NCTM Regional Conference & Exposition 2017

ORLANDO | OCTOBER 18–20

PREMIER MATH EDUCATION EVENTS

Program Book

See valuable COUPONS beginning on page 97

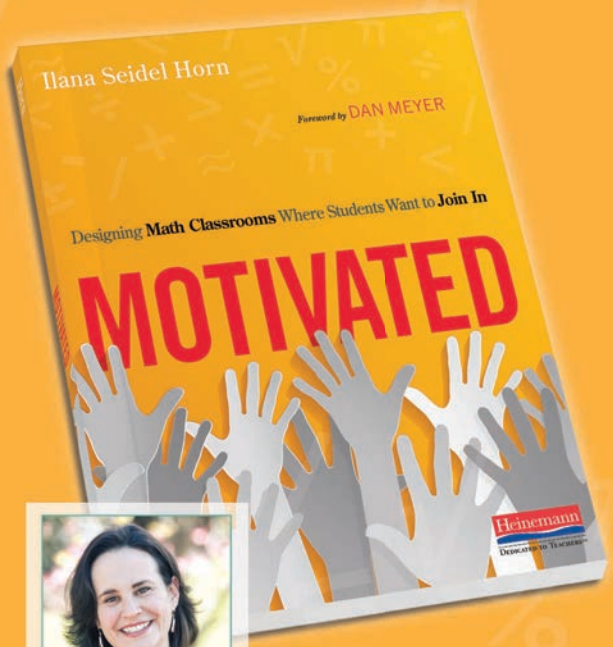
nctm.org/orlando

#NCTMregionals

NCTM® NATIONAL COUNCIL OF TEACHERS OF MATHEMATICS

Blank stares? One-word answers?

Sound like your math students?



ILANA SEIDEL HORN

Participating in math class feels socially risky to students. Staying silent often feels safer.

In *Motivated*, Ilana Seidel Horn shows why certain teaching strategies create classroom climates where students want to join in.

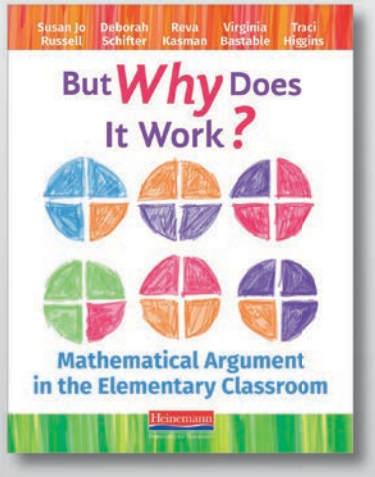
- Explore the **key factors** of motivational math classrooms.
- Discover **strategies** for weaving each factor into your instruction.
- Meet six math teachers who found that motivation requires **more than an interesting problem**.

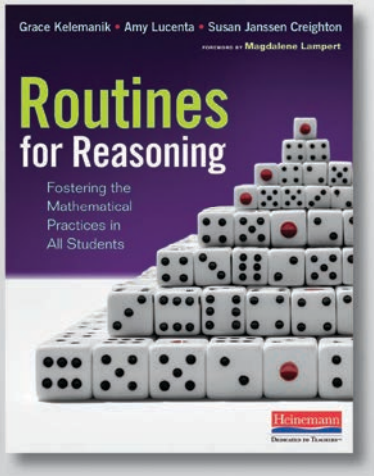
By examining what works in other classrooms and following the example of been-there teachers, you'll start changing slumped shoulders and blank stares into energetic, engaged learners.

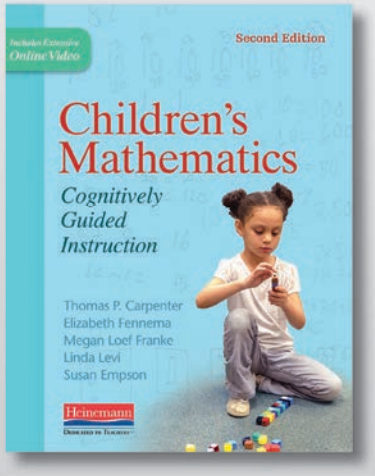
Available at Heinemann booth #512

Learn more at hein.pub/Motivated and on Twitter #MotivatedMath

Also from Heinemann







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Heinemann
Dedicated to Teachers

NCTM Regional Conference & Exposition 2017

ORLANDO | OCTOBER 18–20

HOST

Florida Council of Teachers of Mathematics (FCTM)

All Regional Conference presentations will be held at the West Building of the Orange County Convention Center. See pages 81–85 for floor plans.

REGISTRATION

Wednesday	4:00 p.m.	–	7:00 p.m.
Thursday	7:00 a.m.	–	3:00 p.m.
Friday	7:00 a.m.	–	12:00 p.m.

EXHIBITS

Wednesday	4:00 p.m.	–	6:00 p.m.
Thursday	8:00 a.m.	–	5:00 p.m.
Friday	8:00 a.m.	–	2:00 p.m.

NCTM CENTRAL

Wednesday	4:00 p.m.	–	6:00 p.m.
Thursday	8:00 a.m.	–	5:00 p.m.
Friday	8:00 a.m.	–	2:00 p.m.

nctm.org/orlando

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

Printed in U.S.A.

Welcome to Orlando!

Welcome to the NCTM Regional Meeting & Exposition in Orlando, Florida! The Program Committee is thrilled that you are able to join us here in Central Florida for this conference experience that will bring together classroom teachers; school, district, and state mathematics education leaders; administrators; mathematics teacher educators; mathematicians; and researchers from around the world.

While in Orlando, you'll have the opportunity to see and hear new ideas and approaches to help you do your part in providing a stronger and more robust mathematics education for each and every student. We hope you'll connect with friends and colleagues—both new and familiar—to share ideas and information. We've designed a conference that will encourage you to spend time not only learning from the experts as they present ideas in the sessions, workshops, bursts, but also taking advantage of the networking opportunities that will leave you energized and renewed.

These opportunities begin with the unique Opening Session on Wednesday evening, where you'll have the opportunity to hear from three exceptional mathematics educators from across the United States. Kaneka Turner, Ilana Horn, and Michael Fenton will share portions of their "stories" in quick 10-minute talks. In between these talks, you'll be able to instantly react to the talks and network with the mathematics educators in the session with you. You'll also hear related thoughts from other notable mathematics educators from around the world. It's an experience you don't want to miss!

We've also got hundreds of incredible breakout bursts, sessions, and workshops for you to choose from that span from pre-K through postsecondary mathematics education. These sessions are all focused around the eight conference strands. When choosing your sessions, take a careful look at these strands and consider your work for the upcoming school year. Pay close attention to the sessions chosen for the Florida Showcase strand. In this strand, which is intended to be inclusive for all conference participants, we are highlighting the great things happening in the state of Florida.

While you're here, be sure to take advantage of the opportunities in the Exhibit Hall. There you'll find numerous exhibitors who are willing and eager to talk to you about what they have to offer.

This conference runs on the efforts of hundreds of volunteers from in and around the State of Florida. Without the support of the Florida Council of Teachers of Mathematics, our Volunteer Committee Co-Chairs, Margaret Walker and Lisa Greco, and the entire Program Committee, we would not be here. We are so grateful for your time and your leadership.

We are excited to have you with us here in Orlando, Florida. There are plenty of things to explore after the conference ends each day, and we hope you'll find some happiness and joy in the Sunshine State.

Zachary Champagne
Program Committee Chair
FCR-STEM
Jacksonville, Florida

Lisa Greco
Volunteer Committee Co-Chair
St. Cloud High School
St. Cloud, Florida

Margaret Walker
Volunteer Committee Co-Chair
Orange County Public Schools
St. Cloud, Florida

The NCTM 2017 Regional Conference & Exposition officially begins on Wednesday with the Opening Session at 5:30 p.m. Presentations on Thursday and Friday begin at 8:00 a.m. and are scheduled concurrently throughout the day.

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

Please remember:

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

New and Preservice Teachers Workshop

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

Thursday 9:45 a.m.–11:00 a.m.
Room W311 EF, Orange County Convention Center

Friday 9:45 a.m.–11:00 a.m.
Room W305, Orange County Convention Center

Overview & Orientation

Whether you are new to the NCTM community or are a seasoned veteran, there is something exciting and engaging for everyone! In this presentation given by members of the Board of Directors, you will learn how to get the most of your conference experience. Learn what's new or discover an opportunity you've missed in the past, find out how to navigate presentations, learn how to use the NCTM app, and network with other attendees. Meet other first-time attendees and join conference mentors who share your particular interests.

Thursday and Friday
7:15 a.m.–7:45 a.m.
Room W203, Orange County Convention Center

Types of Presentations

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

Sessions (60 minutes) represent a common format where the speaker relates his or her ideas to an audience. Rooms are either theater style or classroom style and vary in size.

Workshops (75 minutes) are rooms set with round tables for hands-on work.

Bursts (30 minutes) are presentations that focus on a specific topic or idea. Rooms are set with round tables. The goal is information sharing, conveyed quickly and succinctly.

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

Grade Bands

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

- Pre-K–2
- Grades 3–5
- Grades 6–8
- Grades 8–10
- Grades 10–12
- Higher Education—university- and college-level issues including both two-year and four-year institutions
- Research
- Coaches/Leaders/Teacher Educators
- General Interest—issues of interest to multiple grades and audiences

Program Updates

Visit **nctm.org/orlando** for program updates including all the latest changes, cancellations, and additions. You can also follow along with the conference app to view event alerts and up-to-the-minute information.

Focus Strands

TEACHING STRATEGIES THAT PROMOTE LEARNING TEACH

Presentations will provide opportunities for participants to explore, identify, and/or develop high-quality mathematical tasks and instructional practices, as well as learn how to integrate them into existing practices.

ACCESS AND EQUITY FOR STUDENTS EQUITY

Presentations will investigate social justice, access, identity, and equity issues as well as effective methodologies aimed at addressing the needs of our diverse range of learners in an effort to ensure their success in today's mathematics classrooms.

EMPOWERING YOUR MATHEMATICS CURRICULUM EMPOW

Presentations will examine the key mathematical ideas and the importance of coherent learning progressions that foster mathematical connections within or between grades and the real world.

MATHEMATICS ACROSS THE CURRICULUM MATC

The sessions in this strand will be about making connections within mathematics, between mathematics and other subject areas, and among mathematics throughout the grade levels.

INCORPORATING MATHEMATICAL TOOLS AND TECHNOLOGY TOOLS

Presentations will focus on current and innovative practices that incorporate the strategic use of mathematical tools and/or technology that enhance students' learning and understanding of mathematics.

ASSESSMENT OF AND FOR LEARNING ASSESS

Presentations will emphasize best practices related to formative, diagnostic, and summative assessment and how to interpret and use the results before, during, and after instruction.

CULTIVATING PROFESSIONAL COLLABORATION AND GROWTH COLLAB

Presentations will focus on and explore ways to bring teachers together to create communities to support effective mathematics teaching through meaningful collaboration and ongoing professional learning.

FLORIDA SHOWCASE: MATHEMATICS IN ACTION FL

Presentations will highlight the innovative work happening in Florida's classrooms as well as the state-level policy issues that impact our work.

Insightful Education Sessions, Dynamic Exhibits

NCTM Regional Conferences & Expositions are an opportunity to share knowledge and learn with leaders in mathematics education. Gain new strategies to unleash the mathematical mind of each and every student.

- Improve your knowledge and skills with high-quality professional development and hands-on activities
- Connect and share with peers from throughout the region
- Collect free activities to engage and excite your students
- Explore an exhibit hall packed with exciting learning and giveaways
- Learn from education leaders and test the latest educational resources

What you'll walk away with:

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

Tips for a Rewarding Regional Conference & Exposition

- Get available speaker handouts at **nctm.org/PlanOrlando**.
- If you're experiencing the conference with your colleagues, attend different presentations and share your learnings with one another after the conference.
- Silence your cell phone during presentations.
- Be safe! Remove your name badge when you leave the conference facilities.

Registration and Access to Presentations

You must wear your badge to attend all presentations and to enter the NCTM Exhibit Hall. Please note that you will need to present a photo ID if you need a replacement badge.

