in the interpretation, implementation, and assessment phases of the CCSSM.

William McCallum

University of Arizona, Tucson

Zalman Usiskin

University of Chicago, Illinois

**500 Ballroom (Convention Center)**

**506**

### **School-Based Lesson Study: Building Teachers' Collaboration on Instruction**

**(General Interest) Session**

The speakers will tell the story of how lesson study has helped teachers at one Chicago school focus their discussions on mathematics teaching and learning. Their lesson-study community has grown from affecting a handful of teachers to reaching the entire school community.

Lorianne Zaimi

Chicago Public Schools, Illinois

Erendira Alcantara

Chicago Public Schools, Illinois

**Marriott Ballroom 6 (Marriott Downtown)**

2:00 P.M.–3:00 P.M.

**507**

### Discovering the Magic of Math through Literacy

(PreK–2) Session

Are you an early childhood educator struggling to fit meaningful math instruction into your day? It may not be quite as hard as it seems. Come learn how to teach math by integrating it with quality children's literature, physical education, music, and art. Help your students love math and make sense of it in the world around them!

Caytlin Sampson

Me + Math = Magic, Cedar Hills, Utah

Annette Payne

Me + Math = Magic, Cedar Hills, Utah

**White River Ballroom F (JW Marriott)**

**508**



### You Can't Teach a Class You Can't Manage

(PreK–2) Session

Gain motivating strategies that help learners increase self-control. Discover how to teach students in ways they learn best, and create a classroom that supports learning without a focus on

management issues. Share the four cornerstones of discipline, and turn a disruptive environment into a classroom of success!

Whyte is an education consultant and former teacher with experience in inclusion, multiage, and looping classrooms. She continues to work with teachers and children in classrooms across the United States, specializing in early education. Her strategies and activities are easy to transfer into classroom practice. She has published several books and presented to national and international audiences.

Donna Whyte

TheSmartieZone, Ballston Spa, New York

**Grand Ballroom V (JW Marriott)**

**509**

### Number-Fact Fluency for Grades 1–4

(PreK–5) Session

Your students still don't know their basic facts, and you test them every week! But what are you doing between timed tests? Join the speaker to see how you can use word problems, games, hundreds charts, puzzles, number lines, graph paper, electronic games, mental math, and flash cards during the year to help students increase their number-fact fluency. Handouts and materials will be provided.

Jeannie Gee

Des Moines Public Schools, Iowa

**125 (Convention Center)**

**510**

### Singapore Math: An Implementation Case Study

(PreK–5) Session

What happened when an American grades pre-K–6 school adopted Singapore's math program? Based on three years of research, the presenter's story will give you a unique view into the process and outcomes for teachers and students. Leave with a realistic picture of this powerful program in action.

Kevin T. Mahoney

Tenacre Country Day School, Wellesley, Massachusetts

**Grand Ballroom VIII (JW Marriott)**

**511**

### Using Contextual Anchors to Promote Equity and Mathematical Thinking

(PreK–5) Session

**Benjamin Banneker Association Presentation**

Looking for a powerful approach to reach kids? This presentation will highlight teaching math using student-driven contextual anchors. *All* students bring valuable math capital to the classroom. Concrete examples of using students' backgrounds, families, communities, lived, and out-of-school experiences to anchor mathematical thinking will be provided.

Shonda Lemons-Smith

Georgia State University, Atlanta

**207 (Convention Center)**

FRIDAY



2:00 P.M.–3:00 P.M.

**512**

### **Context versus Keyword Approach to Problem Solving**

(3–5) Session

Solving problems using a keyword approach skips the step of understanding and jumps directly to selecting a solution strategy or algorithm. Good problem solvers look beneath the surface information at the underlying problem model. This presentation will focus on how to help students understand word problems before solving them.

Ann H. Wallace  
James Madison University, Harrisonburg, Virginia

**White River Ballroom G/H (JW Marriott)**

**513**

### **Teach Algebra in Elementary School? Seriously?**

(3–5) Session

Algebraic reasoning needs to be fostered early, but how do you do that? You know that resources must be out there to help, but you're too busy to go find them! Come learn about various online resources from Illuminations, the Library of Virtual Manipulatives, and ExploreLearning to help your elementary school students learn to reason algebraically.

Jennifer Wall  
Northwest Missouri State University, Maryville

Christine Benson  
Northwest Missouri State University, Maryville

**Marriott Ballroom 3/4 (Marriott Downtown)**

**514**

### **Formative Assessment for Differentiated Instruction on Multiplication, Division, and Fractions**

(3–8) Session

Learn research-based strategies relating to formative assessment and relating differentiated instruction to NCTM's Curriculum Focal Points and the Common Core Standards. The speakers will present lessons, appropriate for special-needs and English language learner students, that use manipulatives, games, and vocabulary to integrate basic skills and problem solving.

Amy Johnson  
Math Teachers Press, Inc., Minneapolis, Minnesota

Caryl K. Pierson  
Math Teachers Press, Inc., Minneapolis, Minnesota

**Sagamore Ballroom 4 (Convention Center)**

**515**

### **Singin' and Signin' Teaches Complex Concepts through Songs and Signs**

(3–8) Session

This fun, interactive session will show how to teach complicated math concepts using songs, signs, and gestures. Create your own Flip and Fold! Learn proven strategies that ensure students' 100 percent engagement! See why these two teachers won the 2009 Classroom of the Future Innovations in Education Award for their ability to inspire, innovate, and achieve.

Siegrid I. Stillman  
Fallbrook Union Elementary School District, California

Steven Stillman  
Fallbrook Union Elementary School District, California

**109/110 (Convention Center)**

**516**

### **Beyond Accommodations: Common Sense Differentiation and Universal Design for Learning**

(6–8) Session

Come learn how to provide effective mathematics instruction for all students in inclusive settings using universal designs for learning and differentiation. The speaker will demonstrate learning supports, technology integration, and differentiation through example tasks involving area and volume. She will also share practical tools and resources.

Jessica Hunt  
University of Central Florida, Orlando

**Grand Ballroom VI (JW Marriott)**



**517**

### **Connecting Mathematics Teaching in the Middle School to Your Classroom**

(6–8) Session

NCTM's *Mathematics Teaching in the Middle School* journal provides opportunities for educators to reach students of all abilities with various resources. The presenters will share ideas of how best to connect the journal to the classroom to challenge all students while building conceptual knowledge.

*Mathematics Teaching in the Middle School* Editorial Panel

National Council of Teachers of Mathematics, Reston, Virginia

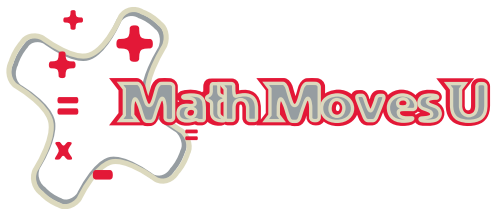
**Wabash Ballroom 1 (Convention Center)**

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2:00 P.M.–3:00 P.M.

**518**

### **Growing Patterns: Are We Asking the Right Questions?**

(6–8) Session

Participants will work several growing-pattern problems in small, collaborative groups. They will focus on the kinds of questions to ask students to uncover a range of rich mathematics concepts contained in such problems.

Linda B. Crawford  
Augusta State University, Georgia

**128 (Convention Center)**

**519**

### **It's Not Just Math Class! Integrating Math across the Curriculum**

(6–8) Session

It is every mathematics teacher's responsibility to help students recognize and apply mathematics in contexts outside mathematics. Connecting mathematics to other subjects is an exciting way to capture students' interest. This presentation will look at examples of how to accomplish that connection.

Mark C. Evans  
Saint Callistus School, Garden Grove, California

**143 (Convention Center)**

**520**

### **Strategies to Engage ELLs in Writing to Learn Geometry**

(6–8) Session

**TODOS: Mathematics for ALL Presentation**

This presentation demonstrates writing strategies that teachers can use to help English Language Learners (ELLs) write about geometry. Participants will learn a three-phase writing cycle that focuses on teachers' deconstruction, teacher and student construction, and students' independent construction based on geometry problems.

Luciana de Oliveira  
Purdue University, West Lafayette, Indiana

**103/104 (Convention Center)**

**521**

### **Transformers**

(6–8) Session

Practitioners will participate in hands-on transformational geometry activities—flips, slides, turns, and so on—using a variety of tools including patty paper, geodot paper, grid paper, and Miras. The presenter will demonstrate various geometric transformations using Geogebra software.

Candide Walton  
Southeast Missouri State University, Cape Girardeau

Tamela Hanebrink  
Southeast Missouri State University, Cape Girardeau

**Grand Ballroom III (JW Marriott)**

**522**

### **Using Geometry as a Springboard to Mathematics**

(6–8) Session

Geometry gives entry into thinking and reasoning in mathematics. Its visual appeal taps into learning through hands-on experiences. Geometric models of mathematical situations help students examine relationships, see connections, form possible solution paths, and examine solutions' validities.

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

**Hall F (Convention Center)**

**523**

### **America's Next Top Modelers: How to Excite Students about STEM**

(6–12) Session

Do you want activities that increase students' problem solving skills, communication skills, and mathematical understanding? Modeling-eliciting activities (MEAs) are a way to integrate science, technology, engineering, and mathematics (STEM) concepts. MEAs are realistic, interdisciplinary, team-based problems. Participants will receive MEAs and ideas on how to implement them in their curriculum.

Micah S. Stohlmann  
University of Minnesota—Twin Cities, Minneapolis

Tamara Moore  
University of Minnesota—Twin Cities, Minneapolis

**123 (Convention Center)**



2:00 P.M.–3:00 P.M.

**524**

**Engage, Empower, and Transform  
Low-Performing Math Students**

(6–12) Session

How do you transform poor math scores in an at-risk high school? Explore one school's journey, which took them from poor math growth to sustained, double-digit gains in math scores and benchmark tests, more than doubling the district's growth over three years. Learn how they did it. You can do it, too!

Kymn Van Dyken  
Aspen Valley High School, Colorado Springs, Colorado

George Stone  
Academy District 20, Colorado Springs, Colorado

**Marriott Ballroom 9/10 (Marriott Downtown)**

**525**

**Making Informed Mental Math  
Decisions: Three Factors for  
Appropriate Use**

(6–12) Session

Students making informed choices between mental math, paper and pencil, and calculator or technology methods is not as easy as one might think. The speaker will look at three factors that students and citizens need to consider when choosing a calculation method. He will also address teachers' considerations and the two-part, calculator-and-no-calculator test.

James R. Olsen  
Western Illinois University, Macomb

**140 (Convention Center)**

**526**

**Stop, Look, and Listen ... to Yourself  
Teach!**

(6–12) Session

Find out how a group of teachers became informed, reflective practitioners and changed their teaching by reading the research literature and video-recording, critiquing, revising, and reteaching a lesson. Their stories will be presented through a video documentary. Many will be in the audience for questions and answers.

Cynthia W. Langrall  
Illinois State University, Normal

Josh Hertel  
Illinois State University, Normal

Elif Safak  
Illinois State University, Normal

**107/108 (Convention Center)**

**527**

**Geometry on the SAT: Linking  
Content and Process**

(9–12) Session

How does geometry on the SAT mathematics test engage students in reasoning and sense making? How does the SAT connect geometric concepts to other areas of the curriculum? How can geometry questions involve multiple representations, communication, and problem solving? Come hear the answers to these questions and more.

Robin K. O'Callaghan  
College Board, New York, New York

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

**Sagamore Ballroom 6 (Convention Center)**

**528**

**Power Parametrics: Modeling Motion  
with the TI-NSpire™**

(9–12) Session

What path does a point on a rolling circle trace? Do particles on parametric paths collide or do their paths simply intersect? Is the hit a homerun? Help your students harness the power of parametric equations. Interactive action-consequence documents for the TI-NSpire that allow students to master parametric equations will be demonstrated.

John Y. Dusenberry  
Siegel High School, Murfreesboro, Tennessee

**101/102 (JW Marriott)**

FRIDAY



2:00 P.M.–3:00 P.M.

**529**

**Promoting Higher-Level Geometric Thinking through Constructions and Writing Assignments**

(9–12) Session

Learn new ways to challenge your geometry students and improve their level of understanding. This presentation will feature classroom-tested projects and writing assignments. The speakers will discuss geometric constructions that develop cognitive thinking skills used in proof writing and problem solving.

Jennifer V. Nickell  
Lakota Local Schools, West Chester, Ohio

Kevin E. Carlin  
Lakota Local Schools, Liberty Township, Ohio

**White River Ballroom C/D (JW Marriott)**

**530**

**What I Learned (about the Math) from Teaching Math History**

(9–12) Session

More than interesting stories, teaching a History of Math class has contributed to the speaker's understanding of actual mathematical concepts. She will discuss the roles of limit in calculus and Arab mathematicians in algebra, how the number system revealed itself, and the wide variety of multicultural mathematics, among other topics.

Ruth Miller  
Roland Park Country School, Baltimore, Maryland

**141/142 (Convention Center)**

**531**

**Introduction to Mathematical Sciences—A Non-Traditional Course for Students**

(9–12, Higher Education) Session

This course is a non-traditional investigation of algebra and statistics using excel as the computational tool. A review of the course and a summary of the research results from the implementation of this class in high schools and post secondary schools will be discussed.

Glen W. Richgels  
Bemidji State University, Minnesota

Amber Severson  
Anoka-Ramsey Community College, Cambridge, Minnesota

**Wabash Ballroom 3 (Convention Center)**

**532**

**Raising Achievement through Reading and Writing Mathematics with Undergraduate Students**

(9–12, Higher Education) Research Session

Reading and writing are difficult skills to teach. Mathematics entering the arena compounds that difficulty. This presentation will explore the results of blending mathematical instruction with reading and journaling and its effect on students' mathematical learning in a developmental mathematics course. The speaker will give an overview of the various strategies that the instruction used with students.

Neil J. Hatfield  
Northwest Missouri State University, Maryville

**201/202 (Convention Center)**

**533**

**Geometric Constructions: Centered on the Euler Line**

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

The Euler line connects altitude, median, and perpendicular bisector constructions in triangles and incorporates algebraic and geometric proofs. This presentation will discuss a unit for discovering the centers of triangles using compass, Mira, and Sketchpad, as well as misconceptions, extensions, and the unit's use in preservice teaching courses.

Astrida Cirulis  
Concordia University Chicago, River Forest, Illinois

**Grand Ballroom X (JW Marriott)**

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2:30 P.M.–3:30 P.M.

**ew 533.1**

**Quality Interactive Content: What to Look For**

**(General Interest) Exhibitor Workshop**

Identifying what makes quality interactive content seems just as hard to understand as nutrition labels on food products! In a little less than one hour, we will make it easier for you to identify the brain food of interactive content and disregard the junk. All attendees will receive a “Shopping List for Quality Interactive Content” to guide them in content purchases and creation.

DYMO/Mimio  
Cambridge, Massachusetts

**116 (Convention Center)**

**ew 533.2**

**Slaying the Dragons with Notebook Foldables®**

**(General Interest) Exhibitor Workshop**

Slay math dragons, organize student work, and add dimensionality to interactive math notebooks with 3-D graphic organizers known as Foldables. Transform notebooks into individualized, brain-smart tools that will revolutionize the way you teach and the way your students learn. Leave with a composition minibook that is ready to use immediately.

Dinah-Might Adventures  
San Antonio, Texas

**208 (Convention Center)**

**ew 533.3**

**Using BuzzMath with Your Students: Immediate Feedback, Differentiation, Historical Connections**

**(6–8) Exhibitor Workshop**

Come see how Euclid can make his way into your classroom! Participate in a BuzzMath online lesson, solve a mission to return to the famous book *Elements* to Euclid, and experience how immediate feedback and multiple representations support students’ learning. You’ll also see how easily BuzzMath is used for differentiation and assessment.

BuzzMath.com  
Montreal, Quebec, Canada

**117 (Convention Center)**

**ew 533.4**

**Redesigned, Rechargeable, Revolutionary: Experience the Latest TI-Nspire™ Technology**

**(7-12) Exhibitor Workshop**

See TI’s newest learning technology: redesigned, rechargeable, & revolutionary! The most visually engaging TI technology ever allows for exploration of math concepts through multiple representations, interactive manipulation, and brilliant display – and has some new features that may surprise you. Plus, it’s permitted on many college entrance exams!

Texas Instruments  
Dallas, Texas

**209 (Convention Center)**

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3:00 P.M.–4:30 P.M.

**534**

**Number Activities You Can Count on for Young Minds**

**(PreK–2) Gallery Workshop**

Player 45 scored 10 baskets during the first game. Students see and hear numbers used in many different ways. This presentation will give you a deeper understanding of number while experiencing a variety of activities appropriate for young minds. Cardinal, ordinal, and nominal numbers can be confusing, but not after these games, songs, and stories.

Jeanine Haistings  
William Jewell College, Liberty, Missouri

**Grand Ballroom II (JW Marriott)**

**535**

**One Size Does Not Fit All!**

**(PreK–2) Gallery Workshop**

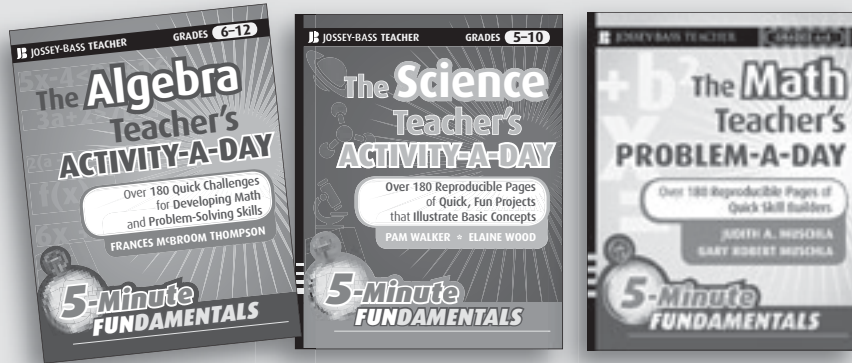
The “one size fits all” policy doesn’t work for clothing *or* for mathematics instruction. Participants will use differentiation strategies and experience hands-on, Standards-based activities that support equitable access to mathematics for all students. The activities will highlight algebraic reasoning, geometry, measurement, and more.

Latrenda Knighten  
East Baton Rouge Parish School District, Louisiana

**Marriott Ballroom 7/8 (Marriott Downtown)**

FRIDAY

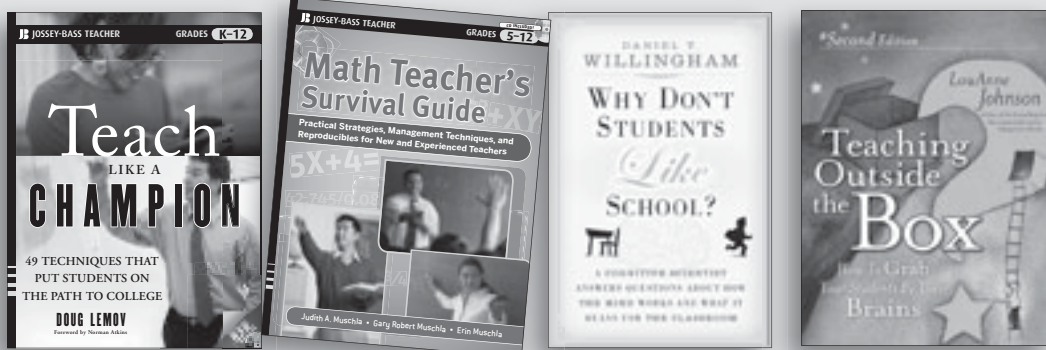
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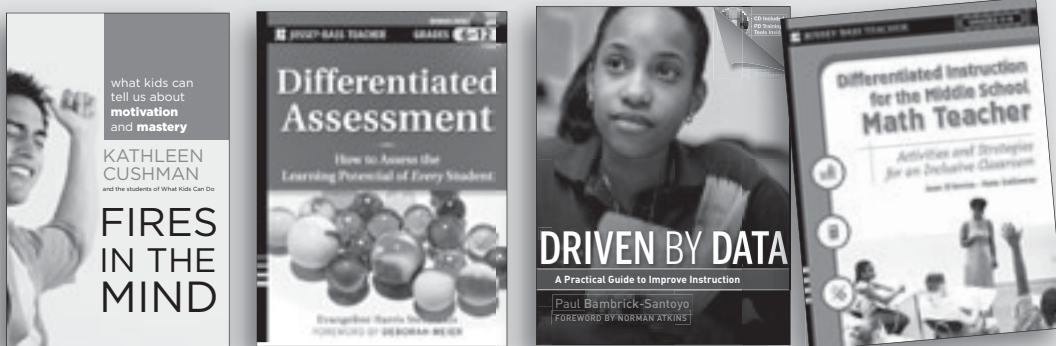


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3:00 P.M.–4:30 P.M.

**536**

**Stop! Help! I Thought You Knew Your Shapes!**

(PreK–2) Gallery Workshop

This presentation will focus on van Hiele’s levels of geometric thought. Participants will actively engage in various geometry activities that will enrich and expand students’ and teachers’ knowledge of shapes and their properties, translations, and shape visualization. Participants will also look at various error patterns that occur while teaching geometry.

Laura L. Gray  
Norfolk Public Schools, Virginia

Brenda Dorman  
Norfolk Public Schools, Virginia

**124 (Convention Center)**

**537**

**Family Math Night: Empowering Families to Engage in Math**

(PreK–5) Gallery Workshop

This interactive workshop will engage participants by demonstrating how to host an effective family math night. Learn how to set up a family math night, participate in the shared games and activities, and empower your parents to see that math can be fun, inexpensive, and easy to do at home.

Erika Simono  
Houghton Mifflin Harcourt, Austin, Texas

**White River Ballroom E (JW Marriott)**

**538**

**Shuffling into Math: Primary School Math Games**

(PreK–5) Gallery Workshop

Come prepared to play card and dice games that help your primary school students achieve success in numeration, operations, place value, and graphing. The speaker will share excellent take-home ideas, game boards, samples of students’ work, and more. These games are great for regular and English language learner students, as well as for after-school programs.

Jane Felling  
Box Cars & One-Eyed Jacks, Edmonton, Alberta, Canada

**126/127 (Convention Center)**

**538.1**

**Extending Mathematical Knowledge and Understanding through Parent-Friendly Math Bags**

(PreK–5) Gallery Workshop

The intent of these parent-friendly math bags is to rotate them from student to student on a weekly basis in order to keep families informed of current mathematics topics and include the what, why, and how of what is being taught, so parents can understand the instructional strategies.

Sarah LaCosta  
Labrador School Board, Goose Bay, Newfoundland and Labrador, Canada

Janet Wiseman  
Labrador School Board, Goose Bay, Newfoundland and Labrador, Canada

**Sagamore Ballroom 5 (Convention Center)**

**539**

**The Chinese Abacus and Number Sense**

(PreK–5) Gallery Workshop

Be introduced to fascinating Chinese mathematical symbols and systems. Through a world history of abacus development, learn how and why the Chinese used the abacus. Practice basic operations—addition, subtraction, and multiplication—on a Chinese abacus to discover its advantages and use for developing students’ number sense.

Cheryl C. Ooten  
Santa Ana College, California

**Grand Ballroom IX (JW Marriott)**

**540**

**Edible Math!**

(3–5) Gallery Workshop

Benjamin Banneker Association Presentation

What could be more fun than eating your school work? Learn and experience many ways in which food can be used to introduce, reinforce, or assess learning. From fractions to geometry to patterns and relationships, food definitely has its place in a mathematics classroom. Come join the food ... I mean, the fun!

Leslie E. Hooks  
Fort Worth Independent School District, Texas

**Sagamore Ballroom 7 (Convention Center)**

FRIDAY



3:00 P.M.–4:30 P.M.

**541**

### **It's a Tangram World**

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

Working with this unique puzzle facilitates the understanding of geometric shapes, congruent and similar figures, the size of angles, and measurement concepts. Making a set develops an understanding of fraction-decimal-percent concepts.

Peggy L. McLean  
Nueva School, Hillsborough, California

**White River Ballroom I/J (JW Marriott)**

**542**

### **Connecting Proportional Reasoning and Algebraic Thinking**

(3–8) Gallery Workshop

Seeing multiplicative relationships and reasoning proportionally is essential to students' success in algebra. Participants will use the TI-73 Explorer graphing calculator to engage in hands-on activities designed to develop proportional reasoning from a very beginning level. We will focus on the connection to algebraic thinking through lines and their slopes.

Gloria Beswick  
Partnership Institute for Mathematics and Science  
Education Reform, Louisville, Kentucky

Rhonda Niemi  
Jefferson County Public Schools, Louisville, Kentucky

**Marriott Ballroom 1/2 (Marriott Downtown)**

**543**

### **Deep Thinking and Real Fun with Vertices, Edges, and Faces**

(3–8) Gallery Workshop

Ever wonder what one does with this vocabulary other than know it? Build polyhedra from nets and see how children can have fun deepening their understanding of geometry as they discover and *prove* surprising facts about prisms and pyramids by counting vertices, edges, and faces.

Tracy Manousaridis  
Weston Public Schools, Massachusetts

Shelle Crandell  
Miriam McCarthy Elementary School, Framingham,  
Massachusetts

Samantha Lowe  
Miriam McCarthy Elementary School, Framingham,  
Massachusetts

**144/145 (Convention Center)**

**544**

### **Fraction Division Algorithms through Generalizations**

(3–8) Gallery Workshop

Engage in activities designed to help students understand and develop algorithms through problem solving, mathematical patterns, and generalizations. The speakers will specifically address an inquiry approach to conceptual and procedural understanding of fractions division.

Andrew M. Tyminski  
Clemson University, South Carolina

Jerry A. Woodward  
Purdue University, West Lafayette, Indiana

Bill Walker  
Purdue University, West Lafayette, Indiana

**121/122 (Convention Center)**

**545**

### **Making Sense of Fractions, Decimals, and Percents**

(3–8) Gallery Workshop

Have you wondered why “of” means to multiply? Or how decimal and fraction multiplication are related? Come join us as we look at lessons and visual models that enable students to develop a strong understanding of converting, adding, and multiplying the multiple representations of portion.

Josea Eggink  
Bloomington Public Schools, Minnesota

Stephanie Whitney  
Illinois Institute of Technology, Chicago

**Sagamore Ballroom 1 (Convention Center)**

3:00 P.M.–4:30 P.M.

**547**

### Teaching Geometry through Music Instrument Making and Designing

(3–8) Gallery Workshop

There are one-dimensional instruments (e.g. violin), 2-D instruments (e.g. drums) and 3-D instruments (e.g. xylophone, saxophone). Tunes are made by changing string length, membrane area, solid matter volume, or air volume in the instrument. Instrument design will introduce the length, area, and volume of various geometric figures.

Song An

Texas A&M University, College Station

Mary Margaret Capraro

Texas A&M University, College Station

Anastasia Lee

California State University, Long Beach

**203/204 (Convention Center)**

**548**

### I Hate Math, Ma'am! Yes I Do, Sam I Am!

(6–8) Gallery Workshop

“Not here, not there; I don’t like math anywhere!” Get your students to love math with six cool activities that develop geometric conceptual understanding and increase associated skill mastery.

Rachel Chaplin

Akron Public Schools, Ohio

Marcia Myers

Akron Public Schools, Ohio

Helen Rowland

Akron Public Schools, Ohio

**White River Ballroom A/B (JW Marriott)**

**549**

### Paper-Folding Magic

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

Learn geometry from paper folding? From circles to three-dimensional shapes, come be a part of learning how to introduce your students to a conceptual understanding of geometric terms through inexpensive, hands-on paper folding. The speaker will discuss relative geometric terms and make references to children’s literature.

Joy W. Black

University of West Georgia, Carrollton

**105/106 (Convention Center)**

**550**

### Improving Assessment and Inquiry with Technology: TI-NSpire™ Navigator and SMART™

(6–12) Gallery Workshop

Experience hands-on activities with the latest interactive, handheld learning tool. Hear about inquiry learning resources from NASA, Texas Instruments, and publishers who focus on improving the instruction of high school math topics. See how to use the TI-NSpire Navigator with interactive whiteboards for formative assessment or review and preparation for high-stakes tests.

Sean Bird

Covenant Christian High School, Indianapolis, Indiana

**Sagamore Ballroom 3 (Convention Center)**

**551**

### Real-World Lessons the Mathalicious Way

(6–12) Gallery Workshop

How can we use the iPad to teach proportions? How can we use hip-hop to teach algebra? This presentation will explore how to structure lessons around the real-world topics that you and your students care about, as well as how to cover multiple standards at the same time. Think you have to choose between rote skills and applications, or between boring and exciting? You don’t—seriously.

Karim Kai Logue

Mathalicious, Alexandria, Virginia

**205/206 (Convention Center)**

**NT** **552**

### Strategies to Be Proactive, Not Reactive, with Challenging Students

(6–12) Gallery Workshop

All classrooms have students that struggle with mathematics. Learn proactive steps to help students be successfully engaged in learning mathematics and have a little fun at the same time.

Connie Schrock

Emporia State University, Kansas

**Wabash Ballroom 2 (Convention Center)**

FRIDAY

3:00 P.M.–4:30 P.M.

### 553

#### Teaching 45 Concepts in the First Fifteen Days of School

(6–12) Gallery Workshop

How many concepts can your Algebra 1 students learn in the first fifteen days of school? Participants will work through four fun, engaging activities designed to explore 45 concepts in the first three weeks. The presenters will share how these activities can be a springboard for three major units of Algebra 1—linear, quadratic, and exponential functions.

Jonily Zupancic  
Gahanna-Jefferson Schools, Gahanna, Ohio

Nicole Kelley  
Gahanna-Jefferson Schools, Gahanna, Ohio

**103/104 (JW Marriott)**

### 554

#### Dance to the Music

(9–12) Gallery Workshop

How are geometry and algebra related to music composition, musical instrument design, broadcasting, and choreography? Help students understand transformations, patterns, symmetry, ratios, codes, logarithms, and the sine function through music and dance. Participants will receive a DVD of all teacher's and student's materials.

Chris R. Mackmin  
Braden River High School, Bradenton, Florida

Linda Shepard  
Braden River High School, Bradenton, Florida

**101/102 (Convention Center)**

### 555

#### Build a Digital Thermometer: The Math-and-Science Connection

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

Come build a digital thermometer to make connections between science and mathematics. Acquire data to create a mathematical model for calibration of voltage into Celsius. Examine the results of using this activity in high school classrooms. Participants will receive classroom-ready materials.

Timothy L. Sorey  
Central Washington University, Ellensburg

**Grand Ballroom VII (JW Marriott)**

### 556

#### Modeling Gravity and Friction: A STEM Activity Using Trigonometry

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

Participants will experience a science, technology, engineering, and mathematics (STEM) activity, implemented with students and preservice and in-service teachers, that uses a TI-84, a Calculator Based Ranger, and a computer to generate a trigonometric function modeling the effect of gravity and friction on a ball traveling on a curved surface. Handouts will be available.

John H. Lamb  
University of Texas at Tyler

**Marriott Ballroom 5 (Marriott Downtown)**



### 557

#### Building Mathematics Learning Communities Using NCTM Reflection Guides

(Preservice and In-Service)  
Gallery Workshop

Participants will actively engage in exploring journal articles that have been enhanced with a Reflection Guide by NCTM's Professional Development Services Committee. Facilitators will model the process of using the Reflection Guides to build school-based, professional learning communities. NCTM Reflection Guides are freely available online.

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

**Grand Ballroom IV (JW Marriott)**

3:30 P.M.–4:30 P.M.

### 558

#### A Primer of Math Poetry

(General Interest) Session

Participants will explore a variety of genres in mathematical poetry and take with them a number of poems for immediate use in their classrooms. Working individually or in small groups, they will both solve poem problems (i.e., story problems set to verse) and write at least one poem. Assessment and implementation strategies will also be considered.

John E. Hammett III  
Saint Peter's College, Jersey City, New Jersey

**Grand Ballroom III (JW Marriott)**

**559**



**Common Core Standards and Assessment: What's Next? The NCTM Interpretations**

**(General Interest) Session**

The current standards movement was dominated by an approach to standards building that differed from the NCTM process in the late 1980s. The first round focused on standards; the second moved to a thrust into assessing students and teachers. This presentation will give an update from experiences across the states' and federal initiatives, detailing the next round for all of us.

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

**Hall F (Convention Center)**

**560**

**STEM Education: Standards, Programs, and Then?**

**(General Interest) Session**

**Presidents' Series Presentation**

Programs for science, technology, engineering, and mathematics (STEM) education have rapidly increased over the past few years. School districts across the United States have prepared standards, which often begin in the middle grades. What do they look like? What is happening? Where are we going with STEM?

Don S. Balka  
School Science and Mathematics Association; Saint Mary's College, Notre Dame, Indiana

**125 (Convention Center)**

**561**

**It's Elementary! Lesson Study in the Primary Grades**

**(PreK–2) Session**

Watch videos of grades K–2 children excited about learning mathematics. See a classroom in which students are encouraged to solve problems using strategies that make sense to *them*. Find out about how lesson study can be an effective professional development model for primary grade teachers so that all students experience success in mathematics.

Karen Michele Arth  
California State University Fresno Foundation

Shannah R. Estep  
California State University Fresno Foundation

**Marriott Ballroom 6 (Marriott Downtown)**

**562**

**Building Number Sense through Counting Routines**

**(PreK–5) Session**

Early number sense is the core of making meaning in mathematics. Participants will learn ways to develop strong but quick counting routines that will have students interacting with number-sense concepts every day. The speaker will share video clips that deepen understanding about how to facilitate math talk around the big ideas of patterns and number relationships.

Jessica Shumway  
Fairfax County Public Schools, Alexandria, Virginia

**Sagamore Ballroom 4 (Convention Center)**

**563**

**One School's Story: Rethinking How Mathematics Is Taught and Learned**

**(PreK–5) Session**

Learn about a schoolwide professional development effort that challenged teachers to deepen their understanding of elementary school mathematics and consider changes in instruction to improve students' learning. Educative curriculum materials developed by teachers' teams will be shared, and the effects of public and reflective teaching will be discussed.

Fay Zenigami  
University of Hawaii, Curriculum Research and Development Group, Honolulu

Melfried Olson  
University of Hawaii, Honolulu

Atsuko Sakumoto  
Kapalama Elementary School, Honolulu, Hawaii

**Wabash Ballroom 1 (Convention Center)**



3:30 P.M.–4:30 P.M.

**NCTM** 564

**Understanding Title I and What It Can Mean for New Teachers**

(PreK–5) Session

Title I is one of the largest funding programs in education and impacts nearly every district. Learn what Title I can and cannot do in districts, schools, and classrooms. Learn why this is essential for teaching and learning math and what new teachers—and all teachers—should know to go back and connect with the right people in your district.

Nancy Konitzer  
Arizona Department of Education, Phoenix

**201/202 (Convention Center)**

**565**

**The Great Math Conspiracy of Grades K–5 Mathematics**

(PreK–5) Session

Did mathematicians conspire to make grades K–5 mathematics difficult for all of us? For decades teachers, educators, and researchers have been working to unpack, scaffold, decipher, and explain grades K–5 mathematics. It's time to expose this “math conspiracy” and reveal secrets that will assist teachers in helping their kids build mathematical worlds that make sense.

George D. Poole  
East Tennessee State University, Johnson City

**207 (Convention Center)**

**566**

**Are You Smarter than a Fifth Grader?**

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

These five authentic Math Olympiad problems were given to about 40,000 fifth graders during 2009–10. Test yourself against them! See how these problems in geometry and other topics can stretch your students. Attendees will get another fifty problems (yes, with solutions included) to use with your students to help prepare properly for high-stakes testing.

Richard Kalman  
Mathematical Olympiads for Elementary and Middle Schools, Bellmore, New York

Nicholas J. Restivo  
Mathematical Olympiads for Elementary and Middle Schools, Bellmore, New York

**White River Ballroom F (JW Marriott)**

**567**

**Consolidating Fifth-Grade Students' Understandings of Fractions through Multiple Embodiment**

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

Attendees will participate in activities from five lessons on unit fractions that have helped fifth-grade students consolidate their understandings of fraction knowledge. This presentation will emphasize multiple embodiment of concepts, through tasks relating to linear perimeter, capacity, and discrete models, but not the area model.

Xiaofen Zhang  
Illinois State University, Normal

**White River Ballroom G/H (JW Marriott)**

**568**

**Area: No Problem?**

(3–8) Session

Discover how to investigate and reinforce area concepts by solving authentic, nonroutine problems. Finding such problem-solving gems can be a real problem for teachers. You will work through at least a dozen area classics, selected from the Math Olympiad library, and leave with these and more than fifty additional rich problems.

Dennis C. Mulhearn  
Math Olympiads for Elementary and Middle Schools, Bellmore, New York

**White River Ballroom C/D (JW Marriott)**

**568.1**

**Transforming My Perspective on the Geometric Knowledge Needed for Teaching**

(3–8) Session

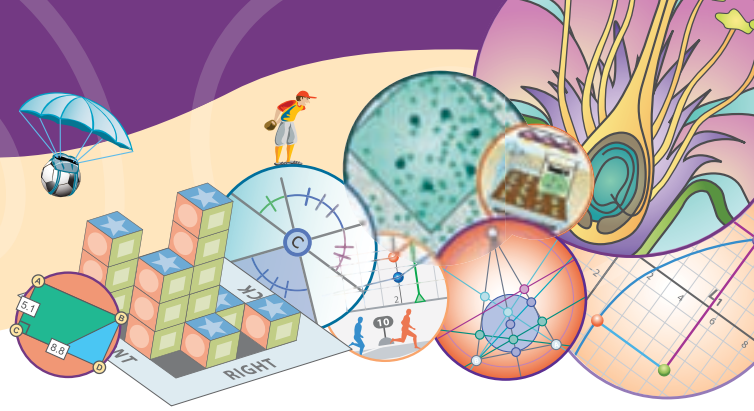
Research shows that the mathematical knowledge needed for teaching is very specialized. Strengthen your geometric knowledge needed for teaching as we explore how to unpack mathematical ideas and enable students' ability to reason about mathematical knowledge, using tasks to explore geometric ideas in several ways.

Enrique Galindo  
Indiana University Bloomington

Kai-Ju Yang  
Indiana University Bloomington

**Marriott Ballroom 9/10 (Marriott Downtown)**

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## Math Fact Fluency: The Next Generation

3:30 P.M.–4:30 P.M.

**569**

### **Communicating and Representing Mathematical Concepts through Comic Creation**

(3–8) Session

Creating their own comics is a fun, efficient way for students to represent and communicate their understanding of mathematical concepts, explain their reasoning, and develop their problem-solving skills. Come learn how to use math comic writing with students, see sample comics, and build a demonstration comic to teach about geometric shapes.

Leslee Francis Pelton  
University of Victoria, British Columbia, Canada

Tim Pelton  
University of Victoria, British Columbia, Canada

**Sagamore Ballroom 6 (Convention Center)**

**570**

### **Developing a Classroom Community for Mathematics Exploration**

(3–8) Session

Participants will explore proportional-reasoning problems and analyze their potential to support the development of mathematical reasoning and communication. The speakers will discuss factors that influence students' problem solving and disposition toward collaborating as mathematicians, communicating about mathematics, and critiquing mathematical reasoning.

Signe Kastberg  
Purdue University, West Lafayette, Indiana

Scott Frye  
Mooresville Consolidated School Corporation, Indiana

**111/112 (Convention Center)**

**571**

### **Easy as Pi**

(6–8) Session

Pi is hard for students to understand, but an essential concept for them to master in the middle grades. This presentation will focus on fun activities that will make students feel more comfortable with pi and understand how to derive the formulas where pi is used.

Andrew D. Montgomery  
Roycemore School, Evanston, Illinois

**101/102 (JW Marriott)**

**572**

### **Technology, Tangibles, and Simple Polyhedra**

(6–8) Session

Euler's formula is true for regular platonic solids. It turns out, rather beautifully, that it is true for pretty much every polyhedron. The speaker will guide participants through a lesson that prompts students to discover these properties using computer software and the PolyPackPlus. A complementary handout will outline activities.

Jane A. Whitmire  
Central Washington University, Ellensburg

**Marriott Ballroom 3/4 (Marriott Downtown)**

**573**

### **Developing Geometric Thinking through Paper Folding**

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

The speaker will describe an exploration in paper folding conducted in a geometry course for future middle school teachers. He will examine the geometric ideas the tasks brought out, as well as samples of students' work that highlight the tasks' potential for fostering geometric reasoning. No prior experience with paper folding is required.

Peter S. Wiles  
Eastern Illinois University, Charleston

**Wabash Ballroom 3 (Convention Center)**

**574**

### **Picture This! Visualization in Algebra**

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

Middle school algebra provides a fertile ground for "seeing" solutions to problems. This fast-paced presentation will explore everything from picturing numerical patterns geometrically to solving equations and other problems with paper folding and graphing calculators. Explore multiple representations to promote understanding of basic algebraic ideas.

Daniel J. Brahier  
Bowling Green State University, Ohio

**141/142 (Convention Center)**

3:30 P.M.–4:30 P.M.

**575**

### **Crossing the Lines: Where Geometry and Literature Meet**

(6–12) Session

Many see geometry and literature as distinct topics, and never the two shall meet! The speakers will examine the intersection of literature and geometry through mathematical examples from Shakespearean plays and other common novels read at the secondary school level.

Byung-In Seo  
Chicago State University, Illinois

Susan Hillman  
Saginaw Valley State University, University Center,  
Michigan

**Grand Ballroom I (JW Marriott)**

**577**

### **Proportional Reasoning, Pick's Theorem, and an Open-Source Graphics Tool**

(6–12) Session

Pick's theorem is a method for calculating the area of complex polygons by relating points inside the area of a grid to those on its boundary. The open-source graphics editor GIMP allows users to do this with remotely sensed images. This demo ties to proportional reasoning, geometry, and student's understanding of geography.

Brian H. Giza  
University of Texas at El Paso

Olga Kosheleva  
University of Texas at El Paso

**140 (Convention Center)**

**578**

### **Space Math@NASA and NASA eClips™: Real-World Algebra Connections**

(6–12) Session

Do your students ask *why* they should learn algebra and *when* they might use it? Space Math@NASA, paired with NASA eClips™ video segments, answers these questions by building real-world connections and relevance to algebra content. In addition to these free NASA resources, you will learn how to “power up” your lessons through the use of other Web 2.0 tools such as online models and simulations.

Sten Odenwald  
NASA Goddard Space Flight Center, Greenbelt,  
Maryland

Sharon Bowers  
National Institute of Aerospace, Hampton, Virginia

Elaine Lewis  
NASA Goddard Space Flight Center, Greenbelt,  
Maryland

**Grand Ballroom VIII (JW Marriott)**

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FRIDAY



3:30 P.M.–4:30 P.M.

**579**

**Using Open-Ended Questions to “Teach to the Test”**

(6–12) Session

High-stakes exams have a large influence on teachers’ practice. Attendees will look at sample end-of-year algebra questions and design their own open-ended, conceptual questions that address the same topics and could be used in the classroom. Sample rubrics for grading open-ended questions will be shared.

Rachael H. Kenney  
Purdue University, West Lafayette, Indiana

**Grand Ballroom X (JW Marriott)**

**580**

**Different Types of Interactive Geometry Problems to Foster Mathematical Discussion**

(9–12) Session

The speaker will introduce a variety of interactive geometry problems that can foster mathematical discussion. Examples include problems that relate geometric definitions to dynamic constructions or involve generating conjectures by searching for a conclusion or premise to use in an “if ... then” statement.

Anna E. Baccaglioni-Frank  
University of Siena, Italy

**Grand Ballroom V (JW Marriott)**

**581**

**Bloom Takes Calculus: Higher-Level Tasks for Your Calculus Courses**

(9–12, Higher Education) Session

Do your students think that calculus is just a plug-and-chug game? How can you ensure that you address the higher levels of Bloom’s Taxonomy when teaching calculus? This presentation will explore answers to these questions and include engaging ideas and concrete examples of calculus tasks that you can take to your own classes.

Gizem Karaali  
Pomona College, Claremont, California

**143 (Convention Center)**

**582**

**Variability Is the Spice of Life**

(9–12, Higher Education) Session

According to the American Statistical Association’s *GAISE* document, variability should be the focus of all statistics education. But how well do we and our students understand variability? This presentation will explore the pesky nature of variability while discovering important tools for dealing with it as we organize, represent, and analyze data.

Robert Glasgow  
Southwest Baptist University, Bolivar, Missouri

**120 (Convention Center)**

**583**

**Accumulation and Functions Defined by Integrals**

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

Learning to look at a function defined by a definite integral provides a perspective that one can use to solve a variety of problems in calculus. Yet textbooks barely mention this concept, a staple of the AP Calculus exams. This presentation will look at the ideas behind accumulation and how they apply in a variety of situations, from writing a line’s equation to solving differential equations.

Lin McMullin  
National Math and Science Initiative, Dallas, Texas

**128 (Convention Center)**

**584**

**Reasoning and Sense Making: Making It Central**

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

This presentation will highlight the work of a group of teachers collaborating on NCTM’s recent document, *Focus in High School Mathematics: Reasoning and Sense Making*. The teachers met throughout the year as they incorporated these recommendations into their teaching by conducting action research. The speaker will share what they learned.

Lindsay Umbeck  
Purdue University, West Lafayette, Indiana

**109/110 (Convention Center)**

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3:30 P.M.–4:30 P.M.

**585**

**Alternative Pathways to College Mathematics Success**

(Higher Education) Session

In many colleges, the traditional mathematics sequence is a barrier to students completing their degree requirements. In this presentation, participants will learn of a new pathway to college level mathematics. It has been developed with input from many different organizations including AMATYC, NCTM, MAA, NADE, and ASA as well as the Dana Center and Carnegie Foundation.

Robert A. Farinelli  
Community College of Allegheny County, Pittsburgh,  
Pennsylvania

**Sagamore Ballroom 2 (Convention Center)**

**586**

**A Promising Intervention Program in Remediation Math Courses**

(Higher Education) Session

TODOS: Mathematics for ALL Presentation

At the University of Texas—Pan American, a Hispanic-serving institution (HSI), a considerable number of underprepared entering freshmen, primarily Hispanic, have struggled in remediation math courses and could not be retained in their collegiate study. This presentation will benefit faculty, especially at HSI institutions, who are seeking to improve both pass rates in “gate keeper” courses and time to graduation.

Olga M. Ramirez  
University of Texas—Pan American, Edinburg

John E. Bernard  
University of Texas—Pan American, Edinburg

Cristina Villalobos  
University of Texas—Pan American, Edinburg

**107/108 (Convention Center)**

**587**

**Authentic Teaching Experiences in Secondary Mathematics Methods Courses**

(Preservice and In-Service) Session

Many preservice teachers find peer teaching hard, with no discipline issues, and little mathematical discourse because the “students” know the content. The speaker will share a recent change in, and feedback from, her methods course, where preservice teachers teach in developmental classes, videotape lessons, and analyze and reflect on the experience.

Paula R. Stickle  
Millikin University, Decatur, Illinois

**123 (Convention Center)**

**588**

**Great Expectations: Making Good Math Teachers Great**

(Preservice and In-Service) Session

Abstract thinking is what makes great writers, great mathematicians, great scientists, great musicians, great athletes, and great artists. So what exactly is it, and can we teach it? Join the speaker and see how a few changes to your teaching practice can make your students great in math. Great minds really do think alike!

Greg Tang  
Houghton Mifflin Harcourt Math, Boston, Massachusetts

**Grand Ballroom VI (JW Marriott)**

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4:00 P.M.–5:00 P.M.

**ew 589.1**

**Using MimioVote in the Classroom**

(General Interest) Exhibitor Workshop

In just 60 minutes this session will cover all the basic software functions of the user-friendly MimioVote assessment system and provide hands-on training and practice. You'll explore the options for creating targeted assessments: supplied question templates, customized tests, imported question banks, and oral questions on the fly.

DYMO/Mimio  
Cambridge, Massachusetts

**116 (Convention Center)**

FRIDAY

# 5 Great Reasons to Stop by the NCTM Member Showcase!

- Learn how to access your exclusive member-only online benefits—journal articles, tips to make your job easier, and lesson plans.
- Take home helpful teaching tools—sample journals, activities, newsletters, and more.
- Learn how to get published in an NCTM journal, become a referee for journal features, or adapt articles for use in your classroom. Journal editors will be on site.
- Join or renew in Indianapolis and receive a free T-shirt.\*
- Plus, stop by to learn about our daily prize drawing!

*Let us help you maximize your membership experience!*

\* Some restrictions and exclusions apply; see the Member Showcase for details.



**NCTM** NATIONAL COUNCIL OF TEACHERS OF MATHEMATICS

FRIDAY

4:00 P.M.–5:00 P.M.

ew **589.2**

## Singapore Math: A Digital Curriculum Approach

(General Interest) Exhibitor Workshop

The Singapore Math Digital Curriculum aims to help educators teach, and students acquire math concepts with interactive tutorials using content and methods proven effective in Singapore. Discover how the Singapore Math Digital Curriculum introduces activities and games for users to apply their conceptual knowledge and reinforce skills in real-world, problem-solving strategies.