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

For Your Child's Safety

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

Information Booth

The Information Booth will be in the Orange County Convention Center. Staff can answer your questions about Orlando and assist you with directions and local information, from transportation and historical sites to shopping and entertainment. In addition, you may retrieve or turn in lost-and-found items at the Information Booth. Unclaimed items will be turned over to Orange County Convention Center Security.

First-Aid Station

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

Presentation Handouts

Attendees can access available electronic presentation handouts through the conference app and online planner at **nctm.org/PlanOrlando**. Handouts will be available until January 2018.

Exhibits

Make time to visit the Exhibit Hall. The hours allow ample opportunity to explore, test, and purchase resources for your classroom. You'll also be able to meet product specialists, get fresh ideas, and watch demonstrations on how products will help you in your classroom. We've provided dedicated time to visit the exhibits; no presentations will take place from 12:00 p.m. to 1:30 p.m. on Thursday and Friday. Check out the list of exhibits on pages 88–91 and a map of the Exhibit Hall on page 86.

Exhibitor Workshops

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

Online Conference Planner

The Online Conference Planner is a great way for you to search the conference program book, set up your personal schedule, and download available presentation handouts. The Online Conference Planner is continually updated with the latest presentation changes and information. Visit **nctm.org/PlanOrlando** to check it out.

General Information

NCTM Central

Spend some time in NCTM Central! This exciting area has everything all in one convenient location, right at the entrance of the Exhibit Hall. You can't miss it!

Wednesday	4:00 p.m.–6:00 p.m.
Thursday	8:00 a.m.–5:00 p.m.
Friday	8:00 a.m.–2:00 p.m

- Whether you are a new NCTM member or a seasoned veteran, you can learn more about what your membership can do for you at **Member Services**. We can walk you through your benefits, including your online access to lessons, classroom-ready activities, online journal articles, and more. Make sure to stop by and pick up sample journals and other materials. Not a member or wish to renew your membership? Make sure to join NCTM or renew your membership onsite and be placed in a drawing for a $25.00 NCTM Gift Certificate! NCTM is its members!

- Browse the **NCTM Bookstore** and save **25% off the list price** on all purchases! View firsthand all the publications that NCTM has to offer. You will also find a variety of specialty products that you can use as gifts, prizes, and incentives to spread the word about the importance of mathematics. Start your wish list today by previewing NCTM's wealth of resources at **nctm.org/store**. The Bookstore is not equipped to handle shipping; the business center can assist you with your shipping needs.

- **Classroom Resources.** Drop by to learn more about the newest set of resources, **Activities with Rigor and Coherence (ARCs)**, or just to hear about all the exciting resources that are ready to use in your math classroom.

- **Networking Lounge.** Join us in our activity areas:

  Play and Learn
  - Play with materials from Math On-A-Stick at the Minnesota State Fair
  - Learn how to support student learning through play
  - Share your creations in person and on social media

  Relax and Recharge
  - Make use of charging stations
  - Take a seat and reflect with colleagues

  Problems of the Week Resources
  - Learn how to navigate to this classroom resource on the NCTM website
  - What are the advantages of using the Scenario?

- Discover available funding and resources to support you in your career and professional development with **Mathematics Education Trust (MET)** grants, scholarships, and awards. Visit **nctm.org/met**.

- Stop by **the Math Forum** to purchase or renew your Problems of the Week (PoW) subscription. Pick up information about our scheduled online PD courses, samples of problem-solving resources, and more. Visit **mathforum.org**.

NCTM App

Start planning early and stay connected throughout the event with the NCTM mobile app. Whether you have an iPhone, iPad, Android, or tablet, the app will be your onsite sidekick! Get the app and select your event to access these features and more.

- **Notifications**—View event alerts and up-to-the-minute information
- **Schedule**—Search sessions and speakers, create your own itinerary, download handouts, take notes, and make personal appointments
- **Timeline**—View and swap ideas, photos, and lessons with other attendees
- **Exhibitors**—Search, filter, take notes, contact and mark exhibitor s to visit
- **Directory**—Create your own profile and search for and message other attendees
- **Local Weather**—Get the forecast and current weather for the event city
- **Maps**—View floor plans and maps
- **Twitter**—Follow all the activity in the event stream

Visit **nctm.org/confapp** for more information.

HIGHLIGHTS

Opening Session, 1

GET SOCIAL

Stay informed and get connected with attendees by using **#NCTMregionals** on social media.

Conference App
nctm.org/confapp

Twitter
@NCTM

Instagram
@NCTM.math

Facebook
facebook.com/TeachersofMathematics

REGISTRATION HOURS

4:00 p.m.–7:00 p.m.

EXHIBIT HOURS

4:00 p.m.–6:00 p.m.

NCTM CENTRAL HOURS

4:00 p.m.–6:00 p.m.

FIRE CODES

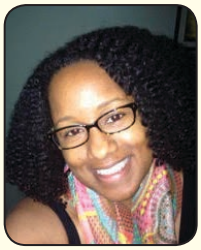
We have made every attempt to provide adequate seating for participants at the conference, but for your safety and because of fire regulations, only those with seats will be allowed in meeting rooms. To comply with fire codes, we will have to ask persons sitting on the floor or standing to leave the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

5:30 P.M.–7:00 P.M.

1
Opening Session

General Interest Session

We're doing something different this time: One session, three speakers, three topics.



Topic: Our Mathematical Stories: Identity, Community, and Connections

Description: How and what brings each individual to any given community is intriguing. We all have a story. When I look back over my math journey, I am often left in awe wondering how I got here. The more I settle in, the more curious I become about other members of our math community. So, what are our math stories? Who is in the room, and how did they get here? My goal in this conference is to find out. I cannot wait to connect with you.

Kaneka Turner
Statesville Road Elementary, Charlotte, North Carolina

Topic: What Good is Productive Struggle without Joyful Engagement? Motivating Students through Playful Mathematics

Description: Recent efforts to get children to think deeply about mathematical ideas have focused on productive struggle—the idea that teachers need to help students persist with challenging ideas to understand them. While struggle may be important to learning, it misses the motivational possibilities of mathematical play. I support this claim through a study we conducted following children through a mathematical playground. I pay special attention to the activity of children who disliked school math yet sustained their attention at the playground.

Ilana Horn
Vanderbilt University, Nashville, Tennessee

Topic: My Journey from Worksheets to Rich Tasks

Description: Lecture. Practice. Homework. Wash, rinse, repeat. For years I was stuck in this uninspiring cycle. I knew there was more, but I had trouble letting go of my example-centric approach. I'll share the lessons I've learned thus far in my ongoing escape from monotony, from the big picture of "Why" to the nuts-and-bolts details of "What" and "How."

Michael Fenton
Desmos, Fresno, California

Orange County Convention Center, Chaplin Theater (W320)

HIGHLIGHTS

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Instagram
@NCTM.math

Facebook
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REGISTRATION HOURS

7:00 a.m.–3:00 p.m.

EXHIBIT HOURS

8:00 a.m.–5:00 p.m.

NCTM CENTRAL HOURS

8:00 a.m.–5:00 p.m.

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7:15 A.M.–7:45 A.M.

2
Regional Conference Overview & Orientation

General Interest Session

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

Orange County Convention Center, W203

8:00 A.M.–9:00 A.M.

3 EQUITY
Bridging the Parent Math Gap: Engaging Mathematics Education for Parents

Pre-K–2 Session

Mathematics teaching has changed since your students' parents were in school. And parents are integral to student success. Put these together and you have a high need for parent math education. Join this session to plan impactful parent math education and help your parents bridge their math gaps to better support their children.

Maria Franshaw
River Oaks Baptist School, Houston, Texas

Orange County Convention Center, W303

4 TEACH
Context for Learning: Setting a Scene That Develops Mathematical Understanding

6–8 Session

Through the use of an initial context, this workshop offers instructional strategies that will help construct a conceptual understanding of key mathematical ideas. Through the use of literature, multimedia, and technology, participants will explore how purposefully selecting a context can unlock students' background knowledge, prior to the formalized teaching of concepts.

Jenise Sexton
Gwinnett County Public Schools, Suwanee, Georgia

Orange County Convention Center, W204

5 EQUITY
Experiences to Teach Tomorrow's Lessons

10–12 Session

From everyday moments to worldwide events, opportunities for math teaching lie within. This workshop will show how to connect the math content you know to the moments and events you see every day. It will provide you with the tools and technology necessary to create exciting lessons and hooks for your students every day.

Denis Sheeran
@MathDenisNJ
School District of the Chathams, Chatham, New Jersey

Orange County Convention Center, W312

6 TEACH
Implementing Student Generated Rubrics to Goal Set, Self-Assess, and Drive Your Mathematics Classroom

Pre-K–2 Session

Help students understand the purpose of each lesson, but more importantly help them to recognize their individual progress and to ultimately to drive their own learning with the use of rubrics. In this session, you will learn how to lead your class to build standard-driven rubrics and how to facilitate goal setting, self-assessment, and reflection.

Jennifer Willis
Sarasota County Schools, Florida
Tressa Ostrowski
Sarasota County Schools, Florida

Orange County Convention Center, W311 ABC

7 TEACH
Keys for Fostering Conceptual Understanding

General Interest Session

New standards provide a heightened emphasis on conceptual understanding. What does it mean to have conceptual understanding? How can you foster it in your students? How do you know when they have it? Come explore four keys to developing conceptual understanding. Tasks and video will help make sense of conceptual understanding and procedural fluency.

Janet Andreasen
University of Central Florida, Orlando

Orange County Convention Center, W202

8:00 A.M.–9:00 A.M.

8 FL
LOCUS: An Assessment and Professional Development Resource to Teach Statistics

General Interest Session

This session will share the freely available professional development materials that complement the suite of NSF-funded LOCUS assessments. Peer-reviewed items aligned with standards will be presented along with commentaries that are designed to help teachers understand changes in the way statistics will be assessed on high-stakes assessments.

Tim Jacobbe
University of Florida, Gainesville

Orange County Convention Center, W110

9 FL
Math Nation: Engaging Students and Empowering Teachers of Algebra 1, Geometry, and Algebra 2

10–12 Session

Math Nation is a dynamic, collaborative online resource that is being used in 100 percent of Florida's school districts. Come learn about the latest updates and additions to Math Nation, designed to support teachers' efforts in deepening students' conceptual knowledge of algebra 1, geometry, and algebra 2 and in achieving student success.

Joy Schackow
@MathNationFL
University of Florida, Gainesville

Orange County Convention Center, W308 AB

MATC Mathematics Across The Curriculum
TOOLS Incorporating Mathematical Tools And Technology
COLLAB Cultivating Professional Collaboration And Growth
FL Florida Showcase: Mathematics In Action

8:00 A.M.–9:00 A.M.

9.1 EMPOW
Making Sense of Students' Alternative Mathematical Conceptions to Inform Teaching

General Interest Session

Students' alternative mathematical conceptions or misconceptions are usually formed from a position of sense making based on the students' ways of learning. Thus, teachers must make sense of misconceptions from the students' perspectives to meaningfully support the learning of each and every student. This topic will be discussed with classroom-based examples and teaching strategies.

Olive Chapman
Board of Directors, National Council of Teachers of Mathematics, Reston, Virginia; Werklund School of Education, Calgary, Alberta, Canada

Orange County Convention Center, W109

10 TEACH
Moving beyond Memorization: Redefining Multiplication/Division Fluency Instruction

3–5 Session

Redefine fluency instruction in your math classroom! Develop an understanding of how to create mathematically fluent students by exploring learning progressions, strategies, and meaningful practice activities that lead to the automaticity required for students to be considered fluent. Leave with a new perspective on fluency instruction.

Susan Loveless
Rutherford County Schools, Murfreesboro, Tennessee

Orange County Convention Center, W307 AB

11 ASSESS
Classroom Dessert: Putting Assessment Into Students' Hands

8–10 Session

A fine meal is topped off by a carefully crafted dessert; in the classroom, it's called "assessment," and it often lacks flavor. An author of *The Classroom Chef* rethinks how we assess our students, and how we can empower them by tapping into their voice. Leave with ready-to-use resources for authentic assessment in your class.