Marshall Cavendish International  
Singapore

**208 (Convention Center)**

ew **589.3**

## Redesigned, Rechargeable, Revolutionary: Experience the Latest TI-Nspire™ Technology

(7–12) Exhibitor Workshop

See TI's newest learning technology: redesigned, rechargeable, and revolutionary! The most visually engaging TI technology ever allows for exploration of math concepts through multiple representations, interactive manipulation, and brilliant display, and it has some new features that may surprise you. Plus, it's permitted on many college entrance exams!

Texas Instruments (TI)  
Dallas, Texas

**209 (Convention Center)**

4:45 P.M.–5:30 P.M.

NT **590**

## New Teacher Celebration!

(Preservice and In-Service) Session

Celebrate the progress and possibilities. We are looking for all new and early-career teachers and students working to enter this exciting profession. Learn a little, laugh more, and win wonderful prizes. Come celebrate with us. You are the future.

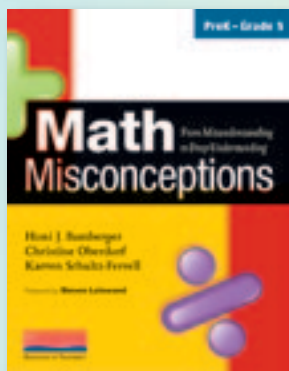
**Sagamore Ballroom 2 (Convention Center)**





# Notes

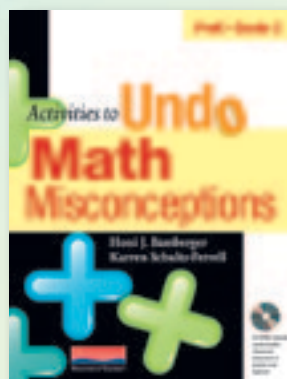
# Practical resources from the **authors** you trust. Heinemann makes it all make sense.



**Math Misconceptions**  
*From Misunderstanding  
to Deep Understanding*

**Honi Bamberger,  
Christine Oberdorf  
and Karren Schultz-Ferrell**

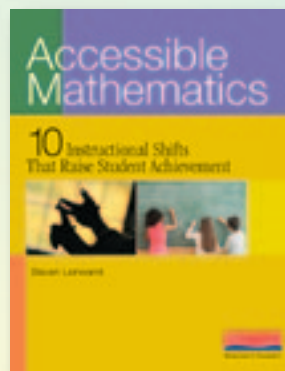
Gr PreK-5 / 978-0-325-02613-8 / 224pp / \$21.00



**Activities to Undo  
Math Misconceptions**

Gr PreK-2 / 978-0-325-02614-5 / 152pp / \$20.00

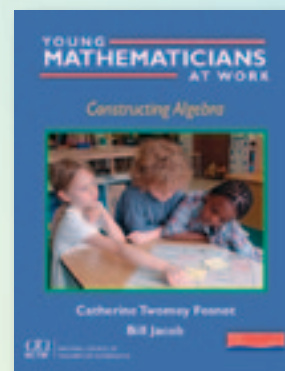
Gr 3-5 / 978-0-325-02617-6 / 144pp / \$20.00



**Accessible Mathematics**  
*10 Instructional Shifts That  
Raise Student Achievement*

**Steven Leinwand**

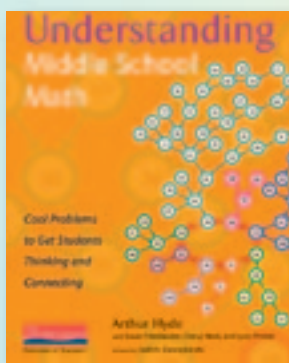
Gr K-12 / 978-0-325-02656-5 / 128pp / \$17.00



**Young Mathematicians  
at Work:**  
*Constructing Algebra*

**Catherine Twomey Fosnot  
and Bill Jacob**

Gr K-8 / 978-0-325-02841-5 / 224pp / \$25.00

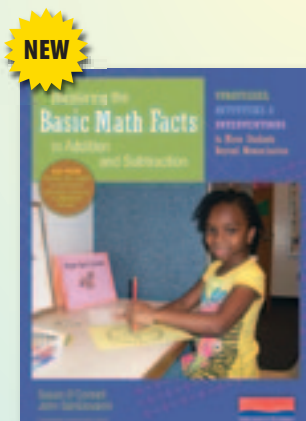


**Understanding Middle  
School Math**

*Cool Problems to Get Kids  
Thinking and Connecting*

**Arthur Hyde**

Gr 6-8 / 978-0-325-01386-2 / 280pp / \$27.00

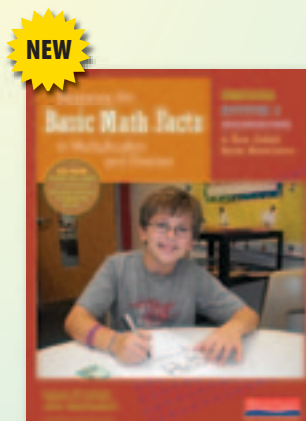


**Mastering the Basic Math  
Facts in Addition  
and Subtraction**

*Strategies, Activities, and  
Interventions to Move Students  
Beyond Memorization*

**Susan O'Connell  
and John SanGiovanni**

Gr K-3 / 978-0-325-02963-4 / 192pp / \$25.00

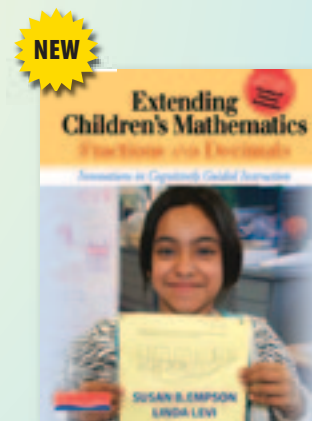


**Mastering the Basic Math  
Facts in Multiplication  
and Division**

*Strategies, Activities, and  
Interventions to Move Students  
Beyond Memorization*

**Susan O'Connell  
and John SanGiovanni**

Gr 2-6 / 978-0-325-02962-7 / 192pp / \$25.00



**Extending Children's  
Mathematics: Fractions  
and Decimals**

*Innovations in Cognitively  
Guided Instruction*

**Susan B. Empson  
and Linda Levi**

Gr 1-6 / 978-0-325-03053-1 / 240pp est. / \$24.00 est.

SATURDAY

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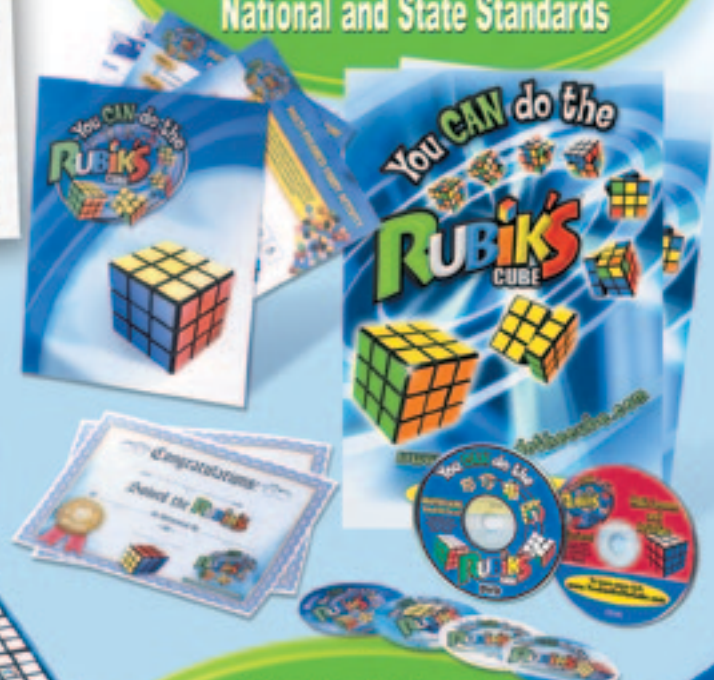
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SATURDAY



# Planner Saturday

8:00	
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11:30	
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1:30	



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SATURDAY

## HIGHLIGHTS

Closing Session (Presentation 672): The Art of Geometry

**Registration Hours**  
7:00 a.m.–10:00 a.m.

**Exhibits and  
Calculation Nation® Hours**  
9:00 a.m.–12:00 noon

**Bookstore and Member  
Showcase Hours**  
8:30 a.m.–12:00 noon

**Fire Codes**

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



8:00 A.M.–9:00 A.M.

**591**

### Exploring Cognitive Demands of Mathematical Tasks

(General Interest) Session

Participants will develop their understanding of cognitive demands of mathematical tasks and engage in activities of identifying levels of the tasks' cognitive demands. Participants will also look at factors that may maintain or decline the level of a task's cognitive demand during the task's setup and implementation.

Bernard J. Rahming  
Milwaukee Public Schools, Wisconsin

**207 (Convention Center)**

**592**

### Motivate with Money: Closing the Achievement Gap with Financial Literacy

(General Interest) Session

Motivating students to achieve personal success in the math classroom is a teacher's on-going concern, because many students shut down when faced with challenges. Using a school "bank," you can encourage students to earn "money" for achievement while they learn the basics of financial literacy.

Susan Buffington Brooks  
Bull Run Middle School, Gainesville, Virginia

Brooke A. Lancaster  
Fairfax County Public Schools, Falls Church, Virginia

**103/104 (Convention Center)**

**593**

### Probability: Taking Off to a Flying Start

(General Interest) Session

We will show a series of situations that induce students' probabilistic reasoning. Some of them are useful for introducing probability concepts, others for highlighting misconceptions related to uncertainty. Most of these examples do not require being confident with rational numbers, so they can be used with young children.

Chiara Andra  
Università di Torino, Italy

Samuele Antonini  
Università di Pavia, Italy

**Wabash Ballroom 3 (Convention Center)**

**594**

### Supporting Students' Achievement of the "Common Core"

(General Interest) Session

Despite on-going hand wringing about the achievement gap, much is known about what schools do that effectively raises all students' achievement. This presentation will informatively and humorously examine research-based features of schools that effectively improve all students' learning.

Matt Larson  
Board of Directors, National Council of Teachers of Mathematics; Lincoln Public Schools, Nebraska

**500 Ballroom (Convention Center)**

**595**

### Walking the Talk: Generating Students' Robust Discourse in Your Classroom

(General Interest) Session

Explore talk moves and learn how to generate robust academic discourse that significantly improves students' learning. Move beyond the basics and learn how specific talk moves empower students to engage in their own learning. The speakers will explore how to differentiate without lowering the standards, even for special-needs and second-language learners. Video, handouts, and techniques will be shared.

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

Lucy West  
Metamorphosis Teaching Learning Communities, New York, New York

**201/202 (Convention Center)**

**596**

### Got 10 Minutes? Do Algebra

(PreK–2) Session

Young children can do algebra. Come explore functions, variables, and equality in the primary school classroom. Examples of students' work will highlight algebra learning in the primary grades.

Bonnie J. Hagelberger  
Retired, Monroe Elementary School, Brooklyn Park, Minnesota

**Sagamore Ballroom 4 (Convention Center)**

8:00 A.M.–9:00 A.M.

**597**

### Measuring the Value of Listening to Students

(PreK–2, Preservice and In-Service) Session

A teacher involved in lesson study for two years will discuss the mathematics learned when teachers listen to students, observe mathematics instruction, and engage in a professional community. Come find out what pound meters and regrouping sticks are. Stay to learn about measurement, place value, and empowering students to reason.

Dana C. Cox  
Miami University, Oxford, Ohio

**Wabash Ballroom 1 (Convention Center)**

**598**

### Formative Assessment in the Life of a Busy Teacher

(3–5) Session

This presentation will focus on assessment strategies that are easily implemented into daily classroom routines, including suggestions for framing questions and tasks to engage students and gather information for instructional planning.

Mari Muri  
Wesleyan University, Middletown, Connecticut

Jeanne M. Joyner  
Meredith College, Raleigh, North Carolina

**Sagamore Ballroom 2 (Convention Center)**

**599**

### Math TALK

(3–5) Session

Transform your classroom into a mathematical thinking and learning community. The focus will be on helping the teacher shift from being the sole questioner to students and teachers as coquestioners. Learn how to guide your students to think critically and be responsible for explaining, defending, and justifying their mathematical thinking.

Sally Goss  
Howard County Public Schools, Ellicott City, Maryland

Joan Tellish  
Howard County Public Schools, Columbia, Maryland

**Sagamore Ballroom 6 (Convention Center)**

**600**

### Revealing and Addressing Students' Misconceptions of Perimeter and Area

(3–5) Session

A veteran teacher will describe adapting and developing class lessons aimed at addressing students' misconceptions of perimeter and area. Examples of students' work will be presented along with handouts describing the lessons, tasks, and their goals.

Jenni K. McCool  
University of Wisconsin—La Crosse

Carol Holland  
Bushnell-Prairie City Elementary School, Bushnell, Illinois

Jeffery E. Barrett  
Illinois State University, Normal

**140 (Convention Center)**

**601**

### Using Number Talks to Build Mental Math and Computation Strategies

(3–5) Session

What are number talks, and how do they help students build efficient, accurate, flexible computation and mental math strategies? Participants will engage in a number talk and watch classroom number-talk video clips of third- and fifth-grade students. Participants will learn how to implement number talks that foster students' reasoning, build number sense, and facilitate access for all learners.

Sherry D. Parrish  
Mountain Brook Schools, Alabama

**123 (Convention Center)**

SATURDAY

8:00 A.M.–9:00 A.M.

## 602

### Making the Transition from Teacher to Mathematics Coach

(3–8) Session

Many districts now recognize the importance of supporting mathematics instruction with dedicated mathematics coaches. Explore the challenges that arise from the transition from classroom teacher to mathematics coach. Learn research-based strategies for designing professional development, leading professional learning communities, and working with individual teachers.

Kimberly Morrow Leong  
Loudoun County Public Schools, Ashburn, Virginia

Diane Taylor  
Loudoun County Public Schools, Ashburn, Virginia

109/110 (Convention Center)

## 603

### The Real Story on Middle School Math Achievement

(6–8) Session

This presentation uses grade 8 data from the 1978 through 2009 national assessments to show that students today know significantly more math than their counterparts of the 1970s. The speaker will share assessment items along with performance history. How to use the items to compare your students to national samples will also be discussed.

Peter Kloosterman  
Indiana University Bloomington

Doris Mohr  
University of Southern Indiana, Evansville

Crystal Walcott  
Indiana University–Purdue University Columbus

128 (Convention Center)

# Mastering the Common Core: We have the Practices.

Make sense, persevere, generalize, apply, reason and critique, build mathematical models, use strategies, look for patterns and structure—these are the practices that the Common Core State Standards and leaders are saying “should be as much a goal of the mathematics curriculum as the learning of specific content.” The Math Forum community has been developing mathematical communication and problem solving skills every day since 1992. With over 3.5 million visits each month, we’re the world’s leading online math education community. To learn more, call 800-756-7823 or visit [mathforum.org](http://mathforum.org).

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“The Math Forum has given me opportunities to interact with colleagues that have challenged and extended my thinking about teaching and learning mathematics. The staff are remarkable thinkers and supporters to teacher and student success... The people I met at Math Forum institutes are still good friends and colleagues, well over 10 years later. I could not imagine a more important website community for math teachers than the Math Forum.”

—Evan Glazer, Ph.D., Principal, Thomas Jefferson High School  
for Science & Technology, Fairfax, Virginia  
(Ranked #1 High School in U.S. News and World Report)

SATURDAY

8:00 A.M.–9:00 A.M.

**604**

### Learning to Eat Right Using Percent Problems

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

Using percents can be tricky. This presentation will explore different representations for percents, different word problems involving percents, and strategies to solve these problems. We will then investigate the real-life dilemma of choosing healthy meals and snacks from fast food restaurants that meet the appropriate standards for protein and fat.

Kath Miller Rondinone  
Southern Connecticut State University, New Haven

**141/142 (Convention Center)**

**605**

### Concept and Vocabulary Acquisition: Keys to Success in Geometry

(6–12) Session

TODOS: Mathematics for ALL Presentation

Learning geometric concepts and vocabulary in a hands-on, activity-based environment helps all students succeed in mathematics. This session will provide classroom-ready activities that help students go beyond memorizing geometric vocabulary. Techniques for using The Geometer's Sketchpad to deepen understanding will also be discussed.

William A. Jasper  
Sam Houston State University, Huntsville, Texas

**120 (Convention Center)**

**606**

### Learn How to Create Your Own Wii Interactive Whiteboard

(9–12) Session

Need modern technology for your classroom? Discouraged by the high-priced interactive whiteboard hardware and software programs that are available? Here is a great new way to move your classroom into the twenty-first century without spending a lot of money. Learn how you can create your own interactive whiteboard system using a Wii remote.

Deana L. Deichert  
University of Central Florida, Orlando

Mercedes Sotillo  
University of Central Florida, Orlando

**107/108 (Convention Center)**

**607**

### Thinking Deeply about Two Elementary Math Concepts: Area and Perimeter

(9–12) Session

Using a sheet of paper and a simple rule for creating a polygon, many interesting area and perimeter problems can be explored with paper and pencil, Fathom, and The Geometer's Sketchpad. Most of NCTM's Content and Process Standards are embedded in these problems, which can be differentiated for classroom use. Participants will receive all materials to implement these problems in their own classrooms.

Wayne Nirode  
Troy High School, Ohio

**125 (Convention Center)**

**608**

### Mathematics Teachers' Responses to Professional Development and Reform Curriculum Implementation

(9–12, Higher Education) Research Session

This qualitative study examined rural high school mathematics teachers' responses to the initial implementation of Louisiana's Comprehensive Curriculum during their second year of involvement in a professional development program.

Teodora B. Cox  
State University of New York—College at Fredonia

**143 (Convention Center)**

**609**

### Transforming Perspectives through the Historiography of Mathematics in Africa

(Higher Education, Preservice and In-Service) Session

Benjamin Banneker Association Presentation

The speakers will present a more accurate history of significant geometrical concepts that were inspired by African intellect and culture. Their aim in disseminating these historical facts is to transform the personal perspectives of mathematics educators and students who may ascribe to a Eurocentric bias in mathematics historiography.

Gerunda B. Hughes  
Howard University, Washington, D.C.

Adeniran Adeboye  
Howard University, Washington, D.C.

**111/112 (Convention Center)**

SATURDAY



8:30 A.M.–10:00 A.M.

**610**

### Shaping Up in Geometry

(PreK–2) Gallery Workshop

Participants will explore how the use of hands-on activities, technology, and games can enhance students' understanding of geometric principles. By integrating a variety of resources, students can develop conceptual understanding of shapes, their attributes, and spatial reasoning while having fun!

Lisa K. Rogers  
Math Solutions, Sausalito, California

Amy C. Mayfield  
Math Solutions, Sausalito, California

**Sagamore Ballroom 3 (Convention Center)**

**611**

### Inspiring Students to Be Geometry Problem Solvers

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

Experience each of the components of quality mathematics problem-solving lessons. Participate in solving geometry tasks intended to reach a diversity of students' abilities. The speakers will focus on questioning, scaffolding students' sharing, and extending topics for depth. Take away a CD with problem-solving lessons that link to our virtual manipulatives.

Ann McMahon  
Oregon Council of Teachers of Mathematics, Portland

Winnie Miller  
Teacher to Teacher Publications, Portland, Oregon

**144/145 (Convention Center)**

**612**

### Developing Geometric Concepts with Struggling Students

(PreK–5) Gallery Workshop

This interactive presentation will identify and examine strategies for plugging holes in students' understanding of geometric concepts. Engage in hands-on activities and leave with activities appropriate for immediate classroom use.

Sandra L. Atkins  
Creating AHAs, Saint Petersburg, Florida

**105/106 (Convention Center)**

**613**

### Fact Fluency the Singapore Math Way

(PreK–5) Gallery Workshop

Help students build a strong foundation in fact fluency and number sense based on Singapore Math strategies. Fact fluency strengthens conceptual understanding, critical-thinking skills, and efficient problem-solving skills. Participants will learn how to teach fact fluency in a fun, engaging way. Activities will be provided.

Johnette Roberts  
Singapore Math Project, City of Baker School System,  
Louisiana

**205/206 (Convention Center)**

**614**

### Packing a Powerful Punch with Patterns: Foundations of Algebraic Thinking

(PreK–5) Gallery Workshop

This workshop will focus on patterns, relations, and algebraic thinking, important elements of the NCTM's Algebra Content Standard. Participants will engage in a hands-on approach that will, when taken back to the classroom, help grades K–5 students build the concept of equality and develop the thinking and reasoning processes they will need for success in algebra. Handouts will be provided.

Carollee Norris  
Peace River North School District, Fort Saint John, British  
Columbia, Canada

**Sagamore Ballroom 7 (Convention Center)**

**615**

### Folding Your Way to Geometry Understanding

(3–5) Gallery Workshop

Discover how hands-on activities, including patty paper and foldables, can be used to motivate students as they develop geometric skills, use and increase their mathematical vocabulary, and apply geometric concepts to real-world situations. Leave with classroom-ready activities and helpful suggestions for implementation.

Katherine L. Reid  
Eastern Oregon University, La Grande

**126/127 (Convention Center)**

8:30 A.M.–10:00 A.M.

**616**

### **Finding the Mean: Not Just an Application of Long Division**

**(3–8) Gallery Workshop**

Participants learn three hands-on approaches to finding the mean of small data sets. Leveling the data interpretation derives the familiar formula, whereas variations of the balance point interpretation develop properties of the mean. Come see how see-saws, number lines, and blocks help your students make sense of the mean.

Robin O'Dell  
Buffalo State College, New York

**124 (Convention Center)**

**617**

### **Radical Math: Math Games for Middle School**

**(6–8) Gallery Workshop**

Participants will play and learn hands-on, manipulatives-based math games that align closely with the draft national curriculum; prealgebra and algebra; coordinate geometry; mixed operations and the order of operations; fractions, decimals, percents, and ratios; probability and data analysis; patterning; problem solving; mental math strategies; and more.

John Felling  
Retired, Edmonton, Alberta, Canada

**Sagamore Ballroom 5 (Convention Center)**

**618**

### **Investigating Area, Volume: Using Manipulatives, The Geometers' Sketchpad® (GSP), TinkerPlots™**

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

How can geometry lessons be made more interactive and effective? How can statistical concepts and tools help make geometry and measurement useful, interesting, and more understandable for students? Participate with others in exploring concepts of area and volume in a variety of ways using paper, scissors, beans, and GSP and TinkerPlots software.

Hyunyi Jung  
Indiana University Bloomington

Diana V. Lambdin  
Board of Directors, National Council of Teachers of Mathematics; Indiana University Bloomington

**Wabash Ballroom 2 (Convention Center)**

**619**

### **Access Geometry through Architectural Design**

**(9–12) Gallery Workshop**

Participants will explore how elements of architectural design can help teach geometric concepts. Participants will receive and perform lessons created for an architectural design academy. Outcomes from students' work will be discussed. Participants will brainstorm new ideas for how all students can access geometry.

Frank A. Carrillo  
Garfield High School, Los Angeles, California

**101/102 (Convention Center)**

**620**

### **An Introduction to Geometry on the TI-NSpire™ Calculator**

**(9–12) Gallery Workshop**

This presentation will give participants hands-on experience with the TI-NSpire calculator in geometry using the transformation menu to perform reflection, dilation, and translation with an investigative approach. The speaker will provide inquiry-based practice with construction and measurement of geometric objects, including angle, length, and area.

Dianna Galante  
Governors State University, University Park, Illinois

**Sagamore Ballroom 1 (Convention Center)**

**621**

### **Recursion through Pictures and Manipulatives**

**(9–12) Gallery Workshop**

Start using recursion as a strategy in the classroom. Participants will investigate Tower of Hanoi, Lions in Cages, Leap Frog, triangular numbers, and the Fibonacci series by using manipulatives and diagrams; create recursive and nonrecursive general terms; and use graphing calculators to solve for specific terms in the sequence.

Raymond Siegrist  
State University of New York—College at Oneonta

**203/204 (Convention Center)**

SATURDAY

8:30 A.M.–10:00 A.M.

**622**

### **If They Only Knew How Well Transformations Make Things Clear!**

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

Seeing how points move under various two-dimensional scenarios can open up a whole world of alternative learning possibilities for geometry and trigonometry students. “Slide” on over and take some “turns.” You’ll “flip” over what you discover!

Tim McNamara  
McNamara Educational Consulting Services, Inc.,  
Webster, New York

**121/122 (Convention Center)**

9:30 A.M.–10:30 A.M.

**623**



### **Old Challenges in New Guise**

(General Interest) Session

The various NCTM *Standards* documents, NCTM’s Focal Points, and the Common Core State Standards represent attempts to address specific challenges associated with the content

of school math curriculum. This presentation will focus on the noncurriculum challenges that have endured over time with little apparent progress made in dealing with them.

Lester is Emeritus Chancellor’s Professor of Mathematics Education and Cognitive Science at Indiana University. He has been a Fulbright Fellow in Brazil and a permanent consultant to the Swedish National Center for Mathematics Education. He has lectured nationally and internationally on mathematical problem solving, alternative assessment, and research in mathematics education. His emphases have been how to teach through problem solving and how to conduct research that makes a difference in children’s education.

Frank Lester  
Indiana University, Bloomington

**500 Ballroom (Convention Center)**

**624**

### **The ICME: Travel to Seoul**

(General Interest) Session

Broaden your perspective on mathematics education. This presentation will give an overview of the International Congress on Math Education (ICME) to be held in Seoul, South Korea, July 8–5, 2012, and information on applying to receive a travel grant to attend this exciting event.

Ana Ferreras  
National Academy of Sciences, Washington, D.C.

Patrick Scott  
New Mexico State University, Santa Fe

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

**128 (Convention Center)**

**625**

### **When ELL Students Excel in Mathematics: Toward a Systems Solution**

(General Interest) Research Session

TODOS: Mathematics for ALL Presentation

Three district-based, university–public school mathematics projects demonstrate that English language learners’ low achievement in mathematics may be due to the lack of access to meaningful mathematics in a comprehensive district system. Data show achievement growth for ELL mathematics students in mathematically connected project districts.

Karin Wiburg  
New Mexico State University, Las Cruces

Cathy J. Kinzer  
New Mexico State University, Las Cruces

Rocio Benedicto  
New Mexico State University, Las Cruces

**Sagamore Ballroom 2 (Convention Center)**



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9:30 A.M.–10:30 A.M.

**626**

### Women and Geometry

(General Interest) Session

Women and Mathematics Education  
Presentation

President Series Presentation

This presentation will introduce the audience to geometry contributions of women. The focus will be on historical geometric development through the present. Activities and interesting information will be included that may be useful for integration in classes.

Judy A. Werner

Women and Mathematics Education; Slippery Rock  
University, Slippery Rock, Pennsylvania

**111/112 (Convention Center)**

**627**

### Taking Number Sense to the Next Level with CGI

(PreK–2) Session

Are you ready to take your number-sense instruction to the next level? Learn how the speakers' first-grade team enhanced their current number-sense focus with cognitively guided instruction (CGI). This presentation will show how to integrate CGI into number-sense teaching methods and track students' learning using this approach.

Megan Gregory

Fairfax County Public Schools, Alexandria, Virginia

Katie Gilmore

Fairfax County Public Schools, Alexandria, Virginia

**207 (Convention Center)**

**628**

### Teaching without Talking: Building Visual Attention, Focus, and Working Memory

(PreK–5) Session

It's riveting! When the teacher doesn't talk, children watch intently to puzzle out how to join in the activity. They listen to one another, connect ideas, and construct meaning on their own. Classroom video will show it in action. You will learn many examples—in number, classification, logic, early algebra—you can use in grades K–5 teaching. This method works great for English language learners.

Samantha Lowe

Miriam McCarthy Elementary School, Framingham,  
Massachusetts

Kate Sorgi

Barbieri Elementary School, Framingham, Massachusetts

Shelle Crandell

Miriam McCarthy Elementary School, Framingham,  
Massachusetts

**Sagamore Ballroom 4 (Convention Center)**

**629**

### Virtual Manipulatives That Offer Scaffolding and Adaptations

(PreK–5) Session

Teachers must scaffold and adapt learning for individuals. Optimize your time by using the speakers' free virtual manipulatives to support students as they develop conceptual understandings. Learn best practices for adapting in ways concrete manipulatives can't. Take your students from known to unknown, from haptic to virtual, and from concrete to abstract.

Laura Koch

DreamBox Learning Inc., Bellevue, Washington

Mickelle J. Weary

DreamBox Learning Inc., Bellevue, Washington

**Wabash Ballroom 3 (Convention Center)**

SATURDAY

Don't miss the  
**Closing Session**  
on Saturday afternoon  
with featured speaker  
Bathesheba Grossman.

9:30 A.M.–10:30 A.M.

**630**

### **The Problem-Solving, RtI Alternative to Meet Students' Needs**

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

The speaker will discuss and give examples of how four-step problem-solving and Response to Intervention (RtI) ideas may be used as decision-making tools. In a three-tiered approach, RtI offers effective assistance to children through early intervention, frequent progress measurement, and increasingly intensive, research-based interventions.

Enrique Ortiz  
University of Central Florida, Orlando

**201/202 (Convention Center)**

**631**

### **Can't Do Long Division? Adjusting to Students' Transitioning Computational Strategies**

(3–8) Session

Equitable teaching requires that teachers approach algorithms flexibly, accepting various levels of sophistication from students. Since elementary schools today use informal strategies more readily, the speakers will explore students' computational work, discussing ways to incorporate these new approaches into algorithm instruction.

Jane Keiser  
Miami University, Oxford, Ohio

Karen Fitch  
Talawanda Local School District, Oxford, Ohio

Don Gloeckner  
Talawanda Local School District, Oxford, Ohio

**143 (Convention Center)**

**632**

### **Investigation Stations**

(3–8) Session

Learn exciting ways to integrate geometry concepts with hands-on science activities, and use the activities to engage your students in differentiated instruction.

Lynn Gannon Patterson  
Murray State University, Kentucky

Meagan Musselman  
Murray State University, Kentucky

**Sagamore Ballroom 6 (Convention Center)**

**633**

### **Mathematicians at Work: Explorations in Problem Solving**

(6–8, Higher Education) Session

Many students equate excellence in math with speed in problem solving and are unaware that mathematicians may spend years on a single problem. Learn about a project that encourages students to investigate a single problem at length and to communicate mathematical thinking. Receive detailed directions and sources of problems.

Mary Pat Sjoström  
Chaminade University, Honolulu, Hawaii

**120 (Convention Center)**

**634**

### **More SMART Games That Engage**

(6–12) Session

Experience more exciting, interactive review games using SMART technology to engage your students and reinforce your lessons in a fun way. Easy-to-play, easy-to-edit game templates will make review day enjoyable for you and your students.

Karen L. Compere  
Trinity Christian Academy, Addison, Texas

Judy Lins  
Trinity Christian Academy, Addison, Texas

**103/104 (Convention Center)**

**635**

### **Studying the Quadratic Function: A Historical and Technological Perspective**

(6–12) Session

The speakers will share excerpts from NCTM yearbooks and *Standards* documents that suggest studying the effect on the graph of a quadratic function when only one of its coefficients is changed. With the aim of helping teachers enhance their lessons, they will show how available technologies have been used to do these activities and enrich students' learning.

Thomas Edwards  
Wayne State University, Detroit, Michigan

S. Asli Ozgun-Koca  
Wayne State University, Detroit, Michigan

**107/108 (Convention Center)**

SATURDAY

9:30 A.M.–10:30 A.M.

**636**

### An Evaluation of a Hybrid Online Program for Algebra 1

(9–12) Session

This presentation will report on a multiyear, randomized-control trial of an Algebra 1 intervention that used online content with face-to-face instruction for teachers' professional development and students' learning. Participants will see videos of classroom practices and hear students' and teachers' reactions to the program.

Linda Cavalluzzo  
CNA Education, Alexandria, Virginia

JoAnn Mosier  
Collaborative for Teaching and Learning, Louisville, Kentucky

Roland O'Daniel  
Collaborative for Teaching and Learning, Louisville, Kentucky

**109/110 (Convention Center)**

**638**

### Algebra: Focus on Reasoning and Sense Making

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

NCTM's curriculum project for high school mathematics focuses on reasoning and sense making across the curriculum. This presentation will show participants ways to focus on reasoning and sense making in algebra. Participants will engage with examples and classroom vignettes from NCTM's *Reasoning and Sense Making in Algebra* document.

Karen Graham  
University of New Hampshire, Durham

Al Cuoco  
Center for Mathematics Education, Education Development Center, Newton, Massachusetts

Gwen Zimmermann  
Adlai Stevenson High School, Lincolnshire, Illinois

**140 (Convention Center)**

**639**

### Stop Teaching and Let Students Learn Geometry

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

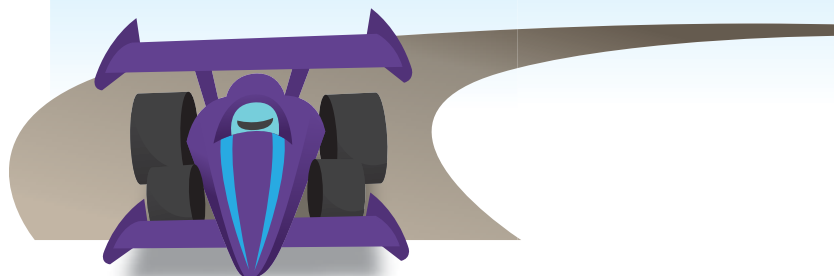
The speaker will describe an approach to teaching and learning geometry where students take a central role. The result prioritizes students' collaboration, promotes the value of reading and writing as components of learning, recognizes mathematical communication as multirepresentational, and sees real-world problems as geometric learning's product and process.

Michael J. Bosse  
East Carolina University, Greenville, North Carolina

**141/142 (Convention Center)**

SATURDAY

Visit [www.nctm.org](http://www.nctm.org)  
for lessons, activities,  
and teachers' resources!



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9:30 A.M.–10:30 A.M.

## 640

### **Preservice Math Courses: Concepts + Applications = Understanding, Less Anxiety**

(Higher Education, Preservice and In-Service) Session

Four years of experience with a college-level course, taking fundamental conceptual areas of mathematics and rich applications in both the arts and science, have demonstrated successful reduction of “math anxiety” and increased mathematical understanding. Participants will explore the successful applications, activities, and assignments from this course.

Barbara Biglan  
Chatham University, Pittsburgh, Pennsylvania

Martha E. Hildebrandt  
Chatham University, Pittsburgh, Pennsylvania

**125 (Convention Center)**

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10:30 A.M.–12:00 NOON

## 641

### **Beyond Basic Facts: Developing Relational Thinking Skills in Grades K–2**

(PreK–2) Gallery Workshop

Relational thinking can strengthen students’ mastery of the basic facts and their ability to compute with accuracy and efficiency. This workshop draws on the work of Carpenter, Franke, and Levi (2003) and explores the development of relational thinking in young children through video, students’ work, and hands-on activities.

Katherine A. Ariemma  
Boston College, Chestnut Hill, Massachusetts

**101/102 (Convention Center)**

## 642

### **Visualize It, Shape It, and Locate It**

(PreK–2) Gallery Workshop

Encouraging students to figure out how to visualize and understand shapes, and how to understand and follow directions, is important. This hands-on workshop, using concrete, visual materials (grids, 2-D and 3-D shapes, and feely bags), will motivate and engage students in learning about geometry. Participants will explore the development sequence of geometry.

Rhonda Horne  
Queensland Department of Education and Training,  
Brisbane, Queensland, Australia

Eva deVries  
Australian Catholic University, Brisbane, Queensland,  
Australia

**Sagamore Ballroom 1 (Convention Center)**

## 643

### **Seeds to the Table: Growing Green Gardening Goes High Tech**

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

This presentation engages participants in a Young Learners Classroom Garden project. The project involves hands-on activities using garden produce to connect measurement, literature, and SMART board technology. Participants will view and discuss video of students’ activities and receive graphic organizers for assessing the mathematics.

Lana B. Thomas  
University of Louisville, Kentucky

E. Todd Brown  
University of Louisville, Kentucky

Gina Kimmery  
Jefferson County Public Schools, Louisville, Kentucky

**Sagamore Ballroom 5 (Convention Center)**

SATURDAY



10:30 A.M.–12:00 NOON

**644**

### **Don't Be Obtuse! Games and Lessons for Building Mathematical Vocabulary**

(PreK–5) Gallery Workshop

By *square*, do we mean a shape or a number? Is *right* the term for an angle, a hand, or an answer? This presentation will show why your students struggle with vocabulary. Leave with a fistful of engaging, meaning-filled activities to help learners understand and use the powerful language of mathematics.

Carrie S. Cutler  
Consultant, Houston, Texas

**Wabash Ballroom 2 (Convention Center)**

**645**

### **Junior Rocket Design Agency (JRDA): An Integration of Science and Mathematics**

(3–5) Gallery Workshop

**Benjamin Banneker Association Presentation**

The JRDA of Indianapolis is a science-and-mathematics enrichment program. JRDA increases students' achievement in mathematics and science by using an integrated, role-playing-based curriculum that investigates rocketry. Participants will explore lessons in the rocketry curriculum.

Crystal Hill  
Indiana University Purdue University Indianapolis

Jomo Mutegi  
Indiana University Purdue University Indianapolis

**205/206 (Convention Center)**

**646**

### **Playing with Place Value**

(3–5) Gallery Workshop

The speakers will present place-value concepts that use games to teach, reinforce, and remediate students. These games offer fun ways to write numbers in expanded and standard form, order and compare whole and decimal numbers, and place digits strategically to develop a better understanding of place value through problem solving and mathematical reasoning.

Kathie O. Smart  
University of Louisiana at Monroe

Pamela D. Martin  
University of Louisiana at Monroe

**203/204 (Convention Center)**

**647**

### **Rotate, Reflect, Project, and Flatten: Transformers of the World, Unite!**

(3–8) Gallery Workshop

Let students engage with the 3-D world around them. The presenter has amassed many quick-to-learn, yet challenging, games and activities with language-free, visual clues that get all students excited about 3-D geometry. Students from diverse backgrounds, ages, and preparation will all get hooked. Come play and experience the challenge!

Polina Sabinin  
Teachers21, Wellesley, Massachusetts

**105/106 (Convention Center)**

**648**

### **Square or Rhombus? Helping Students Develop Relational Thinking through Geometry**

(3–8) Gallery Workshop

Children often lack understanding of how a square can also simultaneously be a rhombus and a rectangle. Come engage in activities tried and tested in upper elementary school classrooms to address common misconceptions with quadrilaterals. Participants will examine samples of students' work and receive a copy of the activities to use in their classrooms.

Dicky Ng  
Utah State University, Logan

Katie Anderson  
Alpine School District, American Fork, Utah

**124 (Convention Center)**

**649**

### **Touchable Mathematics with the 4D Frame**

(6–8) Gallery Workshop

A manipulative tool for enhancing students' mathematical imagination and creativity, the 4D Frame enables students to learn untouchable mathematical concepts as touchable mathematics. The presenters will show how they use the 4D for stimulating students' mathematical creativity by constructing Klein bottles.

Hogul Park  
4D Frame Co., Seoul, South Korea

Inchul Jung  
Korea University, Seoul, South Korea

Mangoo Park  
Seoul National University of Education, South Korea

**121/122 (Convention Center)**

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The newly released Common Core Standards were largely modeled after International Benchmarks, including the Singapore approach to teaching and learning mathematics. For more information and to see how our programs align with the new Common Core Standards, please visit [www.SingaporeMath.com](http://www.SingaporeMath.com).

10:30 A.M.–12:00 NOON

**650**

### Math and Music Connections Using Rational Numbers

(6–8) Gallery Workshop

A musician and mathematics educator will show participants how music can help teach math. Participants will learn musical notes and their values to create songs. This hook is sure to motivate! Followup activities using musical notes and pattern blocks will help them visualize fraction operations. Blackline masters will be provided.

Shelly Jones

Central Connecticut State University, New Britain

Dunn Pearson

Believe Music Works, Inc., Wayne, New Jersey

**126/127 (Convention Center)**

**651**

### Operations on Fractions Using NCTM Resources

(6–8) Gallery Workshop

Have you ever wondered about the math of changing gears on your bicycle? Gear ratios are just one application of operating on fractions that this workshop will explore. You will gain hands-on experience investigating several ways of making operations on fractions more engaging for students, by using applets, games, and writing prompts.

Sarah Marie DeLeeuw

National Council of Teachers of Mathematics, Reston, Virginia

**Sagamore Ballroom 3 (Convention Center)**

**652**

### Biggest, Smallest, Shortest, Tallest: Hands-On Geometric Design Tasks Using Calculus

(6–12) Gallery Workshop

Make the biggest cone fitting in a plastic ball with two halves. Create the smallest pyramid holding a cube. Design the shortest road joining four houses. Make triangles with sides 3, 4,  $x$ ; which has biggest area? These projects will energize your calculus students! Tested lesson plans from a course for middle and high school teachers will be included.

Patricia Baggett

New Mexico State University, Las Cruces

Andrzej Ehrenfeucht

University of Colorado at Boulder

**144/145 (Convention Center)**

**653**

### Exploring Finite Differences through Multiple Representations of Functions

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

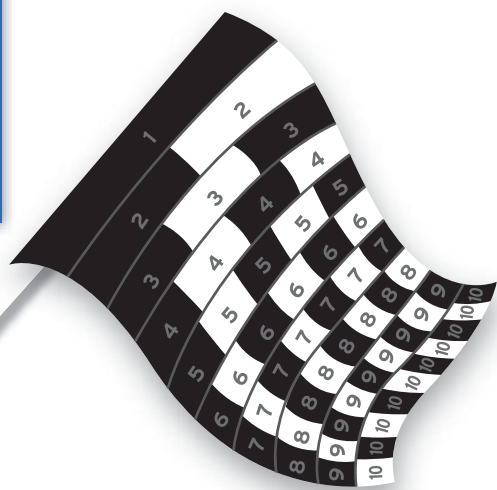
Explore finite differences to develop a deeper understanding of functions through hands-on activities and by using graphing technology. Determine characteristics that make functions linear, quadratic, or exponential on the basis of finite differences. Discuss pedagogical implications for including such activities in your classroom.

Anne Papakonstantinou

Rice University School Mathematics Project, Houston, Texas

**Sagamore Ballroom 7 (Convention Center)**

SATURDAY



## Future Annual Meetings

Philadelphia, Pennsylvania • April 25–28, 2012

Denver, Colorado • April 17–20, 2013

New Orleans, Louisiana • April 9–12, 2014

**654****Creating Inclusive Environments through Accessible Curriculum: Universal Design for Learning***(General Interest) Session*

Learn how to provide effective instruction and practice for all learners in inclusive settings using universally designed curriculum that incorporates process, content, product differentiation, learning supports, and task modifications. The speakers will illustrate the use of universally designed instruction, practice, and assessment. Classroom-ready resources will be disseminated.

Janet B. Andreasen  
University of Central Florida, Orlando

Jessica Hunt  
University of Central Florida, Orlando

Carrie Straub  
University of Central Florida, Orlando

**Wabash Ballroom 3 (Convention Center)****655****Learning English through Mathematics: A Successful Model for All Students***(General Interest) Session***TODOS: Mathematics for ALL Presentation**

A university professor and a high school teacher will present a research-based teaching model that integrates English with mathematics concepts that English language learner students already know. They will use a ninth-grade algebra class as an example, but the model is universal and interdisciplinary; holds for different types of mathematics, at various grade levels, with all students.

Joyce F. Fischer  
Texas State University—San Marcos

Robert Perez  
Hanna High School, Brownsville, Texas

**111/112 (Convention Center)****656****Math Goggles: Discovering Grades Pre-K–2 Mathematics in the Visual Arts***(PreK–2) Session*

Explore Matisse's patterns, Arp's chance collages, Mondrian's quadrilaterals, Kandinsky's circles, and other mathematical concepts in works by Lichtenstein, van Gogh, Dali, and more. Discover and connect children's literature that features the visual arts to mathematical concepts. This presentation will highlight the benefits of an arts-infused mathematics curriculum.

Robin A. Ward  
Rice University School Mathematics Project, Houston, Texas

**Sagamore Ballroom 6 (Convention Center)****656.1****Integrating Algebraic Thinking into Your Grades K–2 Math Classroom***(PreK–2) Session*

Come learn how to teach young children about equality and conjectures through a variety of classroom experiences. See how easily algebraic thinking can be blended into your daily math lessons.

Deborah Gordon  
Madison School District, Phoenix, Arizona

**123 (Convention Center)****657****Designing and Implementing Assessment Tasks and Interviews***(PreK–5) Session*

Interviews and problem-solving tasks are two ways to assess students' mathematical concepts and processes. What questions do you ask? What does the student's response tell you? How do you keep track of students' progress? These questions will be the focus for the presentation. Participants will create an assessment task and evaluate samples of students' work.

K. Beth Larner  
Orchard School, Indianapolis, Indiana

**143 (Convention Center)**



11:00 A.M.–12:00 NOON

**658**

### Using Language to Teach Operation Concepts and Number Facts

(PreK–5) Session

Young children possess a significant amount of language about mathematics. You can use this language as the starting point for the ideas and connections that are important for concepts and facts. This presentation will show how to use language experiences to generate and build these ideas.

Calvin Irons  
Queensland University of Technology, Brisbane, Australia

**125 (Convention Center)**

**659**

### Using Unique and Unusual Materials to Teach Geometry

(3–5) Session

Benjamin Banneker Association Presentation

The presentation will discuss materials such as literature, Post-It notes, and so on that one can use to teach shapes and transformations. Comments will be shared from in-service and preservice teachers.

Carolyn L. Pinchback  
University of Central Arkansas, Conway

**120 (Convention Center)**

**660**

### Using Exploration and Questioning to Help Students Understand Equivalent Fractions

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

After exploring an activity designed to help students notice patterns in equivalent fractions using multiple representations, participants will discuss how to ask questions to help students formalize the patterns they notice. The speaker will discuss examples of students' work from the original activity and from a similar activity later in the unit.

Pamela J. Wells  
Grand Valley State University, Allendale, Michigan

**128 (Convention Center)**

**661**

### Manipulatives, Real and Virtual: Making the Twenty-first-Century Classroom Connection

(3–8) Session

Technology provides a wide range of available resources that don't take the place of traditional manipulatives. This activity-based presentation will use virtual manipulatives with interactive whiteboard technology, along with the tactile experiences of hands-on manipulatives. Participants will discover how to integrate activities to build synergy with these instructional tools. Come join the fun!

John F. Thomson  
JFT Consulting, Rochester, New York

**103/104 (Convention Center)**

**662**

### Successful Hands-On Math Investigations

(3–8) Session

Do your students need some hands-on activities to help develop their mathematical concepts and actively engage them in learning new material? Discover the benefits of using manipulatives in your class as a tool to help students understand math better as well as some ways to use a variety of manipulatives.

Kevin Dykema  
Mattawan Middle School, Michigan

**207 (Convention Center)**

**663**

### A Math-History Quest; A Project Combining Math and History

(6–8) Session

Help your middle school students think and work outside the box! The speaker will describe a quest she created for her middle school students using puzzles and codes. She will show how she helped her students use deductive and logical reasoning, Internet research, and problem-solving skills to uncover a famous mathematician. She will share various resources.

Dea M. Jones  
Summit Parkway Middle School, Columbia, South Carolina

**140 (Convention Center)**

# Setting the pace for excellence in mathematics instruction

## Math Solutions Sessions

### THURSDAY, APRIL 14

**Folding, Cutting, Creating: How Geometry Shapes Up**

**Amy Mayfield and Lisa Rogers**, Math Solutions Education Specialists  
8:30 A.M.–10:00 A.M.

**Tools for Building Conceptual Understanding in Geometry**

**Genni Steele and Lu Ann Weynand**, Math Solutions Education Specialists  
9:30 A.M.–10:30 A.M.

**Supporting Students' Fraction Sense: What, Why, and How?**

**Julie McNamara and Meghan Shaughnessy**, Math Solutions Authors and Education Specialists  
10:30 A.M.–12:00 P.M.

**Financial Literacy: Starting Early with Young Children**

**Jane Crawford**, Math Solutions Author  
11:00 A.M.–12:00 P.M.

### FRIDAY, APRIL 15

**Mathematical Players in the Preschool Classroom**

**Brenda Mercado and Ann Sanchez**, Math Solutions Authors  
11:00 A.M.–12:00 P.M.

**No More Leftovers—Making Democracy a Reality in Schools**

**Cathy Seeley**, Math Solutions Author  
11:00 A.M.–12:00 P.M.

### SATURDAY, APRIL 16

**Formative Assessment in the Life of a Busy Teacher**

**Mari Muri and Jeane Joyner**, Math Solutions Authors  
8:00 A.M.–9:00 A.M.

**Using Number Talks to Build Mental Math and Computation Strategies**

**Sherry Parrish**, Math Solutions Author  
8:00 A.M.–9:00 A.M.

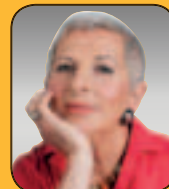
**Shaping Up in Geometry**

**Lisa Rogers and Amy Mayfield**, Math Solutions Education Specialists  
8:30 A.M.–10:00 A.M.

## Assessing Students' Numerical Understanding *and* Skills, Grades K–6

**Marilyn Burns**  
Math Solutions Founder

**Thursday, April 14**  
9:30 A.M.–10:30 A.M.  
Hall F



## Get your students talking about math!

Come by booth 1534 to learn about **Math Talks™**.