Matthew Vaudrey
Bonita Unified School District, San Dimas, California

Orange County Convention Center, W300

12 TOOLS
The Hybrid Flipped Math Classroom: Increased Discourse and Problem Solving

8–10 Session

As the flipped model grows increasingly popular, teachers are met with new challenges. These include promoting classroom discourse and fostering rich exploration and problem-solving experiences for their students. In this session, wel will discuss the many structures and technology tools teachers can use to create these important experiences for their students.

William Tozzo
Bedford Schools, New York

Orange County Convention Center, W103

13 EMPOW
The Power of Solving Problems "My Own Way"

3–5 Session

Learn how to use a single story problem approach to deepen the rigor of learning. Embracing traditional and invented strategies, students will be able to solve multistep problems and explain their thinking. When students are able to understand their classmates' solving strategies, they also deepen and advance tbvheir understanding. Use these strategies tomorrow!

Joanna Lee
Red Bug Elementary School, Casselberry, Florida
Tisha Greek
Seminole County Public Schools, Casselberry, Florida

Orange County Convention Center, W308 CD

TEACH Teaching Strategies That Promote Learning
EQUITY Access And Equity For Students
EW Exhibitor Workshop
EMPOW Empowering Your Mathematics Curriculum
ASSESS Assessment Of And For Learning

8:00 A.M.–9:15 A.M.

14 EMPOW
Achieving Math Fact Fluency for Addition and Subtraction—Every Teacher's Responsibility!

Pre-K–2 Workshop

This workshop will focus on nontraditional strategies for achieving fact fluency with addition and subtraction facts and with understanding of these two operations. Participants will experience how to create a routine of five to nine minutes daily of practice outside of the teaching lesson for mathematics.

Kimberly Sutton
Creative Mathematics, Arcata, California

Orange County Convention Center, W203

15 FL
Building Number Sense the Singapore Way

3–5 Workshop

Participants will learn different strategies to teach understanding of math in stages beginning with concrete, then moving to pictorial, and finally working in the abstract. Participants will walk away with strategies that force students to think about the math they are doing and that are known to develop fluency and mental math.

Maquissia Garcon
@HTAMgeek
Palm Beach County School District, West Palm Beach, Florida

Orange County Convention Center, W104

16 ASSESS
Developing Standards-Based Grading within Mathematics Classrooms

Coaches/Leaders/Teacher Educators Workshop

What does a "B" or 87.6% convey? How can feedback be provided more effectively to support students' continued persistence in learning and adoption of a growth mindset in learning mathematics? This how-to workshop shares our journey and evolving understanding in aligning students' true proficiencies in learning with proper feedback and grade.

Darshan Jain
Adlai E. Stevenson High School District 125, Lincolnshire, Illinois

Orange County Convention Center, W305

17 TEACH
Experiencing Instructional Routines That Engage ALL Learners

8–10 Workshop

Can we teach mathematics in ways that engage and support all learners and that build student capacity to have meaningful conversations about math while working together to understand multiple solution strategies? Yes we can! Participants will experience and discuss an inquiry-oriented instructional routine called Contemplate then Calculate.

Sara Toguchi
New Visions for Public Schools, New York, New York
Jennifer Lee Kim
New Visions for Public Schools, New York, New York
Liz Ramirez
New Visions for Public Schools, New York, New York

Orange County Convention Center, W311 GH

18 TEACH
Eye the Prize

Pre-K–2 Workshop

Experience the delight of math through a child's eyes using activities to develop conceptual and perceptual subitizing skills. Activities will focus on counting skills, operations and algebraic thinking, cardinality, and numbers and operations in base ten. The prize will be your students' understanding! Activities and website materials will be available.

Denise McDowell
Big Ideas Learning, Erie, Pennsylvania

Orange County Convention Center, W311 D

19 EMPOW
How Do You Engage Your Reluctant Learners? . . . Mathematical Modeling!

10–12 Workshop

Dive into high-interest modeling lessons. Unlike "real-world problems," reality-based mathematical modeling lessons present students with conceptual modeling. Get support for mathematics standards that require students to identify variables, formulate a model, perform skills, and interpret and validate results.

Deborah McGinley
Math Consultant, Orlando, Florida
Kelly Kukell
Math Consultant, Orlando, Florida

Orange County Convention Center, W102

8:00 A.M.–9:15 A.M.

20 TEACH
Just Give Me the Facts—But with Understanding Rather Than Gimmicks!

Pre-K–2 Workshop

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

James Burnett
ORIGO Education, Inc., St. Charles, Missouri

Orange County Convention Center, W307 CD

21 TOOLS
Making Math Contextual, Visual, and Concrete with Technology

6–8 Workshop

Embark on a journey to create a collaborative mathematics learning environment where new learning goals are delivered through the use of contextual tasks that can be solved using the inquiry process. Technology can then be used to explore the many tools and representations students utilized as a pathway to reveal and consolidate new strategies.

Kyle Pearce
@MathletePearce
Greater Essex County District School Board, Windsor, Ontario, Canada

Orange County Convention Center, W105

22 TEACH
Sequencing Tasks for Success

8–10 Workshop

Come learn about sequencing tasks for learning. What leads into a rich task? And then what continues the learning, supporting strugglers while challenging others? What mini-lessons could provide needed practice? We'll look at sequences of important low floor/high ceiling lesson structures: investigations, math congresses, problem strings, and talks.

Pamela Harris
University of Texas at Austin

Orange County Convention Center, W309

23 EMPOW
Statistical Reasoning: The Pathway to Inference

10–12 Workshop

New standards call for beginning inferential reasoning in the middle grades with an emphasis on simulation. We will examine how this can play out as students move into high school, what key concepts are important in this pathway, how technology can help students develop the necessary understandings, and what the implications are for advanced placement statistics.

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

Orange County Convention Center, W101

24 EQUITY
Three-Reads: Learn an Instructional Routine That Teaches ALL students to "Read like a Mathematician"

3–5 Workshop

Many students struggle to independently read and make sense of complicated math problems, particularly ELLs and struggling readers. We will identify what makes reading a math problem difficult and what successful math readers attend to. Participants will learn the Three-Reads instructional routine and be ready to implement it in their classroom.

Grace Kelemanik
Kelemanik Consulting, Natick, Massachusetts
Amy Lucenta
Consultant, Natick, Massachusetts

Orange County Convention Center, W311 EF

25 TEACH
Unpacking Fractions: Teaching and Learning Fractions with Understanding

3–5 Workshop

The beginning of fractions is often the end of students' love for math because sense making yields to senseless memorization. Fractions are hard to teach and hard to learn: they usher us into the multiplicative world. Drawing on twenty-five years of PD and other work on the topic, the speaker unpacks common misconceptions, big math ideas, important teaching tips, engaging tasks, fraction apps, and bridges to algebra.

Monica Neagoy
Monica Neagoy Mathematics Consulting, Arlington, Virginia

Orange County Convention Center, W108

9:30 A.M.–10:30 A.M.

26 EMPOW
3-Act Tasks: Filling the Void of Mathematical Modeling in the Elementary Grades

Session

As elementary educators, we've misinterpreted the term "model" as simply the use of manipulatives. This is causing our students to miss the mark when it comes to modeling with mathematics. Through the use of 3-act tasks, we will explore what mathematical modeling is, what it looks like, and how we can support this work in our elementary classrooms.

Graham Fletcher
Griffin-Spalding County Schools, Griffin, Georgia

Orange County Convention Center, W311 ABC

27 FL
5E + 3-Act = 8 Mathematical Practices

6–8 Session

Grab your smartphone or tablet, and take a picture that can launch a thousand problems. Learn how the 5E instructional model and 3-act tasks bring the math practices to life.

Joseph McNaughton
Polk County Public Schools, Bartow, Florida

Orange County Convention Center, W308 CD

28 EMPOW
Beginning Processes: A New Perspective on Early Mathematics

Pre-K–2 Session

When children are born they are thrust into a world of stimuli. They begin to make connections between what they see, hear, and engage with. Today we will explore the beginning processes of early mathematics and why these essential concepts lay a solid foundation and how they are the cornerstone for mathematical understanding.

Jessica Bobo
ORIGO Education, Inc., Earth City, Missouri

Orange County Convention Center, W202

29 EMPOW
Breaking the Rules (Expiring Ones, That Is) and Cleaning Up Your Language!

General Interest Session

We will engage participants in a discussion of common rules and vocabulary shared by teachers in K–12 that students tend to overgeneralize, such as tricks and tips that do not promote conceptual understanding, rules that "expire" later in students' mathematics careers, and vocabulary that isn't precise. CCSSM "expiration dates" will be shared!

Sarah Bush
@sarahbbush
University of Central Florida, Orlando
Karen Karp
Johns Hopkins University, Baltimore, Maryland
Barbara Dougherty
University of Hawaii at Manoa

Orange County Convention Center, W109

30 EQUITY
Differences in Language and Culture Impact Equity and Access—Right?

Coaches/Leaders/Teacher Educators Session

Join us for a game that explores the relationship between communication and cultures. Experience challenges faced by individuals from a nondominant culture. Reflect and discuss the impact that these differences have on learning mathematics. Use this game as a tool to begin discussions with colleagues about equity, access, and empowerment.

Bob McDonald
TODOS: Mathematics for ALL, Tempe, Arizona
Nora Ramirez
TODOS: Mathematics for ALL, Tempe, Arizona

Orange County Convention Center, W110

Thursday

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

MATC Mathematics Across The Curriculum
TOOLS Incorporating Mathematical Tools And Technology
COLLAB Cultivating Professional Collaboration And Growth
FL Florida Showcase: Mathematics In Action

9:30 A.M.–10:30 A.M.

31 COLLAB
Global Remediation of Remedial Mathematics—A Fulbright Specialist Project

Higher Education Session

Remedial math education has not only become part of the global debate, it has also for several decades been a controversial topic within national and international higher education agencies. I will present my recent Fulbright project experience to identify key elements related to the challenges encountered in teaching remedial math courses.

Noureen Khan
University of North Texas at Dallas

Orange County Convention Center, W300

32 ASSESS
Gradient Assessment! Taking Your Students Where They Have Never Been Before!

8–10 Session

Too many students are not proficient on high-stakes assessments because we have not prepared them sufficiently with assessments in the classroom. Gradient assessment will not only bridge this gap, but it will also motivate your students to ask more "Why?"/"What if?" questions than you ever thought possible. Deep conceptual understanding is a test away.

Jess McMurray
Soda Springs High School, Idaho

Orange County Convention Center, W307 AB

33 FL
If We Could See the Mind, We Wouldn't Teach Fact Fluency the Way We Do

Pre-K–2 Session

Are you concerned that your students are expected to drill number facts before they are ready? In this session, we will talk about cognitive science, walking up and down stairs, Yoda, and fact fluency. You will leave with a new perspective on fluency and how to decide when it is (and is not) the right time for your students to drill number facts.

Robert Schoen
Florida State University, Tallahassee

Orange County Convention Center, W308 AB

34 TEACH
Moving beyond Memorization: Making Sense of Fractions through Discovery

3–5 Session

Exploring fraction concepts through hands-on investigations allows our students to discover rules and make sense of how fractions work. Learn ways to orchestrate simple investigations in which students create models, gather and observe data, test their thinking, discuss their conjectures, and deepen their understanding of fractions.

Susan O'Connell
Quality Teacher Development, Millersville, Maryland

Orange County Convention Center, W312

35 COLLAB
NCTM's Mathematics Education Trust Grants and Scholarships: What Do I Need to Do to Be a Recipient?

General Interest Session

The Mathematics Education Trust (MET) supports teachers, schools, and students with funds for materials, lesson development, conference attendance, courses, professional development, technology, and action research. Learn what's available and how to apply. Hear tips for choosing the most appropriate award for you and enhancing your chances to win it!

Linda M. Fulmore
Chair, MET Board of Trustees

Orange County Convention Center, W103

36 TOOLS
Online Simulations: What, How, and Why?

6–8 Session

Learn about new, free middle school math online simulations, lessons, and activities developed by the Physics Education Technology (PhET) university researchers and classroom teachers. Participants will learn how the simulations work, how to access them, and leave with examples of PhET lesson plans and activity sheets.

Mary Burr
Augusta Raa Middle School, Tallahassee, Florida
Ian Whitacre
Florida State University, Tallahassee
Kelly Findley
Florida State University, Tallahassee

Orange County Convention Center, W204

9:30 A.M.–10:30 A.M.