Demonstrations every hour on the hour.

## ★ Exhibitor Workshop

**How to Assess While Teaching Math: An INFORMative Assessment Perspective**

**Dana Islas, Mari Muri, and Jeane Joyner**  
Math Solutions Authors

**Thursday, April 14 • 4:00 P.M.–5:00 P.M.**  
Room 116, Convention Center

## Book Signing

Math Solutions  
Booth 1534

**Mari Muri and Jeane M. Joyner** will sign their book *INFORMative Assessment: Formative Assessment to Improve Math Achievement, Grades K–6*

**Saturday, April 16 • 9:30 A.M.–10:30 A.M.**

## Author Meet and Greet

Meet Math Solutions authors at booth 1534.

**Thursday, April 14 • 1:30 P.M.–2:30 P.M.**

## Giveaway, Every Day

Win an Amazon Kindle!

We'll also be giving away 3 copies of new books from Math Solutions each exhibit day at 12:00 P.M. at booth 1534!



**Math Solutions.**

FOUNDED BY MARILYN BURNS

11:00 A.M.–12:00 NOON

**664**

### **Steers Need Hay for Winter: Engaging Students with Engaging Problems**

(6–8) Session

Attendees will explore their school and personal lives for engaging mathematics problems with high levels of cognitive demand. The speakers will share examples of engaging, rigorous problems, such as Steers Need Hay for Winter, and discuss the successes and challenges faced by students while completing this problem.

Paula L. Keesling  
Nettle Creek School Corporation, Hagerstown, Indiana

Annette Ricks Leitze  
Ball State University, Muncie, Indiana

**109/110 (Convention Center)**

**665**

### **I Believe: Common Myths about Learning Mathematics**

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

“If you can’t work a problem in five minutes, you might as well give up.” “One must learn math from an expert.” These and other common myths about mathematics can affect how much your students learn. This presentation will discuss strategies for changing those beliefs and increasing success for all your students.

Rita Barger  
University of Missouri—Kansas City

**Wabash Ballroom 1 (Convention Center)**

**666**

### **Becoming a PRIME Teacher for Assessment!**

(6–12) Session

Assessment plays an indispensable role in a teachers’ daily work. Used with skill, assessment can motivate the unmotivated, restore the desire to learn, and encourage students to keep learning. And, it can create, not simply measure, increased achievement. This highly motivational presentation will explore how to write high-quality exams and use those exams to help students learn from their mistakes.

Timothy Kanold  
E<sup>2</sup>-PLC Learning, Chicago, Illinois

**Sagamore Ballroom 2 (Convention Center)**

**667**

### **Technology as a Lever for Reasoning and Sense Making in Mathematics**

(6–12) Session

Technology—useful computational workhorse or black box that obscures the mathematics? Neither view captures technology’s real potential as a powerful lever for students’ reasoning and sense making that provides settings for good questions from teachers. The speakers will draw on several examples from the new NCTM reasoning-and-sense-making volume on technology to illustrate.

Thomas P. Dick  
Oregon State University, Corvallis

Karen F. Hollebrands  
North Carolina State University, Raleigh

**500 Ballroom (Convention Center)**

**668**

### **Math and Science @ Work from Launch to Landing**

(9–12) Session

Teachers will be introduced to real application problems developed by the National Aeronautics and Space Administration to help calculus students develop and reinforce knowledge and skills necessary as they prepare for college-level work. These skills will also help students enter an increasingly competitive technological workforce.

Natalee Lloyd  
NASA Johnson Space Center, Houston, Texas

Monica Trevathan  
NASA Johnson Space Center, Houston, Texas

**141/142 (Convention Center)**

**669**

### **Communicating about Geometry in a Web 2.0 World**

(9–12, Higher Education) Session

Facebook and other Web 2.0 tools give students and teachers a new, exciting way to communicate about geometry. Learn how the speaker uses Facebook groups to get students sharing ideas about quadrilaterals, right triangles, circles, surface area, and volume. She will also share creative projects using free Web 2.0 tools.

S. Leigh Nataro  
Moravian Academy, Bethlehem, Pennsylvania

**107/108 (Convention Center)**

11:00 A.M.–12:00 NOON

**670**

### Discovering Errors and Issues in Written Work in the Classroom

(9–12, Higher Education) Session

Many college algebra and trigonometry instructors still rely exclusively on their students' written work to assess competency and determine grades. Given the pace of such courses, those students need almost daily feedback about their written work's acceptability. The speaker will present a method of providing this feedback in the classroom.

Patrick A. Frey  
Indiana University Purdue University Indianapolis

**Sagamore Ballroom 4 (Convention Center)**

**671**

### Problem-Based Learning (PBL): A Transformed Perspective for Standards-Based Geometry

(9–12, Higher Education) Session

Revamp your geometry teaching with NCTM standards of problem-solving, communication, reasoning, connections, and equity in mind. A PBL approach can facilitate learning and empower your students to transform their perspective of geometry. Explore one school's four year journey of curricular reform and technology integration.

Sunshine Greene  
Emma Willard School, Troy, New York

Carmel Schettino  
Emma Willard School, Troy, New York

**201/202 (Convention Center)**

12:30 P.M.–1:30 P.M.

**672**



### The Art of Geometry

Closing Session by Bathsheba Grossman

Remarks by NCTM President J. Michael Shaughnessy

This talk will describe the emergence of a geometrical artist and the development, themes, and techniques of the speaker's sculpture, in context with the vital, growing field of mathematical art. Now as never before in history, mathematical education at all levels can lead toward a lifetime of aesthetic appreciation and discovery.

A geometrical sculptor in the medium of 3D printing, Grossman describes herself as an artist, an earnest but limited math student, a business owner, a hacker of manufacturing processes, and an explorer in 3D space. She worked as a scientific programmer, college teacher, typist, database administrator and Web designer until the synergy of online marketing and 3D printing allowed her to turn her talents into a business. Now she works with freeform fabrication technologies and 3D laser etching in glass, creating scientific data, mathematical models, and her own designs as physical objects.

Bathsheba Grossman  
Bathsheba Sculpture LLC, Santa Cruz, California

**Hall F (Convention Center)**

SATURDAY



# NCTM 2011 REGIONAL CONFERENCES & EXPOSITIONS

ATLANTIC CITY, NEW JERSEY  
October 19–21, 2011

ST. LOUIS, MISSOURI  
October 26–28, 2011

ALBUQUERQUE, NEW MEXICO  
November 2–4, 2011

Join us for in-depth professional development and valuable networking opportunities. You'll learn from some of the best mathematics educators in the field and advance your knowledge.

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- **Find solutions** to today's teaching challenges, and
- **Discover new ideas** and strategies to use in the classroom.

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$$Lift = V \cdot \left( \frac{P}{2.87} \right) \cdot \left( \left( \frac{1}{T_{amb}} \right) - \left( \frac{1}{T_{env}} \right) \right)$$

$$y = A \cdot \sin(nt + \theta)$$

$$\tan(x) = \frac{h}{d}$$





# Notes

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GENERAL INFO



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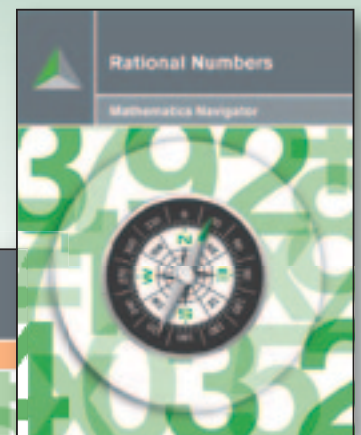
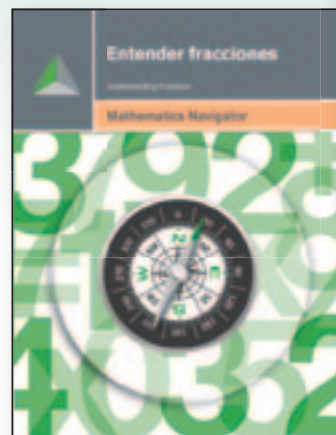


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Correct Misconceptions.



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GENERAL INFO

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# General Information

## Registration and Access to Presentations

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

By registering for the 2011 NCTM Annual Meeting and Exposition, participants grant NCTM the right to use, in promotional materials, their likeness or voice as recorded on, or transferred to, videotape, film, slides, audiotapes, or other media.

## Research Pre-session

The Research Pre-session, jointly sponsored by the NCTM Research Committee and the Special Interest Group on Research in Mathematics Education of the American Educational Research Association, will be held Monday–Wednesday, April 11–13, in the Indiana Convention Center. The Research Pre-session Registration Area is in the Serpentine Lobby (second floor) of the convention center.

The Opening Session will be held at 7:00 p.m. on Monday, April 11. Concurrent sessions will begin at 8:30 a.m. on Tuesday and Wednesday. There is no additional fee for on-site registration for the Research Pre-session. Registered NCTM Annual Meeting attendees may attend Wednesday's Research Pre-session presentations at no extra charge with their badge.

## For Your Child's Safety

Due to the size and nature of the 2011 NCTM Annual Meeting and Exposition, this event is not the appropriate setting for children under 16 years of age. Your hotel concierge will be able to recommend activities for children while you are attending the conference. We appreciate your understanding and cooperation. Children 16 years and over will need to register as nonteaching guests. To register a nonteaching guest, stop by the Registration Area at the Indiana Convention Center.

## Member Showcase

Looking for professional resources to help you overcome the challenges you face on a daily basis? Then stop by the NCTM Member Showcase located outside Exhibit Hall D of the Convention Center.

We'll help you learn more about how your NCTM membership provides you access to teacher resources, including lessons, teaching tips and strategies, research findings, and more. You can also pick up classroom-ready activity packets, sample journals, and other materials to take back to your classroom. Plus, the Member Showcase will hold a daily drawing; make sure you stop by to learn more!

Whether you are a new member, a current member, or thinking of joining, the NCTM Member Showcase is here to help make your job easier!

Renew your membership, or join NCTM for the first time onsite, and you will receive a **free** 2012 NCTM Annual Meeting t-shirt! Supplies are limited.

Also at the Member Showcase, members of the journal staff and the editorial panels will hold brief discussion groups on such topics as "Write for the Journal: It's Not as Scary as You Think," "Become a

Reviewer and Beef Up Your Knowledge," and "Using Literature in Your Math Class." Be sure to stop by to chat or pick up a schedule, which will also be available in the onsite Daily News. Stop by the Member Showcase in the lobby outside of Exhibit Hall D at the Indiana Convention Center.

## Bookstore

Save 25 percent off the list price on all purchases made at the onsite NCTM Bookstore, located in the Exhibit Hall at the Indiana Convention Center. View first-hand all the publications that NCTM has to offer. You will also find a variety of specialty products that you can use as gifts, prizes, and incentives to spread the word about the importance of math. 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:** In order to be considered exempt from sales tax in the NCTM Bookstore, you must provide a copy of an **Indiana tax exemption certificate**, issued by the state, at the time of purchase. NCTM is required by law to keep a copy of the certificate, and we will be unable to return it to you. In order to qualify, payment must be made with a purchase order, check, or credit card from the school to which the Indiana Exemption Certificate is issued. Personal checks, personal credit cards, and cash cannot be accepted in conjunction with tax exemption certificates.

The NCTM Bookstore is not equipped to handle shipping from the meeting site. A Business Center located at each meeting facility is ready to assist you with your shipping needs.

## Internet Station

Stop by the NCTM Internet Station to check email or surf the Web. The Internet Station is located in the lobby area outside of Exhibit Hall D (near room 110) at the Indiana Convention Center. Wireless connections are available for a fee.

## Calculation Nation<sup>®</sup>

Calculation Nation, part of NCTM's Illuminations Project, offers online math strategy games that can be played individually or against an online opponent. Come try out a game and learn more about Illuminations and other online resources from NCTM. Find Calculation Nation in the Exhibit Hall at booth #422.

## Shuttle Bus Service

Attendees who reserved their hotel room through NCTM's official housing company will receive complimentary shuttle bus service from hotels in the NCTM housing block to the Indiana Convention Center. Some of the hotels are within walking distance of the convention center and will not require shuttle bus service. Routes and schedules will be posted in your hotel lobby. The schedule will be followed as closely as possible. For a shuttle bus schedule or if you have questions, please visit the shuttle desk located at the shuttle area at the Maryland Street entrance.

## Information Booth

The NCTM Information Booth will be in the lobby area of the Indiana Convention Center, outside Hall D. Local staff from Indianapolis

# General Information

will be on hand to answer any questions you may have. They will also assist you with directions and local information, from transportation and historical sites to shopping and entertainment.

## Lost-and-Found

Items for lost-and-found may be retrieved or turned in at the NCTM Information Booth. At the end of the conference, all lost-and-found items brought to the Information Booth will be turned over to Convention Center Security.

## Restaurant Reservations

Explore the fabulous restaurants of Indianapolis! Stop by the convention center's Information Desk located in the lobby at the Indiana Convention Center. The friendly staff will be available to offer recommendations and make reservations.

## Bag and Coat Check

A bag and coat check is available for you to store your belongings during the conference hours for a nominal charge of \$3.00 per item. You can check your items at the bag check located in the Indiana Convention Center Thursday through Saturday during the program hours. All items are to be picked up each day by closing time; items may not be left overnight.

## First Aid Station

A first-aid station will be staffed at the Indiana Convention Center during the NCTM program. If you need medical services while in Indianapolis, please check with the hotel concierge for the closest medical facilities. As with any medical emergency, call 911 without hesitation.

## NCTM Clear Air Act

In accordance with a resolution of the 1978 Delegate Assembly, smoking is permitted only in designated areas.

## Your Opinion Counts!

Thank you for attending the NCTM 2011 Annual Meeting and Exposition. In the days following the Annual Meeting, you will receive an e-mail asking for an evaluation of your meeting experience. Please take a moment to complete the conference attendee survey. Your feedback is important to us and will be instrumental in the future Annual Meeting and Exposition planning process.

# Exhibit Hall Information

## Exhibits

Be sure to make time in your schedule to visit the NCTM Exhibit Hall. The hours allow ample opportunity to explore, try out, and purchase products and services for use in your classroom or to help you meet your career goals. You'll also have the opportunity to meet the people who produce these products, get fresh ideas, and see demonstrations of how products work. Be sure to check out the list of exhibits and a map of the Exhibit Hall on pages 192–207.

## Exhibitor Workshops

Do you want more in-depth and personal interaction with exhibitors? If you do, plan to attend the Exhibitor Workshops. These workshops are held on Thursday, Friday and Saturday and offer a wide variety of topics. See the program for Exhibitor Workshop offerings, indicated by **ew** before the presentation number.

## Sponsors

A special thank you goes to our sponsors for generously supporting NCTM by providing products and services to enhance your conference experience. Please stop by to thank the following sponsors when you are in the Exhibit Hall.

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- MIND Research Institute
- Texas Instruments
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# Affiliate Membership

## Join an NCTM Affiliate Today!

Once you have joined NCTM, membership in an NCTM Affiliate is a terrific way to round out your professional involvement. Affiliates offer you an opportunity to link with teachers in your state, region, or city for support, professional development opportunities, community outreach, political advocacy, and information sharing.

The host Affiliates for the NCTM 2011 Annual Meeting and Exposition and the Affiliates-at-Large are listed to the right. To join one of these groups, e-mail the Affiliate contact for membership information.

NCTM has more than 230 Affiliates throughout the U.S. and Canada. For a list of all organizations affiliated with NCTM and information on how to join, please see the Affiliate Directory on the NCTM Web site at [www.nctm.org/affiliates](http://www.nctm.org/affiliates).

## AFFILIATE INFORMATION

### Host Group

#### **Indiana Council of Teachers of Mathematics**

Jolene Swinehart, [joleneswinehart@comcast.net](mailto:joleneswinehart@comcast.net)

### Affiliates-at-Large

#### **Adult Numeracy Network**

Margaret Rogers, [marogers-princess@sbcglobal.net](mailto:marogers-princess@sbcglobal.net)

#### **Association of Mathematics Teacher Educators**

Sandra Cooper, [sandra\\_cooper@baylor.edu](mailto:sandra_cooper@baylor.edu)

#### **Benjamin Banneker Association, Inc.**

Roni Ellington, [roni.ellington@morgan.edu](mailto:roni.ellington@morgan.edu)

#### **Council for Technology in Mathematics Education**

Stephanie Cooperman, [scooperman@chatham-nj.org](mailto:scooperman@chatham-nj.org)

#### **North American Study Group on Ethnomathematics**

Bliidi Stemm, [catbss@hofstra.edu](mailto:catbss@hofstra.edu)

#### **National Council of Supervisors of Mathematics**

Terri Belcher, [tbelcher@berkeley.edu](mailto:tbelcher@berkeley.edu)

#### **Society of Elementary Presidential Awardees**

Martha Short, [mshort@idd.net](mailto:mshort@idd.net)

#### **TODOS: Mathematics for ALL**

Maria Torres, [metorres1@aol.com](mailto:metorres1@aol.com)

#### **Women and Mathematics Education**

Dorothy Buerk, [buerk@ithaca.edu](mailto:buerk@ithaca.edu)

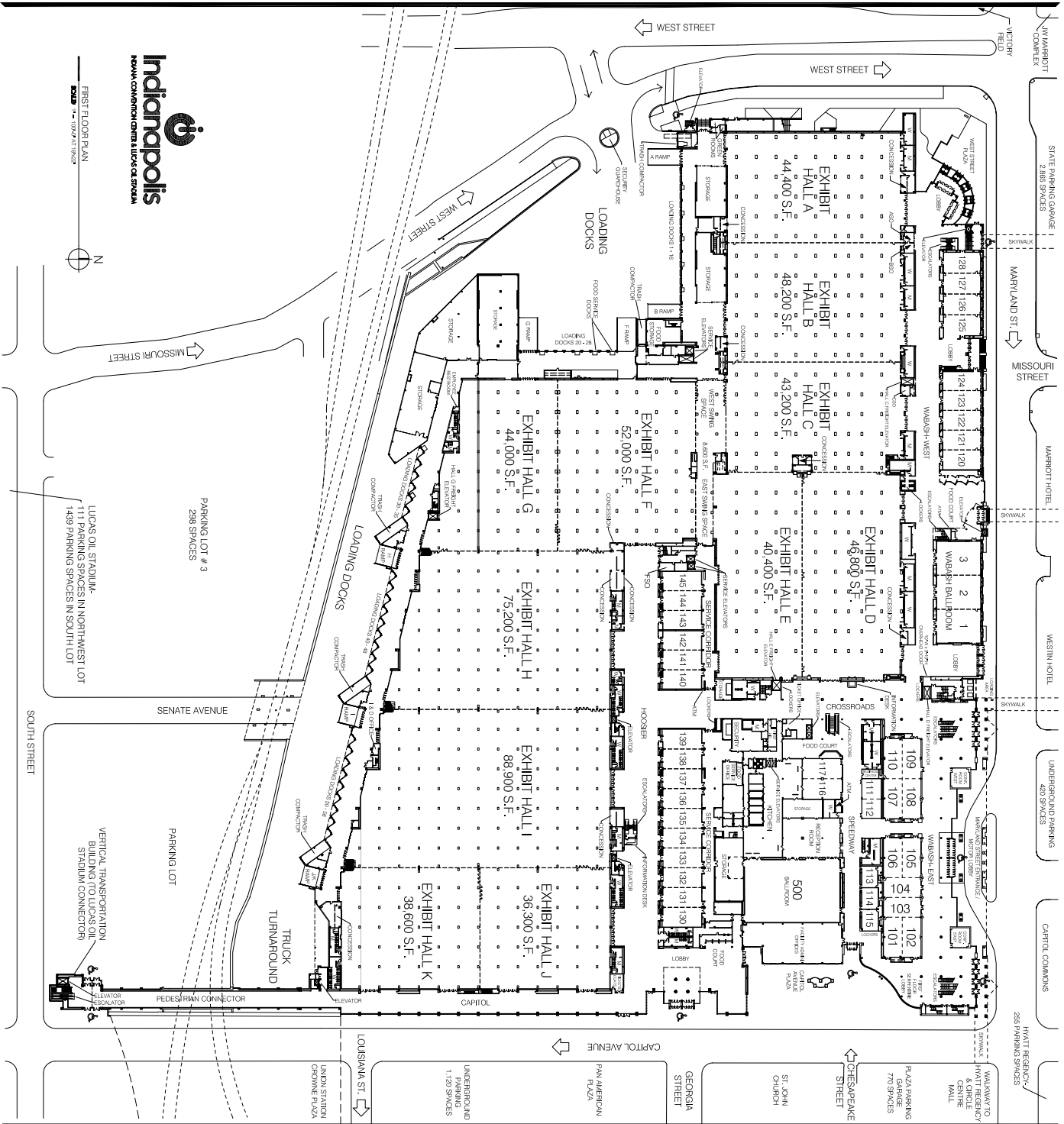


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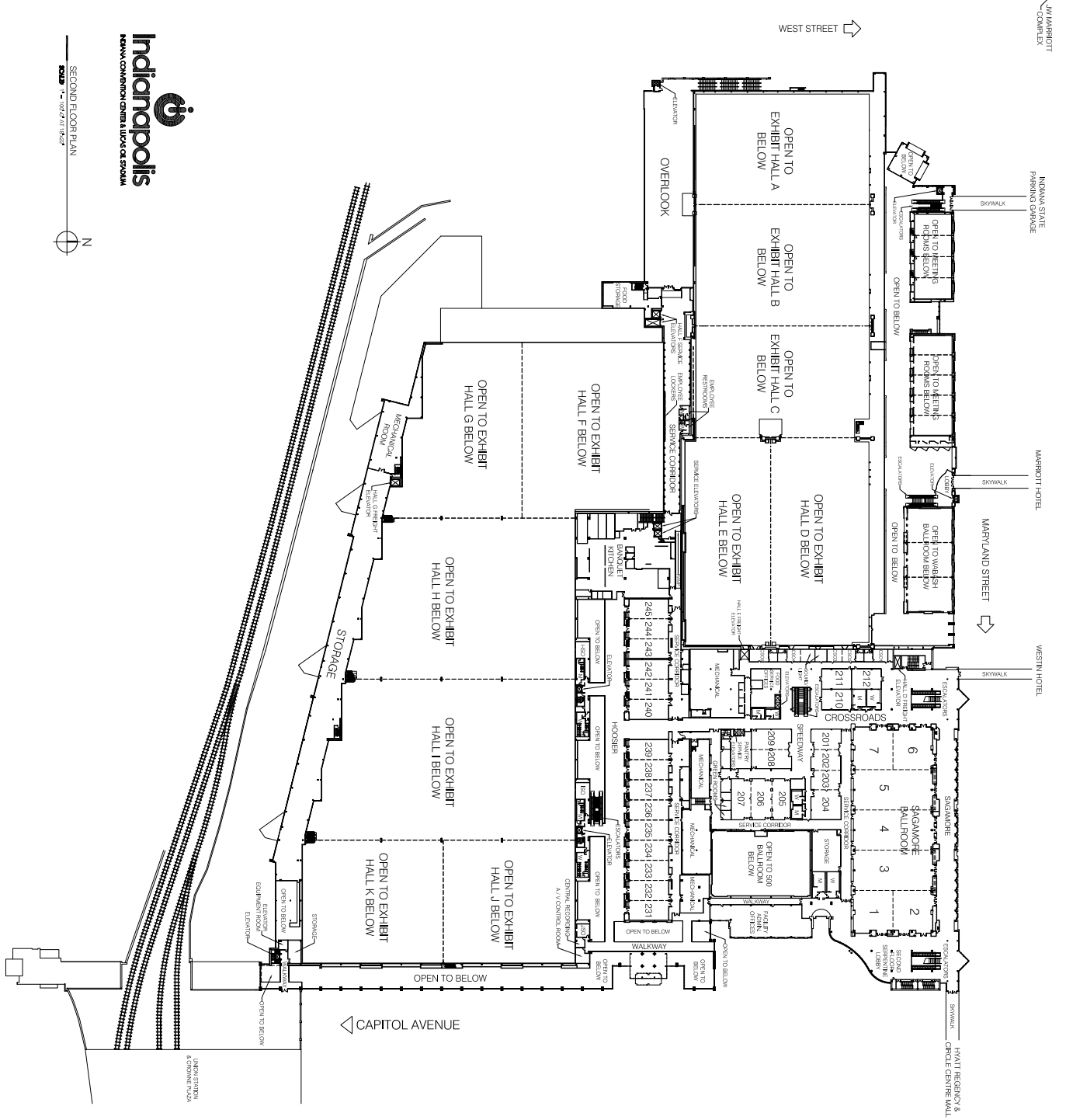


# Floor Plans

## Indiana Convention Center, First Floor



## Indiana Convention Center, Second Floor



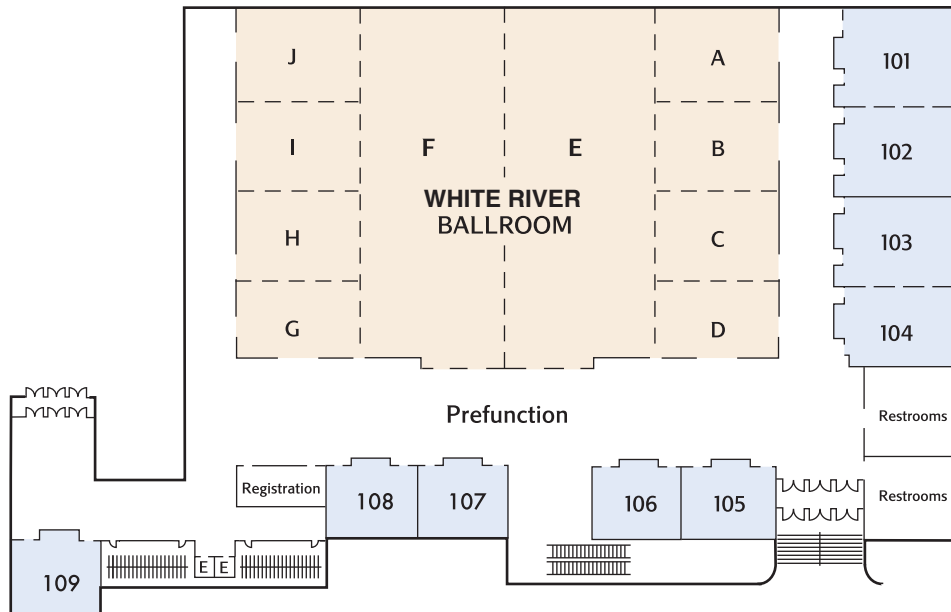
SECOND FLOOR PLAN  
SCALE: 1/8" = 1'-0"



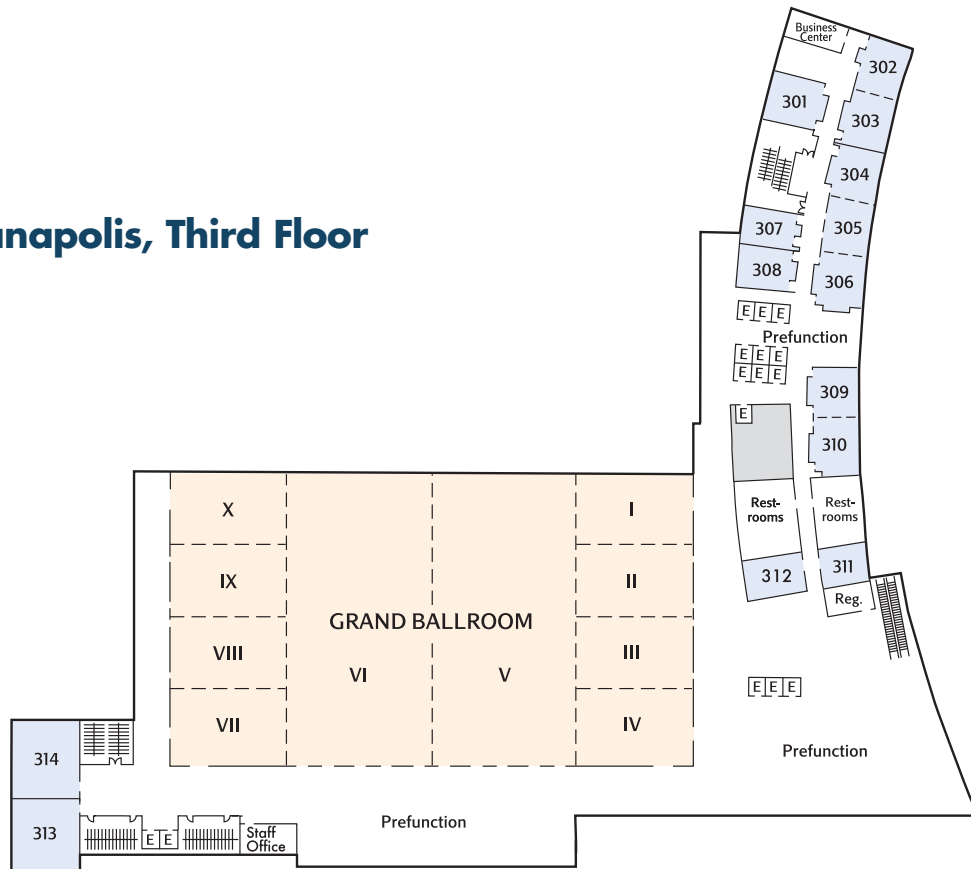


# Floor Plans

## J W Marriott Indianapolis, First Floor



## J W Marriott Indianapolis, Third Floor



NCTM 2012

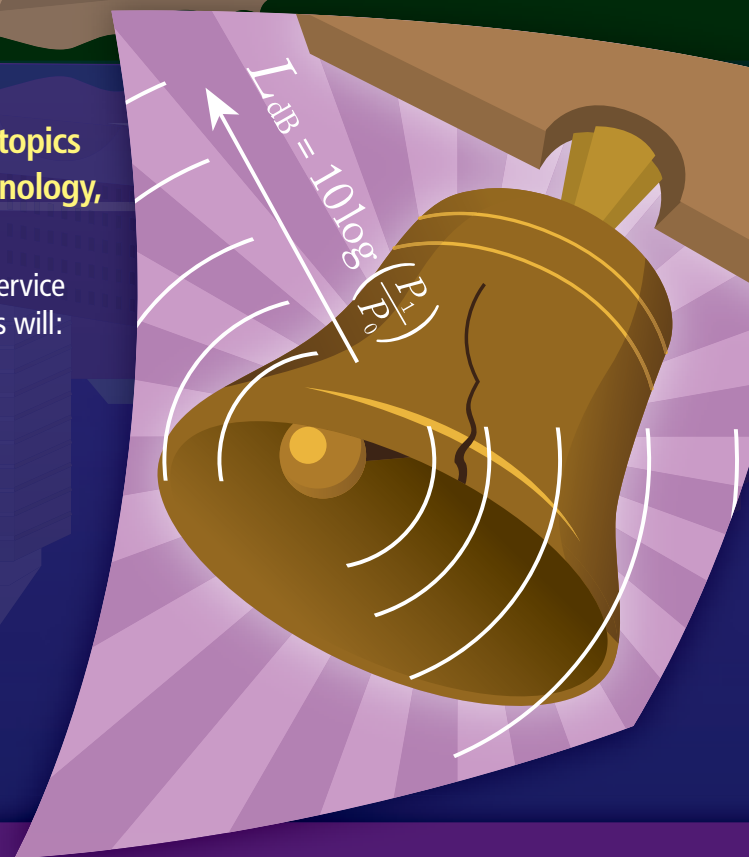
PHILADELPHIA, PA | APRIL 25–28, 2012

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Hear the latest from math education experts on hot topics such as **Intervention**, **Differentiated Instruction**, **Technology**, **Common Core State Standards**, and much more.

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- Explore different learning styles and **intervention** strategies.
- Refine your **assessment** techniques.
- Discover new ways to use **technology** in your classroom.
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Visit [www.nctm.org/meetings](http://www.nctm.org/meetings) for up-to-date information.



# Hotel Information

## Indianapolis Hotels

Hotel	Single	Double	Double/Double	Triple	Quad	
1 *JW Marriott; Headquarters Hotel	\$190	\$215	\$215	\$229	\$254	
2 *Indianapolis Marriott Downtown, Headquarters Hotel	\$183	\$203	\$203	\$223	\$223	
3 Canterbury Hotel	\$168	\$188	n/a	n/a	n/a	
4 Comfort Suites City Center	\$128	\$128	\$128	\$138	\$148	
5 Conrad Hotel	\$219	\$219	\$249	\$254	\$279	
6 Courtyard Marriott at the Capitol	\$151	\$174	\$174	\$196	\$217	
7 Courtyard by Marriott Downtown	\$162	\$162	\$162	\$162	\$162	
8 Crowne Plaza Hotel Union Station	\$164	\$164	\$164	\$174	\$184	
9 Embassy Suites Downtown	\$172	\$182	\$182	\$182	\$182	
10 Fairfield Inn & Suites	\$147	\$147	\$147	\$167	\$167	
11 Hampton Inn Downtown	\$159	\$159	\$159	\$159	\$159	
12 Hilton Garden Inn Downtown	\$169	\$169	\$169	\$179	\$179	
13 Hilton Indianapolis Hilton suite rates:	\$167 \$217	\$167 \$217	\$167 \$217	\$177 \$227	\$187 \$237	
14 Holiday Inn Express Hotel & Suites	\$128	\$128	\$128	\$138	\$148	
15 Homewood Suites by Hilton	\$172	\$172	\$172	\$172	\$172	
16 *Hyatt Regency	\$173	\$173	\$173	\$193	\$193	
17 Omni Severin Hotel	\$166	\$176	\$176	\$186	\$196	
18 Residence Inn Downtown on the Canal	\$165	\$185	\$185	\$205	\$225	
19 Sheraton City Centre	\$179	\$179	\$179	\$194	\$194	
20 Springhill Suites	\$155	\$155	\$155	\$175	\$175	
21 Staybridge Suites Indianapolis City Centre	\$138	\$138	\$138	\$148	\$158	
22 Westin Indianapolis	\$183	\$183	\$183	\$203	\$203	
A *Fairfield Inn & Suites East	\$99	\$99	\$99	\$99	\$99	
B *Indianapolis Marriott East Hotel	\$119	\$119	\$119	\$119	\$119	
C *La Quinta Inn Indianapolis East	\$74	\$74	\$74	\$74	\$74	

Rates do not include current tax of 17%; subject to change.

\* No NCTM shuttle service available.

Hotels identified with a  are within walking distance of the convention center and NCTM shuttle service will not be available. Hotels identified with a  are considered driving hotels and NCTM shuttle service will not be available.

Visit [www.nctm.org/indy](http://www.nctm.org/indy) for a shuttle schedule.





# Officers and Committees

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The National Council of Teachers of Mathematics is a public voice of mathematics education, supporting teachers to ensure equitable mathematics learning of the highest quality for all students through vision, leadership, professional development, and research. With nearly 90,000 members and more than 230 Affiliates, NCTM is the world's largest organization dedicated to improving mathematics education in prekindergarten through grade 12. The Council's *Principles and Standards for School Mathematics* includes guidelines for excellence in mathematics education and issues a call for all students to engage in more challenging mathematics. NCTM is dedicated to ongoing dialogue and constructive discussion with all stakeholders about what is best for our nation's students.

To learn more about NCTM products or services, including membership benefits and opportunities, visit [www.nctm.org](http://www.nctm.org), email [nctm@nctm.org](mailto:nctm@nctm.org), or call (800) 235-7566.



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TEACHERS OF MATHEMATICS

*This certificate is presented to*

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*in recognition of attendance and participation at the  
NCTM 2011 Annual Meeting and Exposition*

*Indianapolis, Indiana • April 13–16, 2011*

*J. Michael Shaughnessy*

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J. Michael Shaughnessy  
President, NCTM

**Name of Provider:** National Council of Teachers of Mathematics

**Educator's Name:** \_\_\_\_\_

**Description of Professional Development Activity:** This is a three-day annual conference sponsored by the National Council of Teachers of Mathematics. Hundreds of presentations are offered for teachers of prekindergarten through college. Topics range from administration to geometry, precalculus to statistics.

*Note: PD time earned should be the time actually spent in sessions and/or workshops.*

Date	Session #	Session Title	Presenter(s) Name(s)	Start/End Time	PD Time earned
<b>TOTAL Professional Development Hours Accrued:</b>					

*I certify that the above named educator accrued the indicated number of Professional Development hours.*

Kichoon Yang  
Executive Director, NCTM

J. Michael Shaughnessy  
President, NCTM

*Please check with your state education agency and local administration to determine if these conference hours can be used for professional development credits.*

# NCTM Individual Membership Application

IN11P

Visit [www.nctm.org/membership](http://www.nctm.org/membership) to learn more and join!

## CONTACT INFORMATION (PLEASE PRINT) All fields marked with an \* are required for processing

First Name\* \_\_\_\_\_ Last Name\* \_\_\_\_\_

Please check ONE box for preferred mailing address, but please complete both columns for our records:

**Institutional Address**

**Home Address**

Institution\* \_\_\_\_\_

Address\* \_\_\_\_\_

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City\* \_\_\_\_\_

City\* \_\_\_\_\_

State/Prov\* \_\_\_\_\_ ZIP/PC\* \_\_\_\_\_

State/Prov\* \_\_\_\_\_ ZIP/PC\* \_\_\_\_\_

Country\* \_\_\_\_\_

Country\* \_\_\_\_\_

Phone\* \_\_\_\_\_

Phone\* \_\_\_\_\_

Primary E-mail\* \_\_\_\_\_

Your grade level interest (check all that apply)\*:  PreK-2  3-5  6-8  9-12  Higher Education

I was referred by an NCTM Member: \_\_\_\_\_ Member ID: \_\_\_\_\_

Check here to remove your name from rental lists (companies renting lists must obtain approval from NCTM before using lists).

**Standing Yearbook Order Plan:** Check this box to receive each NCTM Yearbook as it becomes available. Yearbooks may be returned in resalable condition within 30 days and you may cancel your plan at any time.

NOTE: Membership pricing valid through May 31, 2011. Visit [www.nctm.org/membership](http://www.nctm.org/membership) for up-to-date pricing.

### OPTION 1

#### Full Individual Membership

Includes a print subscription to one NCTM journal (*print version includes online access*). Select **ONE** journal below:

- \$78**  **Teaching Children Mathematics** (PreK-6)  
 **Mathematics Teaching in the Middle School** (5-9)  
 **Mathematics Teacher** (8-14)

**\$105**  **Journal for Research in Mathematics Education**

#### Additional Print Journals:

May be selected to enhance your membership for as little as \$33 (*print version includes online access*).

- \$33 Teaching Children Mathematics** (PreK-6)  
 **\$33 Mathematics Teaching in the Middle School** (5-9)  
 **\$33 Mathematics Teacher** (8-14)  
 **\$60 Journal for Research in Mathematics Education**

### OPTION 2

#### E-Membership

Includes full online access, including online archives to one NCTM school journal. E-Membership does not include a print journal or the research journal. Select **ONE** journal below:

- \$66**  **Teaching Children Mathematics** (PreK-6)  
 **Mathematics Teaching in the Middle School** (5-9)  
 **Mathematics Teacher** (8-14)

#### Additional Online Journals:

May also be included with Option 1. May be selected to enhance your membership for as little as \$21.

- \$21 Teaching Children Mathematics** (PreK-6)  
 **\$21 Mathematics Teaching in the Middle School** (5-9)  
 **\$21 Mathematics Teacher** (8-14)

### PAYMENT SUMMARY

Membership Dues (Option 1 or 2) . . . . .	\$ _____
Additional Print Journals (if choosing Option 1) . . . . .	\$ _____
Additional Online Journals (if choosing Option 1 or 2) . . . . .	\$ _____
Membership and Additional Journals Total . . . . .	\$ _____
For 2-year membership, multiply by 2 and deduct 10% . . . . .	\$ _____
For 3-year membership, multiply by 3 and deduct 15% . . . . .	\$ _____
<b>Foreign Postage</b> (if applicable): For mailings outside the U.S., add \$18 for the first journal subscription and \$4 for each additional print journal subscription per year. For multiyear membership, please multiply foreign postage by 2 or by 3 and add to payment line at right. <b>Note:</b> Multiyear discount does not apply to foreign postage . . . . .	\$ _____
Mathematics Educational Trust (MET) Support ( <i>Your contribution is tax deductible</i> ) . . . . .	\$ _____
<b>TOTAL Payment to NCTM in U.S. Dollars</b> . . . . .	<b>\$ _____</b>

### METHOD OF PAYMENT

Check  Money Order  AMEX  MC  VISA  P.O. # \_\_\_\_\_  
(include signed copy)

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# Exhibitor Directory

## **2Know! Classroom Response System/ Renaissance Learning**

**Booth: 2129**

Wisconsin Rapids, Wisconsin  
PH: 715-424-3636 FX: 715-424-4242  
[www.renlearn.com](http://www.renlearn.com)

2Know!<sup>TM</sup> combines easy-to-use software, wireless handheld remote devices, and a custom toolbar to help you get all your students engaged in learning, while you instantly assess performance. The system's state-of-the-art radio-frequency technology provides students with a fun and interactive way to take quizzes, tests, and surveys in virtually any subject!

## **4Dland Inc.**

**Booth: 435**

Seoul, Korea  
PH: 82-2-3474-9224/5 FX: 82-2-3437-1933  
[www.4dframe.com](http://www.4dframe.com)

We are one of the leading Korean companies related with education, developing and supplying unique educational tools called 4DFrame materials and heuristic programs, which we are very proud of. Through our materials, students can feel that they construct something and start to build their own thoughts.

## **A**

### **AbleNet**

**Booth: 1134**

Roseville, Minnesota  
PH: 800-322-0956 FX: 651-294-2200  
[www.ablenetinc.com](http://www.ablenetinc.com)

AbleNet Equals Mathematics program, is a comprehensive researched based math curriculum aligned to K-12 math standards for students with disabilities. Equals utilizes the best in differentiated math instruction with a comprehensive set of over 100 manipulatives, digital media, and assistive technologies

### **AccuCut**

**Booth: 417**

Fremont, Nebraska  
PH: 800-288-1670 FX: 800-369-1332  
[www.AccuCutEducation.com](http://www.AccuCutEducation.com)

AccuCut<sup>®</sup> offers the most versatile die cutting system on the market today for teachers and media specialists to use in creating classroom teaching aids, manipulative activities, and embellishments.

### **ACT, Inc.**

**Booth: 2024**

Iowa City, Iowa  
PH: 319-337-1000  
[www.act.org](http://www.act.org)

ACT, Inc., is an independent, not-for-profit organization providing over a hundred assessment, research, information, and program management services in the broad areas of education planning, career planning, and workforce development. Though designed to meet a wide array of needs, all ACT programs and services have one mission—helping people achieve education and workplace success.

### **The Actuarial Foundation**

**Booth: 2020**

Schaumburg, Illinois  
PH: 847-706-3535 FX: 847-706-3599  
Hundreds of thousands of teachers are inspiring a new generation of math-skilled thinkers with The Actuarial Foundation's free lesson plans and curriculum resources. See what the buzz is about. Bring our math and financial literacy materials home to your students. Visit us at [www.actuarialfoundation.org/programs/for\\_teachers.shtml](http://www.actuarialfoundation.org/programs/for_teachers.shtml)

### **Adaptive Curriculum**

**Booth: 735**

Scottsdale, Arizona  
PH: 480-884-1689 FX: 480-884-1888  
[www.adaptivecurriculum.com](http://www.adaptivecurriculum.com)

### **AIMS Education Foundation**

**Booth: 428**

Fresno, California  
PH: 888-733-2467 FX: 559-255-6396  
[www.aimsedu.org](http://www.aimsedu.org)

### **ALEKS Corporation**

**Booth: 1829**

Tustin, California  
PH: 714-245-7191 FX: 714-245-7190  
[www.aleks.com](http://www.aleks.com)

### **America's Choice**

**Booth: 2417**

Washington, D.C.  
PH: 202-783-3668 FX: 202-783-3672  
[www.americaschoice.org](http://www.americaschoice.org)

We offer comprehensive, proven solutions to the complex problems educators face in the era of accountability. America's Choice has an unparalleled history as a national thought leader and as the creator of research-based school improvement solutions that work for states, districts, and schools.

### **American Book Company**

**Booth: 2431**

Woodstock, Georgia  
PH: 888-264-5877 FX: 866-827-3240  
[www.americanbookcompany.com](http://www.americanbookcompany.com)  
FREE preview books available for ACT, SAT, ECA, ÖGT, EOC, LEAP,EOCT, OCCT, EOI, GHSGT, AHSGE, ARMT, CAH-SEE, CST, EOCEP, EOG, AIMS, HSPE, FCAT, HSPA, HSAP, TCAP, and many others. Available at the booth while supplies last! Common Core math simulations also available.

### **American Educational Products LLC**

**Booth: 839**

Fort Collins, Colorado  
PH: 800-289-9299 FX: 970-484-1198  
[www.amep.com](http://www.amep.com)

American Educational Products, LLC, has been supplying the highest quality classroom materials for more than 70 years. We are sincerely proud of our legacy and we promise to strive to meet the needs of present and future students as they prepare to become knowledgeable and successful world citizens.

### **American Mathematical Society**

**Booth: 938**

Providence, Rhode Island  
PH: 401-455-4000 FX: 401-321-3842  
[www.ams.org](http://www.ams.org)

The AMS fulfills its mission through programs and services that promote mathematics research and its uses, strengthen mathematical education, and foster awareness and appreciation of mathematics and its connections to other disciplines and the everyday life. AMS programs include lectures, events and publications for mathematically talented students.

### **American Statistical Association**

**Booth: 2134**

Alexandria, Virginia  
PH: 703-684-1221 FX: 703-684-3768  
[www.amstat.org/education](http://www.amstat.org/education)

ASA is a scientific and educational society that works to improve statistical education at all levels. ASA offers outreach activities and resources such as teacher professional development, student competitions, and publications. Stop by the ASA booth to chat with statistics educators and learn about ASA's free grades K-12 statistics education resources.

# Exhibitor Directory

## Amsco School Publications, Inc.

**Booth: 736**

New York, New York  
PH: 212-886-6500 FX: 212-886-6515  
[www.amscopub.com](http://www.amscopub.com)

Amsco publishes textbooks, workbooks, test-prep, and supplementary programs for Integrated Algebra, AP calculus, Algebra 2, and trigonometry, geometry, AP statistics and more for students in grades 7–12.

## Apangea Learning

**Booth: 534**

Pittsburgh, Pennsylvania  
PH: 412-894-9945  
[www.apangea.com](http://www.apangea.com)

## Apperson Educational Products

**Booth: 745**

Renton, Washington  
PH: 800-827-9219 FX: 800-321-8558  
[www.appersonedu.com/go/NCTM](http://www.appersonedu.com/go/NCTM)

Apperson offers test scoring solutions that provide immediate access to data-rich reports. Stop by our booth to register for a free, no-risk 30-day trial.

## Ascend Education

**Booth: 1030**

Shreveport, Louisiana  
PH: 877-843-0277 FX: 318-865-6227  
[www.ascendmath.com](http://www.ascendmath.com)

## Association of Mathematics Teacher Educators (AMTE)

**Booth: 322**

[www.amte.net](http://www.amte.net)

## B

### The Bach Company

**Booth: 743**

Palo Alto, California  
PH: 800-248-2224 FX: 650-494-1995  
[www.bachcompany.com](http://www.bachcompany.com)

The Bach Company has been supplying calculators and classroom solutions to teachers and educational institutions for more than 35 years. Quality products, nationwide delivery, superior customer service and guaranteed low prices! Come see us in Booth #743.

### BeAnActuary.org

**Booth: 2022**

Schaumburg, Illinois  
PH: 847-706-3501 FX: 847-706-3599  
[www.beanactuary.org](http://www.beanactuary.org)

## Bedford, Freeman & Worth (BFW) Publishers & W.H. Freeman

**Booth: 725**

Cranbury, New Jersey  
PH: 800-223-1715 FX: 609-409-0297  
[www.bfwpub.com/highschool](http://www.bfwpub.com/highschool)

Bedford, Freeman & Worth Publishing (BFW) Group is the most trusted source of educational materials for high school mathematics in print, cd and on the web. We publish #1 selling books in AP and general level statistics, calculus, geometry, algebra, discrete mathematics, and elective courses.

## Benjamin Banneker Association

**Booth: 324**

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

## Big Ideas Learning, LLC

**Booth: 429**

Erie, Pennsylvania  
PH: 877-552-7766 FX: 888-432-9245  
[www.BigIdeasMath.com](http://www.BigIdeasMath.com)

Big Ideas Learning, LLC was founded to create instructional materials that provide a coherent curriculum to support world-class mathematics education. Using mathematical and pedagogical research, our programs focus on fewer topics at each level. The goal is to provide a narrower and deeper course of study that leads students to mastery of each benchmark.