36.1 EW TOOLS
Crazy 8's Club Gets Kids Fired Up about Math!

Pre-K–2 Exhibitor Workshop

Crazy 8s is a high-energy after-school club for K–5 kids with off-the-wall activities like Glow-in-the-Dark Geometry and Toilet Paper Olympics. Bedtime Math provides free kits including directions and materials. Schools provide a coach and minimal additional supplies. Workshop participants will get hands-on experience running the club's activities.

Bedtime Math Foundation
Summit, New Jersey

Orange County Convention Center, W304GH

36.2 EW TEACH
Embracing *Principles to Actions*

8–10 Exhibitor Workshop

Wondering how to incorporate *Principles to Actions* in your school? Let CPM show you! For over 25 years, CPM has provided rich mathematics curricula that is student centered and problem based and that encourages thinking, persevering, and sense making. Experience the excitement that students do when they explore CPM's curriculum. Receive free access to the curriculum.

CPM Educational Program
Elk Grove, California

Orange County Convention Center, W304CD

36.3 EW TEACH
New to Notebook Foldables®?

General Interest Exhibitor Workshop

Turn on the motivation factor with hands-on three-dimensional graphic organizers. Discover how to morph student notebooks into three-dimensional, individualized, and brain-smart tools. Participants will create a bound book to use as their "notebook" and will leave the session with at least five Foldable® samples that they have learned to create.

Dinah-Might/Dinah.com
San Antonio, Texas

Orange County Convention Center, W304EF

36.4 EW EMPOW
Advanced Algebra with Financial Applications—The Perfect 3rd or 4th Year Math Course for Everybody

10–12 Exhibitor Workshop

Hear author/teacher Robert Gerver present the brand new 2nd Edition of *Financial Algebra*. Topics from algebra 2, trig, statistics, probability, geometry, and precalculus are used to cover income taxes, banking, credit, auto insurance, investing, mortgages, and more. Learn about this engaging, successful, and proven program. Free book to attendees!

National Geographic Learning/Cengage Learning
Boston, Massachusetts

Orange County Convention Center, W304AB

9:45 A.M.–11:00 A.M.

37 TEACH
Building a Passion for Math through Student Questioning and Creativity

6–8 Workshop

Engaging students is an important part of teaching and learning. Building passion allows for deeper understandings to be built. Participants will discuss the differences between engaging students and building passion for math, engage in the practice of self-questioning, and learn how to find and use tasks that encourage this math passion building.

Michael Wiernicki
Henry County Schools, McDonough, Georgia

Orange County Convention Center, W307 CD

Gain more from your conference experience—continue the conversation in the NCTM app! Learn more at **nctm.org/confapp**.

9:45 A.M.–11:00 A.M.

38 EQUITY
Connecting Representations Routine: Learn to Foster Structural Thinking in ALL Students

3–5 Workshop

Math makes sense when structural connections are clear. Experience and unpack a robust instructional routine that leverages multiple representations to make structural connections transparent to all students, including English language learners and students with learning disabilities. Participants will leave ready to support ALL their students!

Amy Lucenta
Consultant, Natick, Massachusetts
Grace Kelemanik
Consultant, Natick, Massachusetts

Orange County Convention Center, W309

39 EMPOW
Financial Literacy: Skills and Concepts at the Primary Level

Pre-K–2 Workshop

Financial literacy is an important life skill, yet how are we fostering understanding in our youngest students? This workshop will give participants the opportunity to engage in tasks that help build a foundation for financial literacy in the primary classroom. Learn what material and manipulatives are available to support our littlest consumers.

Lindsay Gold
@lindsayanngold
University of Dayton, Ohio
Michael Houston
Riverside Beaver County School District, Ellwood City, Pennsylvania
John Ashurst
T3 National Instructor, Harlan, Kentucky

Orange County Convention Center, W311 EF

Get social! Stay informed and get connected with attendees by following **#NCTMregionals** on social media.

40 TEACH
Incorporating Literacy Strategies to Get a 5 on the AP Calculus Exam

10–12 Workshop

Teachers will explore a variety of practical research-based literacy strategies to use with their students to answer AP Calculus questions. These techniques, such as annotating, will enable students to gain a deeper understanding of what is being asked and how to approach multiple choice and free response questions to achieve full credit.

Christina Pawlowski
Commack High School, New York
Lawrence Maggio
Plainedge High School, North Massapequa, New York

Orange County Convention Center, W305

41 FL
Make Magnificent Math Mistakes!

8–10 Workshop

This session will actively involve all participants in strategies that show how mistakes greatly benefit our students. We will discuss how students can find mistakes, correct mistakes, and create mistakes they think other students may make in order to better understand the material.

Daniel Fisher
Berkeley Preparatory School, Tampa, Florida

Orange County Convention Center, W104

42 TEACH
Math Talks: Adapting the Number Talks Structure for Secondary Mathematics Classrooms

6–8 Workshop

How can effective number talk routines be adapted to meet the needs of secondary classrooms? Explore strategies and resources for implementing math talks in grade 6 through Algebra. See how math talks can provide opportunities for students to communicate and justify mathematical ideas, reasoning, and arguments within a concise, organized classroom structure.

B. Michelle Rinehart
Region 18 Education Service Center, Midland, Texas

Orange County Convention Center, W102

TEACH Teaching Strategies That Promote Learning
EQUITY Access And Equity For Students
EW Exhibitor Workshop
EMPOW Empowering Your Mathematics Curriculum
ASSESS Assessment Of And For Learning

9:45 A.M.–11:00 A.M.

43 COLLAB
New and Preservice Teachers Workshop

Coaches/Leaders/Teacher Educators Workshop

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

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

Orange County Convention Center, W311 GH

44 FL
Number Talks: The Best Way to Build Number Sense with Your Students!

Pre-K–2 Workshop

What are number talks and why use number talks in your classroom? This session will provide answers to those questions and show you how to do number talks effectively.

Robin Levin
@RobinLevin7
Pine Jog Elementary School, West Palm Beach, Florida
Laura Tomas
Orchard View Elementary School, Delray Beach, Florida

Orange County Convention Center, W105

45 EMPOW
This Is Why We Play: Solving Problems with NBA Data

8–10 Workshop

Will Steph Curry be the three-point king until the 2020 election? What formula can be used to predict players for the All-NBA Team? From where on the court are bank shots possible? Using NBA data and diagrams, we'll create models to answer these questions and others. You miss 100 percent of the shots you don't take—don't miss this one! #mathslamdunk

Patrick Vennebush
Discovery Education, Falls Church, Virginia

Orange County Convention Center, W101

46 TOOLS
Transformational Geometry in 15 Seconds or Less? Immediate Interactive Investigations in Grades 8–11!

8–10 Workshop

Get hands-on experience with Play-Investigate-Explore-Discover geometric properties in 15 seconds! Using a handheld, iPad, or software, students become engaged quickly. And deeply. Get all 25+ free activities and student/teacher materials, and see how to implement them. Integrate creative exploration and pedagogy via technology, visualization, and collaboration.

Tom Reardon
Youngstown State University/Fitch High School, Poland, Ohio

Orange County Convention Center, W108

47 EMPOW
Using Children's Intuitive Understanding to Build Base-Ten Concepts: A CGI Approach for K–5

3–5 Workshop

In cognitively guided instruction (CGI) classrooms, students' understanding of base ten progresses when they use their own strategies for solving problems and discuss their strategies with each other. CGI problem types for teaching base ten and the CGI developmental trajectory for learning base ten (whole numbers and decimals) will be presented.

Linda Levi
Teachers Development Group, Madison, Wisconsin

Orange County Convention Center, W203

48 TOOLS
Using the Area Model to Teach Multiplying, Factoring, and Dividing Polynomials

10–12 Workshop

Manipulatives in a secondary math classroom? You'll see how successful it can be. Participants will be actively engaged in using algebra tiles and the area model to multiply polynomials. Then we will do factoring and completing the square. Finally, we will use the area model to do polynomial long division. The important part is the transition.

Christine Mikles
Consultant, Post Falls, Idaho

Orange County Convention Center, W311 D

11:00 A.M.–12:00 P.M.

50 TEACH
Evaluating Performance Tasks for Effectiveness

6–8 Session

Performance tasks help students demonstrate the internalization of knowledge. Session participants will learn the key features of well-written performance tasks, how to quickly evaluate resources for effectiveness, and how to infuse their teaching with well-written performance tasks in order to create a culture of critical thinking in their classrooms.

Jan Scott
Houghton Mifflin Harcourt, Boston, Massachusetts
Dennis Ortman
Houghton Mifflin Harcourt, Boston, Massachusetts

Orange County Convention Center, W103

51 FL
Exploring the Statistics of Algebra 2

10–12 Session

In this session, we will explore some fun and creative ways to attack the statistics and probability standards of algebra 2.

Robin O'Brien
Palm Beach County Schools, West Palm Beach, Florida

Orange County Convention Center, W308 AB

Need funding for professional development? Check out grant opportunities from the **Mathematics Education Trust**. The next deadline to apply is November 3. Visit the MET area in **NCTM Central** to learn more.

52 EQUITY
Honoring Student Identities: An Examination of American Indian Blood Quantum

10–12 Session

Math has been and continues to be used to help us better understand our world and surroundings. Participants will examine this notion through a study on blood quantum of American Indians. This session aims to acknowledge the many identities of our students and how to best reflect and empower those identities within a math setting.

Kassie Benjamin-Ficken
Minneapolis Public Schools, Minnesota

Orange County Convention Center, W311 ABC

53 EQUITY
Making Math Class Safe Again

Pre-K–2 Session

Math is often referred to as the "stepchild" of content areas. There are hundreds of horror stories that make up this negative perception and even more proposed solutions to the problem. After hearing much pontification, I was inspired to ask the children studying math for potential solutions. They were so simple it was scary.

Kaneka Turner
@kanekaturner
Statesville Road Elementary, Charlotte, North Carolina

Orange County Convention Center, W202

54 EQUITY
Native American–Based Mathematics Materials for the Classroom

General Interest Session

This session presents mathematics materials based in the culture and mathematics of Native American peoples for integration into K–12 or undergraduate courses. These materials-both paper and electronic-are classroom ready, and are developed and piloted in consultation with tribes throughout the West.

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

Orange County Convention Center, W300

11:00 A.M.–12:00 P.M.

55 EQUITY
Not Just Answering Someone Else's Questions: Making Math Class More Like Mathematics

3–5 Session

Mathematicians say mathematics is full of wonder, discovery, and curiosity. Most students use different words to describe it. I've studied the discipline of mathematics and the realities of math classes, seeking out colleagues who close the gap between the two. What can we learn from teachers whose students ask and answer their own math questions?

Tracy Johnston Zager
Consultant, Portland, Maine

Orange County Convention Center, W109

56 EQUITY
President's Address: Empowerment through Access and Equity

General Interest Session

We have a longstanding and seemingly intractable problem in mathematics education: inequity. Children of certain racial, ethnic, language, gender, ability, and socioeconomic backgrounds experience mathematics education in school differently, and many are disaffected by their mathematics education experience. This session will address why we teach mathematics and the actions educators can take to challenge structural obstacles and implement equity-based instructional practices.

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

Orange County Convention Center, W110

57 EQUITY
Social Justice Activities and Mathematics Lessons for the Secondary Classroom

8–10 Session

It is possible to infuse social justice learning and rich mathematics learning into the same lesson. Attendees will learn strategies for beginning the conversation with students and colleagues. Effective lesson design, lesson study, social justice task analysis, reflective questioning, and other protocols are all a part of this interactive session.

Linda M. Fulmore
Consultant, Cave Creek, Arizona

Orange County Convention Center, W308 CD

58 EMPOW
Stepping toward Algebraic Thinking with Patterns and Non-Routine Problems

8–10 Session

Prime your students for algebraic thinking by helping them to identify patterns in a structured and function-minded way. Take their intuitive drive to "find the next step" and funnel it into developing the mathematical practices needed to succeed with non-routine problems. Plant the seed for ideas students will explore in algebra 2 and calculus.

Carl Oliver
City-As-School, Brooklyn, New York

Orange County Convention Center, W204

11:00 A.M.–12:00 P.M.

59 COLLAB
Supporting Teacher Learning and Collaboration through a Weekly Math Meeting Model

General Interest Session

We will describe a model for weekly math meetings and our experiences using it to support 30+ teams of teachers in implementation of formative assessment. In this model, teachers engage collaboratively on a weekly basis to analyze student thinking and discuss ways to help students advance their understanding of near- and far-term learning goals.

Charity Bauduin
Florida State University, Tallahassee
Robert Schoen
Florida State University, Tallahassee
Wendy Bray
Florida State University, Tallahassee

Orange County Convention Center, W307 AB

60 TOOLS
Using Digital Tools to Give Every Student a Voice

6–8 Session

Simply put, we value student thinking. Technology tools that help us gather, examine, and share students' mathematical thinking inform our instruction and help create a growth-mindset classroom culture. Bring a tablet or laptop, and be ready to wear your "teacher hat" and "student hat" as you experience strategies to try in your own classroom.

Cathy Yenca
Eanes Independent School District, Austin, Texas

Orange County Convention Center, W312

Thursday

TEACH Teaching Strategies That Promote Learning
EQUITY Access And Equity For Students
EW Exhibitor Workshop
EMPOW Empowering Your Mathematics Curriculum
ASSESS Assessment Of And For Learning

11:00 A.M.–12:00 P.M.

60.1 EW TEACH
Using Routines to Make Math Accessible and Promote a Growth Mindset in the Discourse Rich Classroom

3–5 Exhibitor Workshop

How can teachers make math accessible for students so that all students can achieve greater mathematical proficiency and experience rigor within a collaborative structure? This workshop will cover how to use math routines to establish norms that will keep the discourse structured and focused on math while promoting a growth mindset.

Curriculum Associates
North Billerica, Massachusetts

Orange County Convention Center, W304GH

60.2 EW TEACH
A Culture of Growth: 10 Characteristics of an Exceptional Math Classroom

Coaches/Leader/Teacher Educators Exhibitor Workshop

This session will discuss the characteristics of exceptional math classrooms. They come from successful teachers, best practices, and a bevy of educational research. We've sorted through that material to present strategies that include (1) speaking in the language of math, (2) making the struggle productive, and more.

Imagine Learning
Provo, Utah

Orange County Convention Center, W304AB

60.3 EW TEACH
BYOD: Mathspace—Why You'll Never Grade Math Assignments Again. Seriously.

Coaches/Leader/Teacher Educators Exhibitor Workshop

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

Mathspace
New York, New York

Orange County Convention Center, W304CD

60.4 EW TOOLS
SpringBoard and Desmos: Making Mathematics Come Alive with Interactive Digital Classroom Activities

8–10 Exhibitor Workshop

A hallmark of SpringBoard Math is students working collaboratively. Desmos activities invite students to connect how working mathematically means working socially and creatively. Learn to utilize these activities in your classroom to get your students to engage in mathematical discourse, constructing arguments their peers will assess for clarity.

The College Board
New York, New York

Orange County Convention Center, W304EF

11:30 A.M.–12:00 P.M.

61 TEACH
5 Math Tools for Math Fun

Pre-K–2 Burst

Participants will be able to "play math games" which can turn critical skills practice into exciting learning experiences. We will be using dice, playing cards, play-dough, Popsicle sticks, and chenille stems.

Karina Moran
Palm Beach County Schools, West Palm Beach, Florida

Orange County Convention Center, W311 GH

62 ASSESS
Add POWER to Your Math Workshop! Help Students to Self-Assess and Monitor Their Learning

3–5 Burst

What happens at the end of your math workshop? Join this session for visuals and strategies on helping students learn how to self-assess their work throughout the math workshop as well as monitor their progress.

Desiree Harrison
Kid's Math Talk, LLC, Southfield, Michigan

Orange County Convention Center, W108

11:30 A.M.–12:00 P.M.

63 FL
Connecting Central Mathematical Ideas across Grade Bands: Exploring "Equal or Equivalent?"

6–8 Burst

Focusing on connections in central mathematical ideas across and within grade bands demonstrates the coherence of mathematics as well as consistencies in content and practices. Engage in a lively presentation designed to enrich your knowledge of equality and equivalence as we embark on a mathematical journey highlighting connections.

Farshid Safi
@farshidsafi
University of Central Florida, Orlando

Orange County Convention Center, W104

64 ASSESS
Differentiating To Meet the Needs of All Learners

General Interest Burst

As our nation grows increasingly diverse, the culture within classrooms also becomes highly diverse. As a result, classroom teachers are challenged with meeting the needs of each and every learner. This session will provide participates with ideas for differentiating mathematics lessons and activities by scaffolding standards to the needs of learners.

Tashana Howse
Consultant, Lilburn, Georgia

Orange County Convention Center, W311 D

65 TOOLS
Experience a Multiple Representation Tool for All Grades—Easy to Use and Adapt for Diverse Students

General Interest Burst

Come and experience "It's all about¦," a graphic organizer easily adapted for many mathematical concepts. This tool attends to conceptual understanding, visual representations, use of language, and making connections. Examples for many grade levels will be shared. Participants will be given opportunities to design an "It's all about . . ." for their use.

Nora Ramirez
Consultant, Tempe, Arizona

Orange County Convention Center, W101

67 EMPOW
Fractions: From Misunderstanding to Deep Understanding

3–5 Burst

Did you know that using a limited number of visual models hinders students' abilities to internalize and generalize fraction concepts? Examine four distinct representations of fractions, and explore why each is so critical. Learn how different types of models provide different perceptual features and therefore serve different purposes.

Debi DePaul
ORIGO Education, Gig Harbor, Washington
Gretchen Presley
ORIGO Education, Earth City, Missouri

Orange County Convention Center, W307 CD

TEACH Teaching Strategies That Promote Learning
EQUITY Access And Equity For Students
EW Exhibitor Workshop
EMPOW Empowering Your Mathematics Curriculum
ASSESS Assessment Of And For Learning

11:30 A.M.–12:00 P.M.

68 ASSESS
How Do We Know What They Know? Grades, Assessment, and Feedback to Support Student Growth

10–12 Burst

The way teachers structure their grading and provide feedback sets a culture for the class (or school) and communicates what effort and success should look like. I will share practical, manageable grading and assessment strategies that positively impact my students while decreasing testing anxiety and helping to develop a growth mindset.

Lisa Bejarano
@lisabej_manitou
Academy School District 20, Manitou Springs, Colorado

Orange County Convention Center, W105

69 TEACH
It Is All about Ten

Pre-K–2 Burst

Attendees will be lead through various activities that promote automaticity of "making ten." The focus of this burst will be those activities that do not require preparation, materials, or setup. These activities are meant to be part of a toolbox for teachers to use while students are standing in line, waiting for bells, on field trips, and so on.

Linda West
SMARTTraining, LLC, Scottsdale, Arizona

Orange County Convention Center, W203

70 TEACH
Using Story as a Teaching Tool in High School Mathematics

8–10 Burst

Story incorporated into mathematics can show students how mathematics applies to real-world situations. During our presentation, we will explain how story was used in a mathematics classroom to connect mathematical concepts to popular and classical fiction books.

Samantha Junkin
Florida Gulf Coast University, Fort Myers
Robert Kenny
Florida Gulf Coast University, Fort Myers

Orange County Convention Center, W102

71 COLLAB
When Teachers Lead, Students Matter: Building Organic Leadership of Math Reform

Coaches/Leaders/Teacher Educators Burst

How does building an effective Math Teacher Leadership model impact teaching and learning? Learn about how a district has implemented a framework to build leadership capacity in schools that has transformed teaching of mathematics. Through collaboration, reflective discussions, and coaching, teacher leaders work with colleagues to enhance teaching.

Rebeka Matthews Sousa
Bermuda Department of Education, Paget, Bermuda
Lou Matthews
Bermuda Department of Education, St. David's, Bermuda

Orange County Convention Center, W305

72 TEACH
"Science-izing" the Statistics Standards: An Interdisciplinary Approach to Teaching Statistics

10–12 Burst

Despite the placement of statistics in the mathematics standards, many statistics educators believe that students need to approach data analysis with a scientific mindset. This presentation will examine how the standards for scientific practice can substantially enrich and enliven mathematics lessons that cover the statistics standards.

Kelly Findley
Florida State University, Tallahassee

Orange County Convention Center, W309

1:30 P.M.–2:30 P.M.

73 TEACH
Purposefully Connecting Number Talks to the Mathematics Lesson

Pre-K–2 Session

Many K–2 teachers use number talks to foster efficient and flexible thinking in their classroom. In doing so, a disconnect has surfaced between what students learn in number talks and their ability to transfer it to regular practice. In this session, we'll explore strategies for bridging the gap between number talks and the mathematics lesson.

Robyn Ovrick
@RobynOvrick
University of Georgia, Griffin

Orange County Convention Center, W103

74 EQUITY
Detracking, Differentiating Instruction, and Using Standards-Based Assessment to Help ALL Students

10–12 Session

By eliminating tracking so that all students take honors geometry, I was able to break up cohorts of academically struggling students. However, detracking brought on new challenges. I will share the lessons I learned by using differentiation and standards-based assessment to help my students become metacognitive learners.

Kristin Weller
P. K. Yonge Developmental Research School, University of Florida, Gainesville

Orange County Convention Center, W312

75 EQUITY
Empowering Equity with Collaborative Problem Solving

3–5 Session

In this interactive session, you'll explore a student-centered paradigm that embraces complex problem solving through productive perseverance. You'll experience and evaluate an inclusive process in which problems are thoroughly understood prior to identifying and implementing multiple solution pathways. All students can do it! Student work shared.

Robyn Silbey
Robyn Silbey Professional Development, Gaithersburg, Maryland

Orange County Convention Center, W311 ABC

76 EMPOW
From Counting to Calculus: What Stays the Same?

General Interest Session

We tend to think of the work of calculus students as being very different from that of kindergarteners, but it really shouldn't be so. All learners can function as mathematicians. We'll examine this claim through tasks and student ideas across the K–12 curriculum.

Christopher Danielson
Desmos, Inc., St. Paul, Minnesota

Orange County Convention Center, W109

77 TEACH
In Grade 1 It's Called Missing Addend, In Grade 7 It's Called Algebra

Pre-K–2 Session

Participants will learn how much of what students are required to learn in upper elementary and junior high math are rooted in the math for kindergarten and first grade. Participants will take part in a variety of math games and activities that will demonstrate the relationships between quality early math learning and later math success.

John Felling
Black Gold Regional Schools (Retired), Edmonton, Alberta, Canada

Orange County Convention Center, W204

78 FL
Kindergarten Mathematicians

Pre-K–2 Session

Kindergarten students have an innate ability to think and solve problems. But do they have the ability to attend to precision, make sense of problems, persevere in solving them, and reason abstractly and quantitatively? Come and see what happens when five- and six-year-old students are challenged with addition, subtraction, multiplication, and division.

Laura Steele
Okaloosa County School District, Fort Walton Beach, Florida

Orange County Convention Center, W303

1:30 P.M.–2:30 P.M.

79 TEACH
Making Sense of Solving Equations

8–10 Session

Finding the solution to an equation or system of equations is central in algebra. The "what is the first" approach emphasizes rote procedures and does not help students develop flexible procedures for solving equations. Thinking about the mathematical structure of an equation aided by dynamic interactive visualization can make a difference.

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

Orange County Convention Center, W110

80 FL
Middle School Mathematics Florida Standards Assessment (FSA) Update

6–8 Session

The Florida Department of Education's Test Development Center will present information on Florida Standards Assessments (FSA) for middle school.

Sarah Devereaux
Test Development Center, Florida Department of Education, Tallahassee

Orange County Convention Center, W308 AB

81 COLLAB
Preparing the Next Generation of Teachers of Mathematics: Setting Standards

General Interest Session

Learn about the Association of Mathematics Teacher Educators' Standards for Preparing Teachers of Mathematics, and discuss your role in supporting the preparation of the next generation of teachers of mathematics.