## The BizWorld Foundation

**Booth: 437**

San Francisco, California  
PH: 415-503-5880 FX: 415-863-2072  
[www.bizworld.org](http://www.bizworld.org)

## Borenson and Associates, Inc.

**Booth: 625**

Allentown, Pennsylvania  
PH: 800-993-6284 FX: 610-398-7863  
[www.borenson.com](http://www.borenson.com)

Hands-On Equations® demystifies the learning of algebra for students in grades 3 - 9. The secret is our powerful visual and kinesthetic system. Since 1990 more than 50,000 teachers have taken the Making Algebra Child's Play® workshop. Visit our Web site [www.borenson.com](http://www.borenson.com) for additional information and public workshop schedule.

## Box Cars & One-Eyed Jacks

**Booth: 1925**

Edmonton, Alberta Canada  
PH: 780-440-6284 FX: 780-440-1619  
[www.boxcarsandoneyedjacks.com](http://www.boxcarsandoneyedjacks.com)

Award winning math game resources that use cards, dice, multi-sided dice and dominoes. Known for our excellent hands-on workshops for Kindergarten to Grade 10. Largest selection of cards, dice and math manipulatives. Great for regular, after school, RTI, or ESL.

## Britannica Digital Learning

**Booth: 937**

Chicago, Illinois  
PH: 312-347-7000 FX: 312-347-7966  
[mathincontext.eb.com](http://mathincontext.eb.com)

Britannica Digital Learning: innovative products with the assurance of Britannica quality! SmartMath, a web-based practice and assess program for elementary students, allows teachers to assign, evaluate, and assess with ease! Mathematics in Context, a NSF-funded, standards-based mathematics curriculum for the middle grades, with new! Companion Workbooks and expanded online resources.

## BuzzMath.com

**Booth: 2017**

Montreal, Quebec  
PH: 888-528-8878  
[www.buzzmath.com](http://www.buzzmath.com)

## C

### Calculus in Motion

**Booth: 1035**

Burbank, California  
PH: 818-845-6332 FX: 818-845-6332  
[www.calculusinmotion.com](http://www.calculusinmotion.com)

### Cambium Learning Group

**Booth: 943**

Dallas, Texas  
PH: 303-651-2829 FX: 303-776-5934  
[www.cambiumlearning.com](http://www.cambiumlearning.com)

### Cambridge Educational Services

**Booth: 738**

Des Plaines, Illinois  
PH: 800-444-4373 FX: 847-299-2933  
[www.cambridgeed.com](http://www.cambridgeed.com)

Cambridge partners with you during and after school obtaining test score increases (e.g. ACT/SAT) representing years of college readiness growth. We train teachers or you use ours. Data-driven lesson plans provide core for grades 6–11 instructional strategy models of students' increased achievement.

# Exhibitor Directory

## Carnegie Learning, Inc.

### Booth: 628

Pittsburgh, Pennsylvania  
PH: 888-859-7094 FX: 412-690-2444  
[www.carnegielearning.com](http://www.carnegielearning.com)

Carnegie Learning, Inc., is a leading publisher of innovative, research-based math curricula for middle school, high school, and post-secondary students. Providing differentiated instruction to schools across the United States, Carnegie Learning is helping students to succeed in math, creating a gateway to graduation and preparing them for the 21st century.

## Carolina Biological Supply Company

### Booth: 418

Burlington, North Carolina  
PH: 800-227-1150 ext 6252  
FX: 336-538-6338  
[www.carolinacurriculum.com](http://www.carolinacurriculum.com)

Carolina has the results-driven curriculum and literacy resources to meet assessment standards and help you and your students succeed. Stop by our booth to learn more about our research-based math and science curriculum including The STC Program™ GEMS®, and Math Out of the Box®, plus new literacy resources, and more.

## Casio America, Inc.

### Booths: 517 and 617

Dover, New Jersey  
PH: 973-361-5400 FX: 973-537-8964  
[www.casio.com](http://www.casio.com)

## Cengage Learning

### Booth: 425

Belmont, California  
PH: 650-413-7408 FX: 650-595-0260  
[www.cengage.com](http://www.cengage.com)

## CIM Technology Solutions

### Booth: 1343

Indianapolis, Indiana  
PH: 800-742-5036 FX: 812-376-3557  
[www.cimtechsolutions.com](http://www.cimtechsolutions.com)

Check out the latest in interactive teaching solutions from eInstruction, uWriteTouch, FrontRow, and more!

## Classroom Products Warehouse

### Booth: 824

Vernon Hills, Illinois  
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[www.shopcpw.com](http://www.shopcpw.com)

Premium Brand Math and Science Products at the Guaranteed Lowest Discount Prices!

## Coastline Graphics

### Booth: 934

Valencia, California  
PH: 661-254-4707 FX: 661-254-4702  
[coastlinepromotions.net](http://coastlinepromotions.net)

Promotional and screen print items for schools, sports leagues, and corporate events.

## The College Board

### Booth: 1828

New York, New York  
PH: 212-713-8331 FX: 212-649-8442  
[www.collegeboard.com](http://www.collegeboard.com)

## Conceptua Math

### Booth: 2235

Petaluma, California  
PH: 707-766-0584 FX: 415-233-8555  
[www.conceptuamath.com](http://www.conceptuamath.com)

Conceptua Math is the premier provider of online fractions software. Our free tools build the path from concepts to procedures and higher order thinking, and are ideal for whole-class instruction in fractions. Our premium subscription of Conceptua Fractions includes over 400 activities with formative assessment and data reporting. Visit [www.conceptuamath.com](http://www.conceptuamath.com).

## Continental Press

### Booth: 1034

Elizabethtown, Pennsylvania  
PH: 800-233-0759 FX: 888-834-1303  
[www.continentalpress.com](http://www.continentalpress.com)

Continental Press publishes grades K–12 programs to support your curriculum goals. See our new instructional series, Finish Line Mathematics for the Common Core State Standards. Our Finish Line state test programs are popular all across the country, especially in Indiana schools (ISTEP+ and ECAs). Stop by for FREE samples!

## CORD Communications

### Booth: 526

Waco, Texas  
PH: 800.231.3015 FX: 254.776.3906  
[www.cordcommunications.com](http://www.cordcommunications.com)

CORD Communications specializes in providing contextual-based math and science learning tools that enable a majority of students to succeed. Application, activities and action allow students to achieve deeper understanding and long-lasting learning. With curricula developed by CORD, this is math your students will use.

## Corwin

### Booth: 1729

Thousand Oaks, California  
PH: 800-831-6640 FX: 800-417-2466  
[www.Corwin.com](http://www.Corwin.com)

Corwin's research-based books, journals, and multimedia resources are written for grades pre-K–12 teachers, administrators, counselors, specialists, and staff developers in areas such as staff development, leadership, mathematics, teaching methods, learning styles, instructional equity, counseling, diversity, exceptional students, curriculum development, students' assessment, classroom management, students' behavior, community relations, technology, and research.

## Council for Technology in Mathematics Education (CLIME)

### Booth: 326

[forum.swarthmore.edu/clime](http://forum.swarthmore.edu/clime)

## CPM Educational Program

### Booth: 541

Sacramento, California  
PH: 209-745-2055 FX: 916-391-3301  
[www.cpm.org](http://www.cpm.org)

CPM is a comprehensive, standards-based mathematics program for grades 6 through calculus that provides professional development workshops and individual mentoring so that teachers can effectively implement problem-based lessons in student-centered settings. CPM also offers curriculum materials that are based on the methods taught in the workshops.

## Creative Smarts, Inc.

### Booth: 434

Cambridge, Massachusetts

## Curriculum Associates

### Booth: 1435

North Billerica, Massachusetts  
PH: 800-225-0248 FX: 800-366-1158  
[www.CurriculumAssociates.com](http://www.CurriculumAssociates.com)

Trusted by educators for more than 40 years, Curriculum Associates provides effective, affordable supplemental programs to meet the needs of today's diverse classrooms—including the brand-new CAMS & STAMS, a powerful math program that improve students' mathematics competency by focusing on the key foundational skills.

# Learn how to teach with interactive technology—easily!

Don't miss the exciting FREE workshops hosted by DYMO/Mimio at NCTM 2011. You can choose from a range of workshops on interactive technology and Mimio products—and learn just how easy it is to teach math with technology. You'll see our innovative MimioClassroom™ suite of products firsthand, and can sign up for a chance to **win a complete interactive system for your school!**

Visit booth 2317 at NCTM to attend one of the Expert Teacher Presentations on our main stage. Find out how these teachers use interactive teaching technology in the math classroom. More ways to learn about Mimio—simply!

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interactive teaching tools at  
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## Mimio Workshop Sessions—Room 116

Don't miss our free **Workshop Sessions in Room 116** in the Indiana Convention Center. Learn how Mimio makes teaching math with technology easy and how to make your interactive lessons better.

Friday, April 15, 2011		
Show Me the Money: Learn the Tips and Tricks to Grant Funding	1:00 PM – 2:00 PM	Magen McGahee Grant and Federal Programs Specialist
Quality Interactive Math Lessons: What to Look For	2:30 PM – 3:30 PM	Alyssa Porter Interactive Content Leader
The Formula for Interactivity in the Classroom: Tips and Tricks for Rookies to Gurus	3:30 PM – 4:30 PM	Mimio Teaching and Learning Specialist

Visit [mimio.dymo.com/a19](http://mimio.dymo.com/a19) for complete workshop descriptions and contest rules.





# Exhibitor Directory

## D

### **D & H Distributing Company**

**Booth: 1143**

Harrisburg, Pennsylvania  
PH: 800-340-1006 FX: 717-255-6750  
[www.buycalcs.com](http://www.buycalcs.com)

D & H is the nation's # 1 distributor of calculators to schools.

### **Didax Education**

**Booth: 1835**

Rowley, Massachusetts  
PH: 800-458-0024 FX: 800-350-2345  
[www.didax.com](http://www.didax.com)

Didax publishes a variety of unique supplemental math resources for grades pre-K-12 including books, games, and software. We also carry a full-line of manipulatives. And, we are proud to publish Kathy Richardson's assessment and curriculum materials for grades K-3 including Assessing Math Concepts for the Web.

### **Digi-Block, Inc.**

**Booth 1329**

Cambridge, Massachusetts  
PH: 617-661-0100 FX: 617-661-3310  
[www.digiblock.com](http://www.digiblock.com)

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

**Booth: 640**

San Antonio, Texas  
PH: 800-993-4624 FX: 210-698-0095  
[www.dinah.com](http://www.dinah.com)

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

### **DreamBox Learning**

**Booth: 1428**

Bellevue, Washington  
PH: 425-637-8900 FX: 425-451-4906  
[www.dreambox.com](http://www.dreambox.com)

DreamBox Learning provides an adaptive learning environment where students achieve better, faster math proficiency. DreamBox Learning K-3 Math integrates individualized instruction and assessment to keep all students, from struggling to advanced, in their optimal learning zone. A rigorous curriculum, an engaging online experience, and detailed reporting help every student excel.

### **DYMO/Mimio Interactive Teaching Technologies**

**Booth: 2317**

Cambridge, Massachusetts  
PH: 617-902-2040 FX: 617-902-2041  
[www.mimio.dymo.com](http://www.mimio.dymo.com)

DYMO/Mimio is a global leader in interactive teaching technologies, and has just introduced the MimioClassroom™ family of products, our best teaching tools ever. MimioClassroom™ products make it easier for teachers to do what they do best – teach. That's what sets DYMO/Mimio apart in the world of interactive teaching.

## E

### **EAI Education**

**Booth: 2116**

Oakland, New Jersey  
PH: 800-770-8010 FX: 201-891-5689  
[www.EAEducation.com](http://www.EAEducation.com)

EAI Education is your source for teaching supplies, hands-on educational products, manipulatives, calculators, teacher resources, and more for grades PreK 12. We carry over 5,000 products, including our exclusive SmartPAL® transparent sleeves, Money Activity Centers, CalcPAL® calculators, CalcSafe® Storage, QuietShape® foam manipulatives, GeoModel® solids, Geared for Time® clocks, I have, Who Has? games and flip charts.

### **Edorphins**

**Booth: 1145**

Anchorage, Alaska

### **ETA/Cuisenaire**

**Booths: 1617 & 1627**

Vernon Hills, Illinois  
PH: 800-445-5985 FX: 888-659-9957  
[www.eta-cuisenaire.com](http://www.eta-cuisenaire.com)

Math, science, and literacy educational manipulatives and supplemental material for grades pre-k-12.

### **Exemplars**

**Booth: 416**

Underhill, Vermont  
PH: 800-450-4050 FX: 802-899-4825  
[www.exemplars.com](http://www.exemplars.com)

Exemplars publishes authentic problem-solving math tasks for assessment and instruction. Our material is differentiated at three levels. Tasks are designed to engage students and promote reasoning and communication. Rubrics and annotated anchor papers may be used to assess students' problem-solving skills. Aligned to state, NCTM, and Common Core standards.

### **ExploreLearning**

**Booth: 843**

Charlottesville, Virginia  
PH: 866-882-4141 FX: 434-220-1484  
[www.explorelearning.com](http://www.explorelearning.com)

ExploreLearning.com is the world's largest library of interactive, online simulations for math and science in grades 3-12. With 450 Gizmos online, its growing base of inquiry-based learning materials provides a powerful enhancement to today's classrooms.

### **Eye On Education**

**Booth: 724**

Larchmont, New York  
PH: 888-299-5350 FX: 914-833-0761  
[www.eyoneducation.com](http://www.eyoneducation.com)

Eye On Education publishes practical reference books for teachers, principals, administrators, and other educators. All publications are peer-reviewed. They provide busy educators with practical information on professional development, educational leadership, school improvement, student assessment, data analysis, teaching skills, and other related topics.

## F

### **FACEing MATH**

**Booth: 1245**

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

FACEing MATH sells standards-based supplemental math books that blend math and art. All books are created by experienced teachers.

### **First In Math-Suntex International**

**Booth: 1927**

Easton, Pennsylvania  
PH: 610-253-5255 FX: 610-258-2180  
[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 grades K-12 students the "deep practice" necessary for skill retention and improved test scores. Engaging, substantive, self-pacing content enables students to take ownership of the learning process—with not additional load teachers.

### **Flashmaster LLC**

**Booth: 930**

Jackson, Wyoming  
PH: 800-884-3531 FX: 888-493-4320  
[www.flashmaster.com](http://www.flashmaster.com)

# Exhibitor Directory

## **Flatland: The Movie**

**Booth: 518**

Austin, Texas  
PH: 815-366-7428 FX: 815-366-7428  
[www.flatlandthemovie.com](http://www.flatlandthemovie.com)

*Flatland: The Movie* is an exciting half-hour animated film adapted from Edwin Abbott's classic novel, "Flatland: A Romance of Many Dimensions". The movie stars the voices of Martin Sheen, Kristen Bell, Tony Hale, Michael York, and Joe Estevez. The DVD is available for purchase at the booth and includes interviews with the stars of the movie.

## **Fluidity Software, Inc.**

### **FluidMath**

**Booth: 1234**

Somerville, Massachusetts  
[www.fluiditysoftware.com](http://www.fluiditysoftware.com)

FluidMath enables teachers and students to easily create, solve, graph and animate math and physics problems all in their own handwriting on the screen of a Tablet PC or Interactive Whiteboard. For teachers, it is designed to assist in creating dynamic instructional materials for the classroom and to enable clearer presentation of concepts. For students, it is designed to help explore and understand concepts in mathematics and science.

## **FoxMind Games**

**Booth: 2434**

Montreal, Quebec  
PH: 514-369-7777 FX: 514-221-2271  
[www.foxmind.com](http://www.foxmind.com)

FoxMind publishes original, smart, fun games and puzzles. Favourite among parents, teachers and games lovers, FoxMind games build reasoning skills, develop verbal expression, creativity and strategic thinking. Our games have won numerous awards in North America and around the world. FoxMind is The Smarter Fun Company.

## **Frog Publications, Inc**

**Booth: 842**

San Antonio, Florida  
PH: 800-777-3764 FX: 352 588-0863  
[www.frog.com](http://www.frog.com)

Classroom learning games, parental involvement materials, daily review, response to intervention, dual language, differentiated instruction.

## **G**

### **GeoLeg Geometry and Measurement**

**Booth: 525**

Monroe, Louisiana  
PH: 888-595-5347 FX: 318-324-1546  
[www.geoleg.com](http://www.geoleg.com)

GeoLeg Geometry and Measurement engages students with measuring, drawing and exploring using the dynamic GeoLeg. The research based GeoLeg Program provides in-depth, sequential, easy-to-use grade-level lessons. The GeoLeg coupon at the back of this book provides one free GeoLeg to the first 500. Elementary, Secondary

### **GeoMotion Group, Inc.**

**Booth: 835**

Orlando, Florida  
PH: 407-275-0510 FX: 407-275-3039  
[www.geomotiongroup.com](http://www.geomotiongroup.com)

## **H**

### **Haese & Harris Publications**

**Booth: 2135**

Adelaide, South Australia  
PH: +61 8 8355 9444 FX: +61 8 8355 9471  
[www.haeseandharris.com.au](http://www.haeseandharris.com.au)

We are a specialist publisher of math textbooks and software for schools, mainly for schools that offer the International Baccalaureate (IB) Diploma and Middle Years Programs. Our books are noted for their student-friendly approach and our own specially designed interactive software on the CDs that accompany each of our textbooks.

### **Heinemann Publishers**

**Booth: 327**

Portsmouth, New Hampshire  
PH: 800.541.2086 FX: 603.431.7840  
[www.heinemann.com](http://www.heinemann.com)

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### **Hewlett Packard**

**Booth: 2325**

Fort Collins, Colorado  
PH: 970-898-3800  
[www.hp.com](http://www.hp.com)

## **HOTMATH, Inc.**

**Booth: 728**

Kensington, California  
PH: 510-424-5525 FX: 510-372-2756  
[www.hotmath.com](http://www.hotmath.com)

## **Houghton Mifflin Harcourt**

**Booth: 817**

Austin, Texas  
PH: 800-225-5425  
[www.hmhco.com](http://www.hmhco.com)

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## **Howbrite Solutions, Inc.**

**Booth: 834**

Cokato, Minnesota  
PH: 320-286-2597 FX: 320-286-6338  
[www.howbrite.com](http://www.howbrite.com)

## **I**

### **IB Source**

**Booth: 319**

Chicago, Illinois  
PH: 312-224-2536 FX: 312-212-5534  
[www.ib-source.com](http://www.ib-source.com)

IB Source is U.S.-based book distributor dedicated to providing schools with quality resources for the IB, AP and general Mathematical Curriculums. IB Source eliminates the barrier many North American schools face to ordering publications from multiple different publishers, including publishers overseas. IB Source acts as a "one stop shop" for all your mathematical resources!

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[illuminations.nctm.org](http://illuminations.nctm.org)

A project of NCTM that provides lesson plans and online activities free to grades K-12 math educators and students

# Exhibitor Directory

## IXL

### Booth: 1135

San Mateo, California  
PH: 855-255-8800 FX: 650-372-4072  
[www.ixl.com](http://www.ixl.com)

IXL (think "I excel") is a math practice Web site completely aligned to all state standards! Unlike other math software, IXL offers unlimited problems in a fun, visually-stimulating format that students love. Plus, teachers can view detailed reports on student's progress and trouble spots, including complete question histories for individuals.

## J

### Johnny's Key

### Booth: 2234

Trevorton, Pennsylvania  
PH: 570-809-2840  
[www.johnnyskey.com](http://www.johnnyskey.com)

Johnny's Key is home to Math Track and Time Pieces. This easy, 1-2-3 method that's sweeping the nation is useful for calculating elapsed time, making change, subtraction with regrouping, number sense, fractions and more! Have you found little Johnny's key yet?

### Johns Hopkins Center for Talented Youth

### Booth: 2236

Baltimore, Maryland  
PH: 410-7356185 FX: 410-735-6187  
[www.cty.jhu.edu/summer](http://www.cty.jhu.edu/summer)

Since 1979, the Center for Talented Youth at Johns Hopkins University has focused on the needs of students with high academic abilities. Our 27 summer programs offer students from around the world the opportunity to engage in challenging academic work with peers who share their abilities and love of learning.

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### Booth: 1344

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

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## K

### Kendall Hunt Publishing Company

### Booth: 1235

Dubuque, Iowa  
PH: 563-589-1000 FX: 563-589-1163  
[www.kendallhunt.com](http://www.kendallhunt.com)

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### Key Curriculum Press

### Booth: 1117

Emeryville, California  
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[www.keypress.com](http://www.keypress.com)

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### Kleen Slate Concepts

### Booth: 2231

Sonora, California  
PH 209-588-0375 FX 209-588-9677  
[www.kleenslate.com](http://www.kleenslate.com)

## L

### Lakeshore Learning Materials

### Booth: 1635

Carson, California  
PH: 310 537-8600 FX: 310 900-2190  
[www.lakeshorelearning.com](http://www.lakeshorelearning.com)

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### Booth: 1137

Teaneck, New Jersey

### Learning Resources

### Booth: 2322

Vernon Hills, Illinois  
PH: 800-222-3909 FX: 847-281-1717  
[www.learningresources.com](http://www.learningresources.com)

### Learning Upgrade LLC

### Booth: 831

San Diego, California  
PH: 800-998-8864 FX: 858-653-4677  
[www.learningupgrade.com](http://www.learningupgrade.com)

Learning Upgrade publishes the Algebra Upgrade and Math Upgrade online courses featuring songs, video and games. Transform your class with interactive lectures using data projectors, SMARTboards, and activboards. Bring each student up to proficiency with high interest online student courses.

### Learning Wrap-ups, Inc.

### Booth: 2137

Layton, Utah  
PH: 800-992-4966 FX: 801-497-0050  
[www.learningwrapups.com](http://www.learningwrapups.com)

Learning Wrap-ups, Inc. is a supplemental publishers of Learning Wrap-ups, which is designed to build Fact Fluency and develop Automaticity of Basic Math Skills and Learning Palette, which creates Standard Based Learning Centers.

## Legacy 4 Learning

**Booth: 2421**

Loudon, Tennessee  
PH: 865-458-9539 FX: 865-657-9924  
[www.legacy4learning.com](http://www.legacy4learning.com)

Legacy 4 Learning offers a math intervention program for grades K–8. Its Tools for Numeracy books, which are aligned with the Common Core State Standards, include scripted lessons, flip charts, tests, and vocabulary and computation practice. Available to supplement the program are Vocabulary Cards, Standard Strips and Web-based Progress Monitoring.

## Let's Go Learn, Inc.

**Booth: 2429**

Kensington, California  
PH: 888-618-7323 FX: 510-558-8838  
[www.letsgolearn.com](http://www.letsgolearn.com)

## LL Teach, Inc.

**Booth: 643**

Bridgewater, New Jersey  
PH: 908-575-8830 FAX: 908-704-1730  
[www.llteach.com](http://www.llteach.com)

## Lone Star Learning

**Booth: 2019**

Lubbock, Texas  
PH: 806-281-1424 FX: 806-281-1407  
[www.LoneStarLearning.com](http://www.LoneStarLearning.com)

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## M

### MAA American Mathematics Competitions

**Booth: 726**

Lincoln, Nebraska  
PH: 402-472-2257 FX: 402-472-6087  
[www.amc.maa.org](http://www.amc.maa.org)

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Marshall Cavendish Education is the leading grades K–12 educational publisher in Singapore, with a deep commitment to developing quality materials that adopts a holistic approach towards teaching and learning. As the preferred copublisher of the Singapore Ministry of Education our materials are used by most schools, contributing to Singapore's ranking among top nations in TIMSS consistently since 1995. Globally, we have extended our reach to educators and learners and our materials are endorsed by education ministries in various regions including South East Asia, the Americas, and the Caribbean.

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

## Math for America

**Booth: 635**

New York, New York  
PH: -646-437-0904  
[www.mathforamerica.org](http://www.mathforamerica.org)

We are a nonprofit organization with a mission to improve mathematics education in U.S. public secondary schools by recruiting, training and retaining outstanding mathematics teachers.

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Philadelphia, Pennsylvania  
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[mathforum.org](http://mathforum.org)

The Math Forum is the leading online community for improving math learning and teaching since 1992. We are teachers, mathematicians, researchers, and students using the power of the Internet to learn math and improve education. Join us as we develop the Mathematical Practices of the Common Core State Standards. <http://mathforum.org/>

## The Math Learning Center

**Booth: 624**

Salem, Oregon  
PH: 503-370-8130 FX: 503-370-7961  
[www.mathlearningcenter.org](http://www.mathlearningcenter.org)

The Math Learning Center is a nonprofit organization that offers innovative, standards-based grades K–5 curriculum, professional development, supplemental materials, and resources to support learning and teaching. For more than 35 years, we have been committed to improving math education by addressing the needs of classroom teachers and students of all learning styles.