Nadine Bezuk
Board of Directors, National Council of Teachers of Mathematics, Reston, Virginia; San Diego State University, California

Orange County Convention Center, W202

82 TEACH
Thirty Shades of Gray . . . Hair!

6–8 Session

Save yourself a few gray hairs and learn from our experience. We have tried lots of strategies and resources during our combined 30+ years of experience in the classroom. We will share and explain our "Top Ten" list of strategies and resources that promote effective math instruction.

Brenda Elmore
Riverside Middle School, Pendleton, South Carolina
Christi Fricks
Riverside Middle School, Pendleton, South Carolina

Orange County Convention Center, W307 AB

83 EQUITY
Weaving Indigenous Perspectives with Mathematics Teaching and Learning

General Interest Session

This session will answer the question, "In what ways might indigenous perspectives about teaching and learning inform mathematics teaching practices and content in order to address equity?" We will explore the relationships between Indigenous perspectives and teachings and school mathematics in order to achieve a goal of equity for ALL.

Florence Glanfield
University of Alberta, Edmonton, Canada

Orange County Convention Center, W300

Hear what's new from exhibitors—attend an **exhibitor workshop**. Look for the EW symbol throughout the program book.

1:30 P.M.–2:45 P.M.

84 TEACH
Algebra 1: From Perspiration to Perseverance

8–10 Workshop

Have fun playing algebra 1 games and hands-on activities for functions and systems of equations/inequalities. Learn dances for slopes and functions. Explore a tool that, when used along with the previous resources, will move your students from "Don't Get It" to "Done Got It." Leave with many resources to use in your classroom Monday.

Dee Ann Wilson
Expanding Horizons in Education, LLC, Umatilla, Florida

Orange County Convention Center, W105

85 FL
All Students Can Learn with Differentiated Instruction

8–10 Workshop

How can I meet the needs of all my students every day so that all students learn? This is a question asked often throughout the school year. This session will look at four ways teachers can differentiate instruction based on formative assessment data and will provide teaching strategies to ensure that all students are successful.

Shelly Miedona
Florida Department of Education, Tallahassee

Orange County Convention Center, W104

86 TOOLS
Climb Aboard with Scratch Programming: An Engaging Way to Learn Coordinates

3–5 Workshop

Experience an exciting way to incorporate Scratch programming into your classroom! You have probably heard about the incredible learning adventure Scratch programming can offer students. Participate in this hands-on session to discover a unique way for your students to learn about coordinates using Scratch. Engage them with a new technology!

Megan Roeder
Montclair State University, New Jersey
Nicole Panorkou
Montclair State University, New Jersey

Orange County Convention Center, W102

87 TEACH
Comparing Box Plots: Effective Strategies for Teaching

6–8 Workshop

One part of the presentation will be summary results from a study of how students' comparisons of box plots influence their ability to make informal inferences. The second part of the session will engage participants in a peer-reviewed lesson about how to interpret box plots that compare two groups aligning with the Common Core State Standards.

Charlotte Bolch
University of Florida, Gainesville
Tim Jacobbe
University of Florida, Gainesville

Orange County Convention Center, W309

88 EMPOW
Empower Students by Demonstrating Coherence through the Area Model from Elementary through High School

Coaches/Leaders/Teacher Educators Workshop

Feel like you are struggling to help your students make connections from the previous years' content and the current year's content? In this presentation, participants will make the math visible by using an area model to show the relationships between the concrete, pictorial, and abstract in various stages of the Common Core State Standards.

Christina Worley
St. Lucie County Public Schools, Fort Pierce, Florida
Jason Bragg
St. Lucie County Public Schools, Fort Pierce, Florida

Orange County Convention Center, W307 CD

88.1 TEACH
Comparing Your Way through Mathematics

Pre-K–2 Workshop

Same? Different? Is the same as? More than? Less than? Comparison-focused tasks enable children to develop conceptual understanding of mathematics while developing the language of mathematics. Come and explore geometry, number, measurement, algebraic reasoning, and data analysis comparison tasks.

Kay Wohlhuter
Board of Directors, National Council of Teachers of Mathematics, Reston, Virginia; University of Minnesota Duluth

Orange County Convention Center, W308 CD

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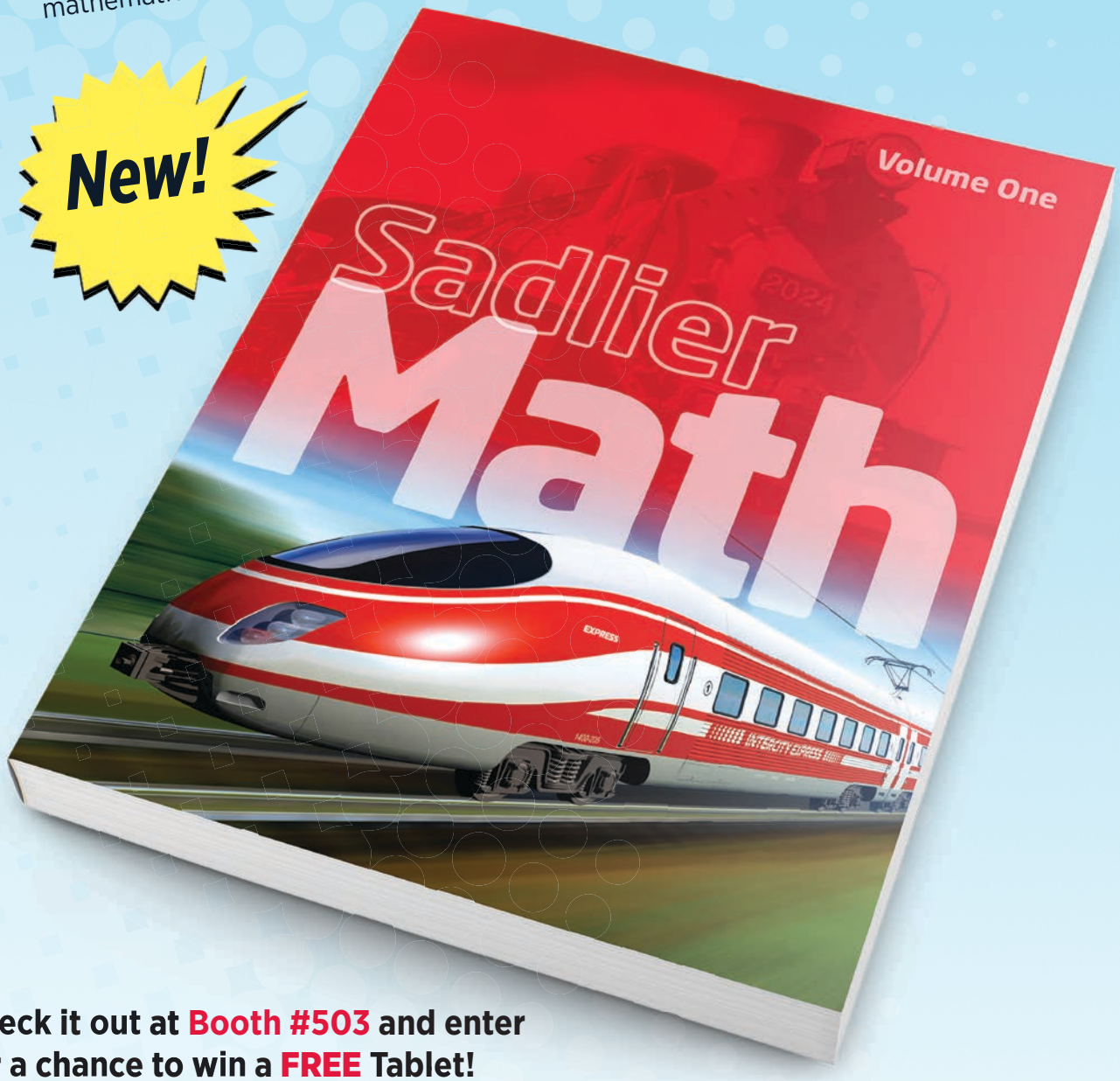

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Sadlier School

1:30 P.M.–2:45 P.M.

89 EMPOW
Facilitating Conceptual Understanding to Build Procedural Fluency in Pre-K–Grade 2

Pre-K–2 Workshop

Conceptual understanding is defined as the "connection" between mathematical facts, procedures, and ideas. Connected activities and tasks that focus on number and operation concepts will be explored through video clips and work samples from prekindergarten, kindergarten, and first-grade high-need settings. A website for PLCs will be shared.

Juanita Copley
University of Houston (Emerita), Muskegon, Michigan

Orange County Convention Center, W108

90 EMPOW
It's Not New Math, It's Deeper Thinking: Conceptual Understanding in an Inquiry-Based Classroom

3–5 Workshop

Experience how to promote mathematical discourse to assist students as mathematicians in the sharing of ideas and problem-solving techniques. Multiplication and division concepts and standards for whole numbers using three-dimensional materials, two-dimensional representations, and mental models will also be explored.

Paula Muehler
Math Learning Center, Sussex, Wisconsin

Orange County Convention Center, W311 D

91 TOOLS
Linear or Not Linear? That Is the Question!

10–12 Workshop

Examine real-life correlations like BMI vs. hours of TV watching, SAT scores vs. GPA, marijuana sales vs. divorce rates, and many others. Participants will take several events and determine whether they would have a positive or negative correlation, or in some cases none.

Tracey Zak-Johnson
Consultant, Fort Worth, Texas

Orange County Convention Center, W203

92 TEACH
Modeling with Mathematics in Science Class: Maximizing Opportunities to Enrich the STEM Experience

3–5 Workshop

Come explore how to mathematize hands-on science as we launch rockets, mix chemicals, and program robots. Learn how science provides many opportunities for students to engage in meaningful mathematics through investigative tasks and how capitalizing on these moments helps students develop strong skills for mathematical modeling and problem solving.

Mike Flynn
Mount Holyoke College, South Hadley, Massachusetts

Orange County Convention Center, W101

93 TEACH
Unpacking Instructional Routines

8–10 Workshop

You've heard about Contemplate then Calculate. Maybe you saw it at a conference or tried it yourself, but you aren't exactly sure what all of the parts are and why they are important. Come join us as we experience the instructional routine and unpack the elements of the routine and how they work together to improve ALL students' learning.

Jennifer Lee Kim
@leejenj
New Visions for Public Schools, New York, New York
Liz Ramirez
New Visions for Public Schools, New York, New York
David Wees
New Visions for Public Schools, New York, New York

Orange County Convention Center, W311 GH

TEACH Teaching Strategies That Promote Learning
EQUITY Access And Equity For Students
EW Exhibitor Workshop
EMPOW Empowering Your Mathematics Curriculum
ASSESS Assessment Of And For Learning

1:30 P.M.–2:45 P.M.

94 ASSESS
You've Completed a Timely Formative Check—Now What Do You Do with the Information?

10–12 Workshop

Formative data can be used to inform instruction in multiple "correct" ways. Using sets of data collected from an algebra class, we'll discuss various ways it can inform and impact instruction. Lesson monitoring and various ways to form and use collaborative groups will be discussed. Tools to collect formative data quickly will be presented.

Allan Bellman
University of Mississippi, Oxford
Kayton Hosket
University of Mississippi, Oxford

Orange County Convention Center, W311 EF

95 TEACH
Young Mathematicians as 21st-Century Problem Solvers: Developing Collaborative Skills and Mindsets

Pre-K–2 Workshop

In 21st-century culture, problem solving is collaborative. But when does collaboration start in math learning? Is there room for this skill in the early elementary years? Are children ready? We will explore a collaborative small-group problem-solving protocol that teachers can integrate into their existing early elementary mathematics curriculum.

Eliza Chung
The School at Columbia, New York, New York
Mike Pienciak
The School at Columbia, New York, New York

Orange County Convention Center, W305

3:00 P.M.–4:00 P.M.

96 TEACH
Common Sense Percents

6–8 Session

Break away from procedures! This workshop will help you learn how to build a deep, conceptual understanding of percentages within your students, as we focus on connections and sense making. Through the use of ratio tables and double number lines, your students will increase their flexibility and fluency in working percent problems.

Jerra Wood
Boone County Schools, Florence, Kentucky

Orange County Convention Center, W204

97 EMPOW
Conversations That Matter: Applying Math to Explore Important Real-World Issues in High School Statistics

10–12 Session

How can we use math to better understand the world, and what conversations are possible in a high school math class? In this presentation, we'll distinguish between conceptual understanding tasks and authentic applications. We'll then use statistics to explore a relevant social question: How should police departments address excessive use of force?

Karim Ani
Mathalicious, Austin, Texas

Orange County Convention Center, W109

98 TOOLS
Engaging Activities That Emphasize the FUN in FUNctions

8–10 Session

Participants will be provided with classroom-ready hands-on lessons that utilize handheld technology to enable students to examine functional behavior and discover FUN ways to make sense of transformations. Emphasis will be placed on connecting multiple mathematical representations to help students develop conceptual understanding.

Thomas Beatini
Union City Public Schools, New Jersey

Orange County Convention Center, W312

3:00 P.M.–4:00 P.M.

99 COLLAB
Engaging Coaching as a Tool for Student Growth

General Interest Session

Participants will experience planning and implementing a lesson using the TQE (tasks, questions, evidence) Process. Strategies will be shared for coaching teachers to make sense of mathematics for teaching, use effective teaching practices, and reflect for continuous growth. Classroom video will create a shared vision of effective teaching.

Edward Nolan
Towson University, Maryland
Juli Dixon
University of Central Florida, Orlando
Thomasenia Adams
University of Florida, Gainesville

Orange County Convention Center, W110

100 EQUITY
I Know, You Know, We All Know—Access for All (to Math Content)

Pre-K–2 Session

As educators, it is our responsibility to provide equitable access to math content for ALL students. The Three Reads Strategy will be introduced as a tool to provide such access. Participants will learn how to implement this strategy in their classrooms and see how it has supported students in accessing mathematically rich word problems in CPS.

Karen Hicks
Chicago Public Schools, Illinois
Sharonda Thomas
Chicago Public Schools, Illinois

Orange County Convention Center, W303

101 FL
Open Number Lines: A Tool for Addition and Subtraction WITHOUT the Standard Algorithm

3–5 Session

Second- and third-grade standards require students to add and subtract with regrouping in a way that is efficient and accurate WITHOUT using the standard algorithm. See how we use open number lines to provide students the opportunity to solve problems in this way that also allows for flexible thinking and student-invented strategies.

Erica Epling
Seminole County Public Schools, Sanford, Florida

Orange County Convention Center, W308 AB

102 TEACH
So Many Ways to Solve a Problem, So Little Time! Purposefully Select & Sequence Student Work

3–5 Session

Experience classroom discourse guided and inspired by samples of student work. Think about and discuss ways to strategically select and sequence student solutions for classroom conversations and frame questions that promote sense making and connections. Participants will leave with strategies to help them effectively select and sequence student work.

Tyrone Holmes
Consultant, Montclair, New Jersey

Orange County Convention Center, W307 AB

103 TEACH
STOP! Don't Be a Talking Head!

6–8 Session

Suffering from Talking Head Syndrome? Get ready to take a recovery journey that removes the weight of student learning off of your shoulders and places the ownership of learning back on your students. Attend this session and write your prescription filled with best instructional practices to engage your learners in collaborative academic discourse.

Davina Coleman
Robert Smalls International Academy, Beaufort, South Carolina

Orange County Convention Center, W103

3:00 P.M.–4:00 P.M.

104 EMPOW
Supporting Students as They Work with Bar Models

General Interest Session

Bar models (also called strip or tape diagrams) are a powerful visual tool for representing and solving math problems. But they can be challenging for students. Come to this hands-on session to explore a variety of strategies for scaffolding students as they learn to effectively work with bar models. Familiarity with bar models is assumed.

Sue McMillen
SUNY Buffalo State, Buffalo, New York

Orange County Convention Center, W300

105 ASSESS
Unpacking Place Value: What Are Children Thinking?

Pre-K–2 Session

This session will explore student understanding of place value and why children appear inconsistent in their use of place value knowledge. We will examine children's understanding of place value through observation of videos of children engaged in a variety of tasks and reflection on how instruction can be designed to advance their thinking.

Wendy Bray
Florida State University, Tallahassee
Tanya Blais
Florida State University, Tallahassee
Robert Schoen
Florida State University, Tallahassee

Orange County Convention Center, W311 ABC

3:00 P.M.–4:00 P.M.

106 TEACH
Using Writing to Frame, Support, and Consolidate Student Mathematical Understanding

General Interest Session

Writing is often used as a strategy to support student reading comprehension. Why aren't we doing this more in math? There are numerous advantages to integrating writing into math. Attendees will be provided a variety of writing strategies that can be used to strengthen student mathematical understanding.

David Costello
Consultant, Coleman, Prince Edward Island, Canada
Orange County Convention Center, W202

107 TEACH
Teach Less, Learn More

8–10 Workshop

Students do not find success in mathematics by doing many problems; students learn and become confident in their math abilities by doing one problem many different ways. This session explores a problem-based learning approach to mathematics instruction and provides teachers with useful strategies and activities for their classrooms.

Jennifer Stevens
Virginia Advanced Study Strategies, South Boston, Virginia
Sandy Wilborn
Virginia Advanced Study Strategies, South Boston, Virginia
Orange County Convention Center, W308 CD

107.1 EW TEACH
Problem-Based Tasks in a Student-Centered Classroom

8–10 Exhibitor Workshop

When students are the center of instruction, they are active, engaged, and noisy. We will explore and model the instructional moves needed to create a student-centered classroom using problem-based tasks.

Walch Education
Portland, Maine
Orange County Convention Center, W304AB

3:15 P.M.–4:30 P.M.

108 EQUITY
Am I Really Hearing My Students?

6–8 Workshop

NCTM's *Principles to Actions* advocates for teachers to facilitate meaningful mathematical discourse with their students. This session will create experiences for participants to reflect on whether math discussions are present or missing from their own math classrooms and how the conversations include or exclude the students' voices.

Barbara Everhart
Educational Specialist, berealcoach.com, Minneapolis, Minnesota
Orange County Convention Center, W307 CD

109 TEACH
An Amazing Multiday Task for AP Stat, Discrete Math, and AP Calculus

10–12 Workshop

We will work on a task that will engage, challenge, and shock your students. In fact, the results will be one of the most amazing mathematical things you will ever see. In addition to algebra, logarithms, and limits, the first part of the task makes use of combinatorial reasoning while the second part makes use of some calculus.

James Matthews
Siena College, Loudonville, New York
Orange County Convention Center, W311 D

110 TEACH
Beyond the Lecture: Pumping Up Instruction with Parallel Tasks

Coaches/Leaders/Teacher Educators Workshop

Are you looking for a new way to differentiate instruction in today's classroom? Many of us are moving to a more task-based classroom and finding it hard to meet the needs of all of our students. In this session, we will introduce you to the concept of parallel tasks and the benefit it has for your students.

Erica Brink
Polk County School Board, Bartow, Florida
Clare Bernier
Polk County School Board, Bartow, Florida
Orange County Convention Center, W309

3:15 P.M.–4:30 P.M.

111 TOOLS
Bringing Mathematics to Life with Stop-Motion Animation

Pre-K–2 Workshop

Stop-motion video is a powerful tool for stimulating discourse. Participants will compose and film a story using tangrams and iPads, use geometry standards to analyze films for evidence of math concepts, and create materials to engage students in discourse. We will bring videos to share, and we will provide materials for participants to create their films.

Kristen Apraiz
University of Florida, Gainesville
Krista Ruggles
Utah Valley University, Orem
Gayle Evans
University of Florida, Gainesville

Orange County Convention Center, W105

112 TEACH
Counting Collections Meets Problem Solving and Properties

3–5 Workshop

Counting collections is found in many primary classrooms, but often disappears in the upper grades. Come explore counting collections activities that extend far beyond a simple count sequence, providing context for counting into the thousands (and more!). Walk away with strategies connecting CC activities to grades 3–5 math content. Game changer!

Patricia Goodman
Little Rock School District, Arkansas
Kim Romain
Little Rock School District, Arkansas

Orange County Convention Center, W102

113 TEACH
Create Innovative Lesson Plans Based on Popular Classics of Children's Literature

Pre-K–2 Workshop

Session leaders will outline three classic children's books, and each leader will present a lesson plan based on the story or characters. The plans will vary in math concept and grade level, and copies of complete plans will be available. Participants will then select different books from those provided and form groups to create and share lesson plans.

Marianne Prokop
Author, M.W. Penn, Gainesville, Florida
Maria Diamantis
Southern Connecticut State University, New Haven

Orange County Convention Center, W203

114 TOOLS
Making the STEM Connection through Rates of Change and Student-Driven Data

8–10 Workshop

Making real-world connections and meaningful conversations is a cornerstone in a STEM classroom. In this session, math and science teachers come together to collaborate on the concept of rates of change using data collection from a science and statistics perspective, while analyzing it through the lens of an algebra 1 (and beyond) teacher.

Daniel Wilkie
Woodmont IB High School, Piedmont, South Carolina
Stacy Thibodeaux
David Thibodaux STEM Magnet Academy, Lafayette, Louisiana
Rachael Gorsuch
Columbus Academy, Gahanna, Ohio

Orange County Convention Center, W305

3:15 P.M.–4:30 P.M.

115 TOOLS
Principles for Building and Using Effective Digital Tasks

8–10 Workshop

What do the most powerful digital math tasks have in common? What teacher moves allow students to get the most out of any lesson? In this session, we'll consider answers to these questions and use the Desmos Activity Builder as a lens for exploring the intersection of computers, teaching, and math.

Michael Fenton
Desmos, Fresno, California

Orange County Convention Center, W101

116 TEACH
Rigor and Dialogue in the Classroom: Engaging Activities to Make Middle School Math Memorable

6–8 Workshop

Create a collaborative classroom focused on student-led learning, discussion, and rigorous problem solving. Learn high-engagement strategies to incorporate rigorous problem-solving tasks and active student dialogue into your classroom so that students are learning from each other. Make problem solving fun and memorable!

Stacie Johnson
Hanford Elementary School District, California

Orange County Convention Center, W108

117 TEACH
Targeted Instructional Strategies to Address Student Struggles in AP Calculus

10–12 Workshop

Do your AP Calculus students struggle with writing justifications based on derivative tests? Or with breaking down a related rates word problem? Or with determining an appropriate sequence when solving separable differential equations? This session will model strategies to target each of these challenges, and it will allow participants to practice each one.

Tiffany Judkins
The College Board, New York, New York

Orange County Convention Center, W311 GH

118 EQUITY
The Inclusion Classroom: Strategies for Making It Work!

3–5 Workshop

Learn classroom strategies and social supports to help build and maintain predictability and stability for your students. Communication and consistency are the keys to building their trust. We will go beyond the checklist of do's and don'ts. Head's up! It's not about tips and tricks for how to deal with those types of students. It's about relationships.

April Giauque
Consultant, Kyle, Texas

Orange County Convention Center, W311 EF

119 TOOLS
Use Real-World Data to Introduce Derivatives and Integrals

10–12 Workshop

Rather than using contrived data to introduce students to derivatives and integrals, we will collect position vs. time and velocity vs. time data with a graphing calculator and graph the data. We will dynamically find the slope of the tangent line and then find the left- and right-sum rectangles.

Marsha Guntharp
Palm Beach Atlantic University, West Palm Beach, Florida
Fred Browning
Palm Beach Atlantic University, West Palm Beach, Florida

Orange County Convention Center, W104

4:30 P.M.–5:30 P.M.

120 EMPOW
Coherence and Problem Solving: A Checklist for Evaluating Your Curriculum

3–5 Session

We know that a curriculum needs to be coherent, but what does it mean to have a coherent problem-solving curriculum? The attributes of a coherent problem-solving curriculum will be illustrated together with effective teaching practices for each.

Randall Charles
San Jose State University, California

Orange County Convention Center, W202

4:30 P.M.–5:30 P.M.

121 TEACH
Conceptual Understanding: You Can't Teach It, But You Can Build It!

3–5 Session

Our standards dictate an equal pursuit of conceptual understanding, procedural skill and fluency, and application. The often used "I do, We do, You do" model of instruction in mathematics only addresses the procedural skill component of rigor. So how is conceptual understanding taught? Come to this session to learn how to go beyond getting the right answer

Loryn Lenartowicz
Palm Beach County School District, West Palm Beach, Florida

Orange County Convention Center, W308 CD

122 TOOLS
Desmos for Calculus: Animating all the Greatest Hits!

10–12 Session

Augment your calculus teaching by using Desmos to animate its greatest hits! We will share ready-made examples, plus lift the hood to show how to dynamically visualize such classics as secants approaching tangents, derivative sketching, related rates, Riemann sums, the Fundamental Theorem of Calculus, Taylor polynomials, and polar curves.