## Math Recovery Council

**Booth: 1442**

Brentwood, Tennessee  
PH: 615-369-0700 FX: 615-369-0701  
[www.mathrecovery.org](http://www.mathrecovery.org)

## Math Solutions

**Booth: 1534**

Sausalito, California  
PH: 800-868-9092 FX: 877-942-8837  
[www.mathsolutions.com](http://www.mathsolutions.com)

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Minneapolis, Minnesota  
PH: 800-852-2435 FX: 952-546-7502  
[www.movingwithmath.com](http://www.movingwithmath.com)

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**Booth 731**

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

The MATHCOUNTS Foundation is a non-profit organization that works with middle school students to promote excellence in mathematics.

## Mathematical Olympiads for Elementary & Middle Schools (MOEMS)

**Booth: 836**

Bellmore, New York  
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[www.moems.org](http://www.moems.org)

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## Mathletics

**Booth: 739**

New York, New York  
PH: 866 387 9193 FX: 866 387 3220  
[www.mathletics.com](http://www.mathletics.com)

Mathletics is a multiple award-winning, grades K–12 online math curriculum resource including common-core-and-state-aligned curriculum and a live multi-player gaming environment where students compete in 60 second arithmetic challenges against students around the globe. Proven to inspire better results from the team behind World Math Day - ask about your *Free Class Trial* of Mathletics.

## MathRack

**Booth: 1937**

Wheaton, Illinois  
PH: 630-682-0000 FX: 630-682-0010  
[www.mathrack.com](http://www.mathrack.com)

## MathType by Design Science

**Booth: 931**

Long Beach, California  
PH: 562-432-2920 FX: 562-432-2857  
[www.dessci.com](http://www.dessci.com)

MathType by Design Science is the full version of Microsoft Equation Editor. In addition to Microsoft Office, MathType works with more than 450 software applications and Web sites, including SMART boards, easyQuizzzy, Padowan Graph, and Moodle. At NCTM, see MathType 6.7, compatible with Office 2010 for Windows and Office 2011 for Macintosh.

## McGraw-Hill Education

**Booth: 1417**

Columbus, Ohio  
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[www.mhsegsolutions.com/](http://www.mhsegsolutions.com/)

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## Michael Cherry

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

## Michigan State University

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[www.mindresearch.net](http://www.mindresearch.net)

The MIND Research Institute is a neuroscience-and-education-research-based, nonprofit corporation. MIND applies its distinctive visual approach to illustrating math concepts and building problem-solving skills as the basis for innovative, research-proven instructional math education programs for elementary and secondary schools.

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

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

Mu Alpha Theta, the national high school and two-year college mathematics honor society, will have 88,000 student members by June in more than 1,800 chapters. We are dedicated to inspiring keen interest and scholarship in mathematics, promoting enjoyment of the subject, and providing scholarships, grants, and awards to members and chapters.



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#### Booth: 527

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#### Booth: 936

Washington, DC  
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[www.naep.org](http://www.naep.org)

### Neufeld Learning Systems Inc.

#### Booth: 1328

London, Ontario  
PH: 1-866-429-6284 FX: 1-519-657-3220  
[www.neufeldmath.com](http://www.neufeldmath.com)

Neufeld Learning Systems Inc. are the authors and developers of The Understanding Math System, which included both software and professional development. Better math students are possible through superior math teachers. The Understanding Math System enriches a teacher's instructional capacity for mathematics therefore ensuring positive changes in students understanding mathematics.

### Newpath Learning

#### Booth: 838

Victor, New York  
PH: 800-507-0966 FX: 800-507-0967  
[www.newpathlearning.com](http://www.newpathlearning.com)

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### The New York Times

#### Booth: 734

Bethesda, Maryland  
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### Northpoint Horizons

#### Booth: 2325

Vernon Hills, Illinois  
PH: 866-466-7047 FX: 888-286-8681  
[www.northpointhorizons.com](http://www.northpointhorizons.com)

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

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## O

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#### Booth: 2435

St. Charles, Missouri  
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### PCI Education

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

### Pearson

#### Booth: 1917

Upper Saddle River, New Jersey  
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[www.Pearsonhighered.com](http://www.Pearsonhighered.com)

### Pearson

#### Booth: 1717

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## Q

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

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

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PH: 503-557-8100 FX: 503-557-8103  
[www.SingaporeMath.com](http://www.SingaporeMath.com)

SingaporeMath.com, Inc., has been providing Singapore Math materials to schools and homeschools in the United States and Canada since 1998. Stop by booth 528 or visit our Web site to learn more!

### Six Red Marbles

**Booth: 1939**

Boston, Massachusetts  
PH: 857-588-9000 FX: 857-588-9008  
[www.sixredmarbles.com](http://www.sixredmarbles.com)

Six Red Marbles, an award-winning provider of educational solutions, introduces three new online correlated STEM programs for kids: Juba™ (engaging Interactive discovery program), Waza™ (intergalactic math readiness adventure), and Cabanga™ (interactive, role-playing math program). Based on natural learning, our kid-centric programs have deep content: fun ideas for serious learning.

### SMART Technologies

**Booth: 1041**

Calgary, Alberta  
PH: 888-427-6278 FX: 403-228-2500  
[www.education.smarttech.com](http://www.education.smarttech.com)

### SMARTTraining, LLC

**Booth: 1830**

Scottsdale, Arizona  
PH: 602-570-1942 FX: 602-926-8363  
[www.singaporemathtraining.com](http://www.singaporemathtraining.com)

### SQR Solutions

**Booth: 1136**

LaGrange, Ohio  
PH: 800-672-3472 FX: 440-744-4449  
[www.SQRsolutions.com](http://www.SQRsolutions.com)

SQRsolutions.com offers educators a direct and personal link to thousands of audio-visual products, accessories, peripherals, electronics, and industry-awarded customer service. SQR Solutions understands the budget constraints of teachers and schools. We not only guarantee the lowest prices available, but also pledge that a personal representative will be assigned to handle your specific needs. SQRsolutions.com provides hundreds of math and science related software and DVD titles to assist your students' learning.

### St. Jude Children's Research Hospital

**Booth: 536**

Memphis, Tennessee  
PH: 901-578-1585 FX: 901-578-2839  
[www.stjude.org](http://www.stjude.org)

Math-A-Thon is a free educational program for St. Jude Children's Research Hospital designed to supplement your existing curriculum, while also teaching students the importance of helping others. St. Jude's mission is to find cures for children with cancer and other catastrophic diseases through research and treatment. No child is ever turned away because of a family's inability to pay.

### Staff Development for Educators (SDE)

**Booth: 2121**

Peterborough, New Hampshire  
PH: 603 924 9621 FX: 603 924 6688  
[www.sde.com](http://www.sde.com)

SDE: America's leading provider of seminars, conferences, in-service professional development, and high-quality teacher training materials for grades pre-K–12 educators. Topics: Mah With Meaning, Singapore Math, Literacy, RTI, and differentiated instruction.



# Exhibitor Directory

## Stenhouse Publishers

**Booth: 2021**

Portland, Maine  
PH: 800.988.9812 FX: 800.833.9164  
[www.stenhouse.com](http://www.stenhouse.com)

Stenhouse publishes books and videos that help grades K–12 teachers enhance their professional knowledge and build their students' thinking skills.

## STEPS Professional Development

**Booth: 2136**

Norwell, Massachusetts  
PH: 978-927-0038 FX: 978-759-9990  
[www.stepspd.com](http://www.stepspd.com)

## Stokes Publishing Company

**Booth: 1229**

Sunnyvale, California  
PH: 800-550-5254 FX: 408-541-9149  
[www.stokespublishing.com](http://www.stokespublishing.com)

Featuring supplemental materials for grades 3–12. We have been meeting teacher and classroom needs for 30+ years. Stop and see our latest products: NEW self-projecting TeachTimer II, projectable calculators, SpeedScorer, TrigTrainer, CALC!, Numero, MyChron Student Timers, and our innovative Hall Pass Timer; plus, math resource books.

## Study Island

**Booth: 730**

Dallas, Texas  
PH: 800-419-3191  
[www.studyisland.com](http://www.studyisland.com)

Study Island is an online standards-mastery and test-preparation program available in all 50 states and is built from specific state standards.

## Summit Learning

**Booth: 644**

Fort Atkinson, Wisconsin  
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[www.summitlearning.com](http://www.summitlearning.com)

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## T

### Teacher Created Materials

**Booth: 2034**

Huntington Beach, California  
PH: 800-858-7339 FX: 888-877-7606  
[www.tcmpub.com](http://www.tcmpub.com)

### Teachers Development Group

**Booth: 2330**

West Linn, Oregon  
PH: 503-650-1914 FX: 503-650-1575  
[www.teachersdg.org](http://www.teachersdg.org)

### TERC

**Booth: 1244**

Cambridge, Massachusetts  
PH: 617-873-9600 FX: 617-873-9601  
[www.terc.edu](http://www.terc.edu)

TERC is an independent, STEM-research-based organization dedicated to engaging and inspiring all students through stimulating curricula and programs designed to develop the knowledge and skills they need to ask questions, solve problems, and expand their opportunities.

### Tessellations

**Booth: 1038**

Phoenix, Arizona  
PH: 1-800-655-5341 FX: 480-763-6948  
[www.tessellations.com](http://www.tessellations.com)

Tessellations produces tessellation and brain-teaser puzzles, foam manipulatives, activity books, and classroom posters related to geometry, algebra, trigonometry, and arithmetic. Our offerings include the Jacobs Publishing line of "by Design" activity books, which feature a search-and-shade technique to make exercises fun and rewarding.

### Texas Instruments

**Booth: 1217**

Dallas, Texas  
PH: 800-842-2737 FX: 972-917-0747  
[www.education.ti.com](http://www.education.ti.com)

### TODOS: Mathematics for All

**Booth: 330**

Oakland, California  
PH: 510.302.4256 FX: 510.302.4242  
[www.todos-math.org](http://www.todos-math.org)

The mission of TODOS: Mathematics for ALL is to advocate for an equitable and high-quality mathematics education for all students—in particular, Hispanic/Latino students—by increasing the equity awareness of educators and their ability to foster students' proficiency in rigorous and coherent mathematics.

### TPS Publishing, Inc., with AB Curriculum

**Booth: 1240**

Valencia, California  
PH: 866-417-9384 FX: 661-310-9686  
[www.tpspublishing.com](http://www.tpspublishing.com)

TPS Publishing, Inc., a California state adopted mathematics publisher, is excited to be partnering with AB Curriculum, a craft-based company, to bring you hands-on activities aligned to the new National Core Curriculum for grades K–8. Our programs use a stepping-stone approach and are all underpinned with literacy.

### Triangle Coalition for Science and Technology Education (Albert Einstein Distinguished Educator Fellowship Program)

**Booth: 1037**

Arlington, Virginia  
PH: 703-516-5960 FX: 703-516-5969  
[www.trianglecoalition.org](http://www.trianglecoalition.org)

Learn more about the Albert Einstein Distinguished Educator Fellowship Program, managed by the Triangle Coalition, which brings grades K–12 math and science teachers to Washington, D.C. for a school year. Fellows serve in a congressional office or in a federal agency and receive a monthly stipend, moving expenses, and a professional travel allowance.

## U

### U.S. Department of Education

**Booth: 321**

Washington, D.C.  
[www.ed.gov](http://www.ed.gov)

### UNI Overseas Placement Service for Educators

**Booth: 522**

Cedar Falls, Iowa  
PH: 319-273-2083 FX: 319-273-6998  
[www.uni.edu/placement/overseas/](http://www.uni.edu/placement/overseas/)

### Universal Publishing

**Booth: 1923**

Waymart, Pennsylvania  
PH: 800-940-2270  
[www.upub.net](http://www.upub.net)

### University of West Alabama Online

**Booth: 2238**

Livingston, Alabama  
[www.uwa.edu](http://www.uwa.edu)

# Exhibitor Directory

## V

### Veenetronics

#### Booth: 837

Olympia Fields, Illinois  
PH: 708-357-0636

[www.internetmath.net](http://www.internetmath.net)

### Virtual Nerd

#### Booth: 2438

Saint Louis, Missouri  
PH: 877-677-8373 FX: 877-677-9373

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

Real help in math and science! Offering online tutoring to students in grades 7–12. Our patent pending Dynamic Whiteboard provides each student with a personalized learning experience. Teachers use our service in the classroom as a supplemental teaching tool. Stop by our booth to learn about our *free educator* accounts!

## W

### W.H. Freeman & Company

#### Booth: 725

Cranbury, New Jersey  
PH: 800-223-1715 FX: 609-409-0297

[www.bfwpub.com/highschool](http://www.bfwpub.com/highschool)

Bedford, Freeman & Worth Publishing (BFW) Group is the most trusted source of educational materials for high school mathematics in print, CD and on the Web. We publish #1 selling books in AP and general-level statistics, calculus, geometry, algebra, discrete mathematics, and elective courses.

### Wang Education, LLC

#### Booth: 516

Plano, Texas  
PH: 866-362-9264 FX: 413-638-2574

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

Dr. Frank Wang is a motivational speaker whose passion and mission is to help math teachers be as effective as possible. His company, Wang Education, provides manipulatives, books, and DVD programs to help enliven and enrich students' learning.

### Whaley Gradebook Co., Inc.

#### Booth: 420

Grand Junction, Colorado  
PH: 970-241-7777 FX: 970-241-0016

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

Teacher time-saver Names Program, 3, 2 and 1 line Gradebooks. 7 and 4/8 subject Planbooks. Harry K. Wong products. The First Days of School features our 3-line Gradebooks. Marvin Marshall's books *Discipline without Stress*, *Punishment or Rewards and Parenting without Stress*.

### Whizz Education

#### Booth: 1141

Seattle, Washington  
PH: 206-547-0292 FX: 206-299-9623

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

### Wiley

#### Booth: 1342

Hoboken, New Jersey  
PH: 201.748.6000

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

Founded in 1807, John Wiley & Sons, Inc., is an independent, global publisher of print and electronic products. Wiley specializes in scientific and technical books, journals, textbooks and education materials, professional and consumer books, and subscription services.

### Women and Mathematics Education (WME)

#### Booth: 328

[www.wme-usa.org](http://www.wme-usa.org)

WME's general purpose is to promote the mathematics education of girls and women. The organization is also committed to working cooperatively with other organizations to further our common goals.

## Y

### YMIR, Inc./The Ultimate Puzzle

#### Booth: 427

Los Angeles, California  
PH: 310-673-1733 FX: 310-673-1733

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

The Ultimate Puzzle is an educational and fun manipulative tool that shows combinations, permutations, probabilities and symbol recognition in a powerful demonstration for all ages! Visit our booth #427 and solve our puzzle in 5 minutes or less, and it's free! It's also *fun!*

### You Can Do The Rubik's Cube!

#### Booth: 935

Danvers, Massachusetts  
PH: 617-379-2988 FX: 416-752-6022

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

Excite students while teaching common core, national and state standards! in response to teacher's requests, the You Can Do the Rubik's Cube Program provides a range of lesson plans, activities, and homework sheets with answers that support stem, geometry, algebra and general math, appropriate for grades 3–12 for \$49.99. You Can Do the Rubik's Cube Education Kit is perfect for your Students. Each kit includes everything needed including 12 Rubik's Cubes, to teach geometry, algebra, general math and STEM lessons while promoting 21st-century skills and meeting Common Core and State Standards. Qualified teachers may download all materials free from our Web site, [www.YouCanDoTheCube.com](http://www.YouCanDoTheCube.com).

## Z

### zeroing in on math llc

#### Booth: 425

Lawrenceville, New Jersey  
PH: 201-572-1302

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

We are a math teacher support company. Our products are designed by a creative math teacher who has taught math at every grade level. Our Web site, [zeroinginonmath.com](http://zeroinginonmath.com), is an adventure in support. We can also help your school district convert to the Common Core State Math Standards economically and effectively. Bring your challenges to us!



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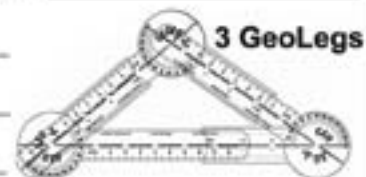
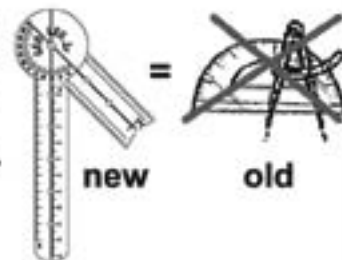
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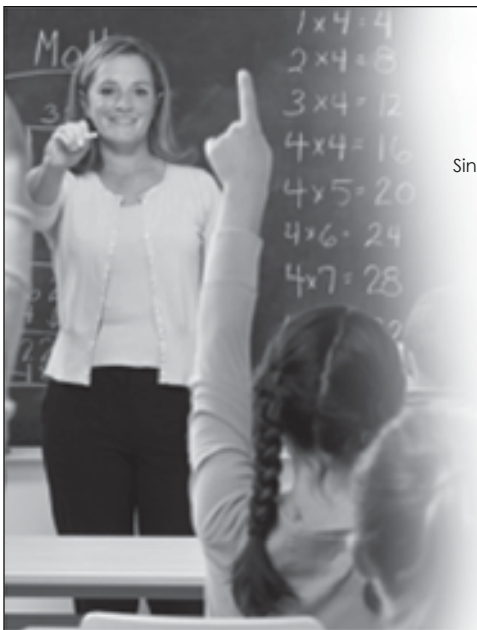
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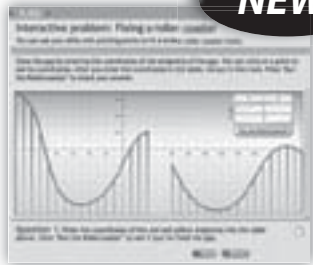
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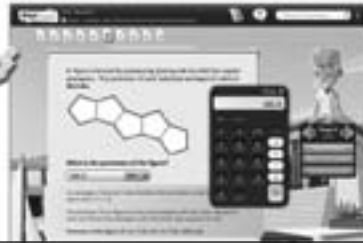
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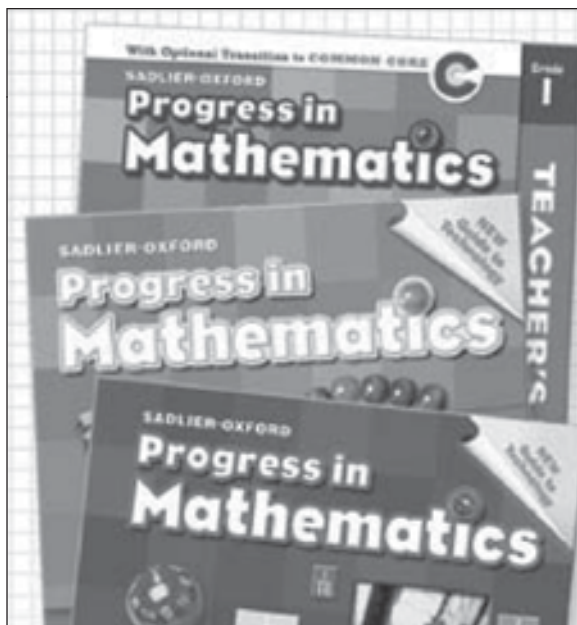
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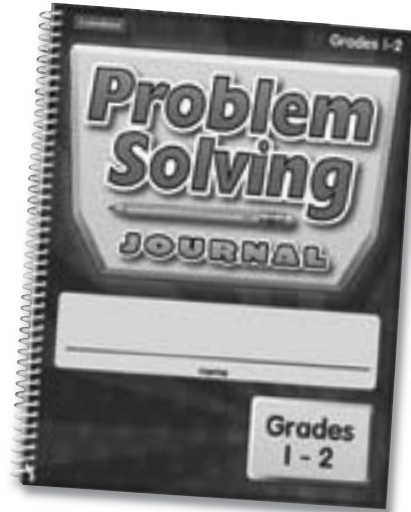
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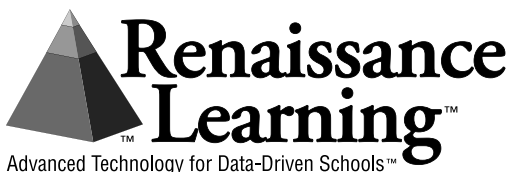
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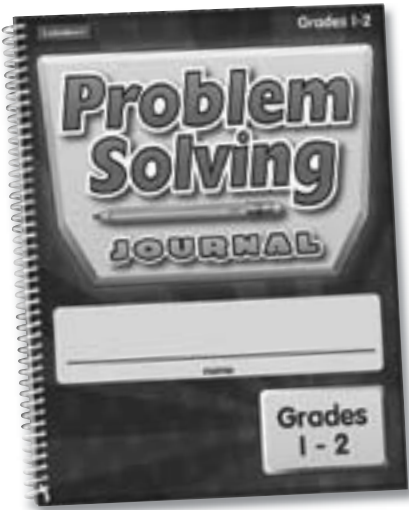
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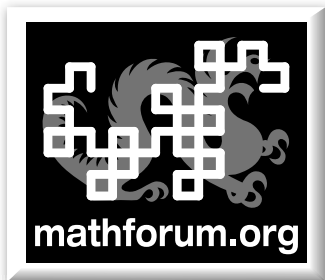
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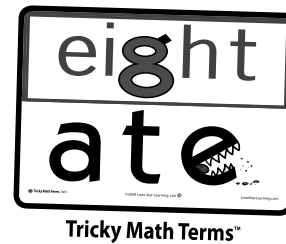
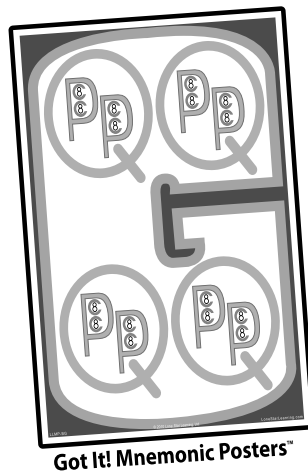
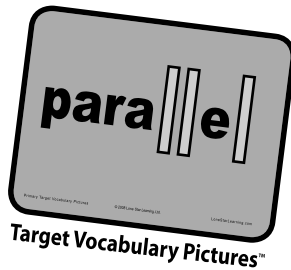
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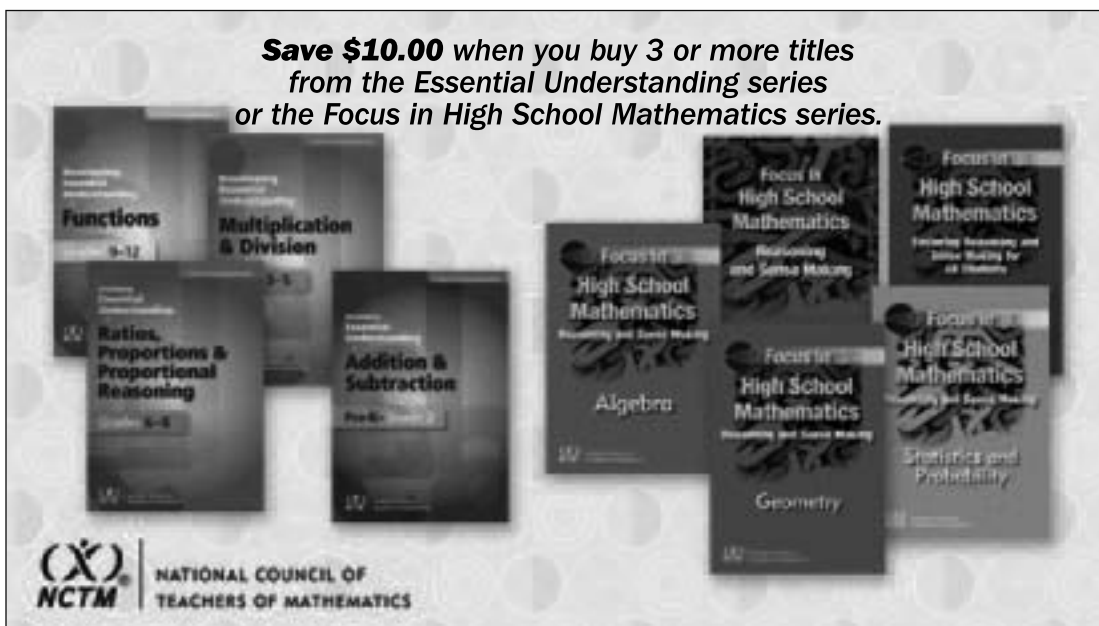


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