Dave Cesa
@davecesa
Charlotte Latin School, North Carolina
Jeff Knull
Charlotte Latin School, North Carolina

Orange County Convention Center, W307 AB

123 ASSESS
Goal-Setting and Self-Assessment Strategies to Promote Achievement

10–12 Session

Teaching students to self-assess and set clear goals enables them to take charge of their learning. Successful strategies and rubrics, adaptable for any class, and examples of student goal setting will be shared. Action research in our professional learning community has resulted in decreasing the achievement and opportunity gaps.

Karen Hyers
Tartan High School, Oakdale, Minnesota

Orange County Convention Center, W312

124 COLLAB
Instructional Coaching in the World of Elementary Mathematics

Coaches/Leaders/Teacher Educators Session

A highly effective instructional coach can have a positive impact on a school. This session will address focusing on student learning, asking effective questions, monitoring strategy implementation, and engaging educators in reflective conversations. Participants will learn how to build trusting relationships to foster effective teaching.

Joanne Cicio
Huntington Union Free School District, New York
Christine Lofaro
Huntington Union Free School District, New York

Orange County Convention Center, W103

125 FL
Making Sense of Mathematics for Teaching: The TQE Process

General Interest Session

Experience how selecting the correct tasks and engaging with them as teams of learners is crucial preparation. Develop effective questions to provide evidence of student learning through the use of tasks, questions, and evidence-the TQE Process. Use authentic classroom videos to create a shared image of rigorous mathematics instruction.

Juli Dixon
@thestrokeofluck
University of Central Florida, Orlando

Orange County Convention Center, W308 AB

126 EMPOW
More or Less: Developing the Concepts of Comparison

General Interest Session

In this session for K–5 educators, we will explore the developmental progression of comparison. We will consider the differences between direct and indirect comparison as well as between additive and multiplicative thinking. We will discuss how these concepts are linked to the four operations and how to carefully develop comparison ideas.

Debi DePaul
ORIGO Education, Gig Harbor, Washington
Gretchen Presley
ORIGO Education, Earth City, Missouri

Orange County Convention Center, W300

4:30 P.M.–5:30 P.M.

127 TEACH
Motivating Students through Playful Mathematics

8–10 Session

Students often enter math class full of fear. Yet we know that effective teaching engages their ideas. How do we lower the social risks and get students to where they can understand math more deeply? I will share what I learned from accomplished math teachers who regularly succeed at getting students to play with ideas as a way of making sense.

Ilana Horn
Vanderbilt University, Nashville, Tennessee

Orange County Convention Center, W109

128 ASSESS
Moving Learning Forward with Learning Targets, Formative Assessments, and Feedback

6–8 Session

All definitions for formative assessment include interactions between teacher and student. Formative assessment must be a planned part of every lesson. We will show how to work from the learning target and move beyond checks for understanding to determine the next steps for student learning. Research-informed strategies will be shared.

Connie Schrock
Emporia State University, Kansas

Orange County Convention Center, W110

129 EQUITY
Opening Pathways to Mathematics Success: Tasks and Routines That Promote Deep Learning for All

3–5 Session

Participants will engage in activities designed to invite mathematical reasoning, communication, and sense making. We'll discuss the selection or generation of tasks that promote connected learning and the use of "think-share-compare" routine as strategies that support all students in developing 21st-century mathematical habits and understandings.

Mark Ellis
California State University, Fullerton

Orange County Convention Center, W204

130 TOOLS
Parametrics for Beginners

8–10 Session

Parametric representations on the graphing calculator will be explored, including functions and their inverse, projectile motion in three different "physics" applications, baseball, a classic train problem, Lissajou figures, complex roots and powers, rose curves, conics, and more. Handouts will include step-by-step solutions and screen shots.

David Kapolka
Forest Hills Northern High School (Emeritus), Alto, Michigan

Orange County Convention Center, W311 ABC

131 TEACH
EZ Tangrams: Area, Perimeter, and Vocabulary

3–5 Burst

These simple tangrams have only two pieces and are easy to create, yet they can be used to analyze perimeter and area in engaging and enriching ways. Students use these pieces to compose, identify, and name other geometric shapes and then to analyze and compare their perimeters and areas. The task has multiple entry points and multiple extensions.

Robert Mann
Western Illinois University, Macomb
Anita Reid
Lewistown High School, Illinois

Orange County Convention Center, W108

131.1 TEACH
Promoting Mathematical Connections Using 2-D and 3-D Manipulatives

8–10 Session

Principles to Actions encourages teachers to engage students in mathematical thinking, reasoning, and sense making. In this session, participants will explore strategies to connect algebraic and geometric ideas using multiple representations through the purposeful use of two- and three-dimensional manipulatives.

Siddhi Desai
The College of New Jersey, Ewing, New Jersey
Farshid Safi
University of Central Florida, Orlando

Orange County Convention Center, W303

5:00 P.M.–5:30 P.M.

132 TEACH
Interactive Notebooks: Tapping into Left and Right Brain Thinking

6–8 Burst

Interactive notebooks appeal to right- and left-brain learners who crave organization. Students maintain these spirals with all their work inside; left-hand pages are used for homework while right-hand pages are used for class notes. In a sense, students create their own "text" with everything they need at their fingertips.

Kristina Barnaby
Fairfield Country Day School, Connecticut

Orange County Convention Center, W311 GH

133 EQUITY
Learning from the Past, Projecting the Future: Social Justice from NCTM's Lens

General Interest Burst

The gradual development of social justice in mathematics education in U.S. schools will be discussed by adopting a retrospective perspective to understand the interaction between historical events (e.g., national, global, theoretical, and methodological developments) and the response employed by NCTM through its annual yearbooks.

Orhan Kaplan
University of Florida, Gainesville
Thomasenia Adams
University of Florida, Gainesville

Orange County Convention Center, W101

134 COLLAB
Math Camp for Teachers: How to Put on Beneficial Professional Development for K–12 Teachers

Burst

Learn how teachers from an urban, Title 1 school district planned and implemented a math camp within their district. Come away with ideas for two to three days of PD full of learning, activities, and planning that focus on developing math mindsets, conceptual understanding, number sense, and guided math.

Amanda Harvell
@MandyH_79
Ritenour Middle School, Ritenour School District, St. Louis, Missouri
Melissa Crowley
Iveland Elementary School, Ritenour School District, St. Louis, Missouri

Orange County Convention Center, W309

135 TEACH
Open-Ended Problems: Unlocking Potential in Middle School Students

6–8 Burst

In this session, we will examine the difference between traditional middle school homework sets and open-ended problems, focusing on how to change a mundane task into a higher-level learning opportunity. We will share problems used with a sixth-grade class which lead to students begging for more math homework.

Natalia Bailey
University of Wisconsin–Madison
Alisa Belliston
University of Wisconsin–Madison

Orange County Convention Center, W104

136 TEACH
Reflective Meditations in the Mathematics Classroom

General Interest Burst

Come experience and learn how brief in-class meditations impact students' focus and sense of well-being. We will explore how reflective meditations help train students to sit with emotions while problem solving and enhance their understanding of mathematics as a process rather than a result-oriented pursuit.

Payal Patel
Hamilton Central School, New York

Orange County Convention Center, W307 CD

5:00 P.M.–5:30 P.M.

137 EMPOW
Sequencing Series in Calculus

10–12 Burst

Students often miss connections that could lead to understanding series more fully. Building on tangent line approximations, students can calculate quadratic approximations, laying the groundwork for higher order Taylor polynomial approximations. Investigating approximations early and often can be integral in providing a framework for success.

Josh Berberian
The Shipley School, Bryn Mawr, Pennsylvania

Orange County Convention Center, W102

138 TEACH
Statistics in Reverse: Recreating the Set

6–8 Burst

Come explore a brain-bending statistics task that will push the limits of students' number sense and critical thinking skills.

Hannah Ross
Milwaukee Montessori School, Wisconsin

Orange County Convention Center, W203

139 TOOLS
Ten Tech Tools for Teachers

3–5 Burst

In this fast-paced presentation, we will share ten tech tools that teachers can take back to the classroom and use immediately. These include presentation tools, engaging math games, and more. Our tools are free, easy, and exciting for students. We will share how-to guides, teacher examples, and student creations.

Nancy Penchev
Scheck Hillel Community Day School, North Miami Beach, Florida
Michael McCann
Scheck Hillel Community Day School, North Miami Beach, Florida

Orange County Convention Center, W311 D

140 EMPOW
Turn Struggles into Gains by Considering Misconceptions of Young Learners

Pre-K–2 Burst

In this session, teachers will experience childrens' misconceptions that can cloud mathematical judgment and cause an unintended barrier to developing a true understanding of core math concepts. We will discuss symbolic misconceptions, as well as the four stages of academic language necessary for conceptual growth.

Jessica Bobo
ORIGO Education, Inc., Earth City, Missouri

Orange County Convention Center, W105

141 ASSESS
Formative & Summative Assessments: Portfolio Projects in Algebra 1 through Trigonometry/Precalculus

10–12 Burst

The presentation will focus on the design and implementation of portfolio projects. These projects are used as formative and summative assessments in algebra 1, geometry, algebra 2, and trig/precalc classes. All materials will be shared via Google folders.

Beverly Heigre
Notre Dame High School, San Jose, California
Tanisha Fitzgerald-Willimas
Notre Dame High School, San Jose, California
Jessica Angelo
Notre Dame High School, San Jose, California

Orange County Convention Center, W311 EF

141.1 ASSESS
Feed Forward with GoFormative

6–8 Burst

Feedback has been discussed for years, but how effective is it? The way we give feedback should provide students with a way to revise and move forward, and not just something for them to think about. Come see how GoFormative does that and more in real time with live results and instant feedback that drive students to move forward.

Sherrina Clark
Kern High School District, Bakersfield, California

Orange County Convention Center, W305

HIGHLIGHTS

GET SOCIAL

Stay informed and get connected with attendees by using **#NCTMregionals** on social media.

Conference App
nctm.org/confapp

Twitter
@NCTM

Instagram
@NCTM.math

Facebook
facebook.com/TeachersofMathematics

REGISTRATION HOURS

7:00 a.m.–12:00 p.m.

EXHIBIT HOURS

8:00 a.m.–2:00 p.m.

NCTM CENTRAL HOURS

8:00 a.m.–2:00 p.m.

FIRE CODES

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

7:15 A.M.–7:45 A.M.

142
Regional Conference Overview & Orientation

General Interest Workshop

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

Orange County Convention Center, W203

8:00 A.M.–9:00 A.M.

143 EMPOW
Conversations That Matter: Applying Math to Explore Important Real-World Issues in Middle School Statistics

6–8 Session

How can we use math to better understand the world, and what conversations are possible in a middle school math class? In this presentation, we'll distinguish between conceptual understanding tasks and authentic applications. We'll then use statistics to explore a relevant social question: How is wealth distributed in the United States?

Karim Ani
Mathalicious, Austin, Texas

Orange County Convention Center, W204

144 FL
Developing Fact Fluency through Number Sense

Pre-K–2 Session

Do you want to know how your students naturally think about math and discover ways you can facilitate their learning? In this session, we will discuss the pros and cons of different approaches to fact fluency; strategies students will use to solve addition, subtraction and multiplication facts; and the instructional implications of those strategies.

Gemma Dimery
Orange County Public Schools, Orlando, Florida
Wes May
Orange County Public Schools, Orlando, Florida

Orange County Convention Center, W308 AB

145 FL
Developing Unique and Effective Student-Driven Math Lessons

3–5 Session

Discover how to boost student achievement with student-driven math lessons! Students will gain true ownership over their learning by first being challenged by a real-world task and then reaching a solution by building on previous learning, their intuitive observations, and thought-provoking questions from the teacher to guide them towards mastery.

Jessica Solano
@2017FLTOY
Highlands Grove Elementary, Polk County Public Schools, Lakeland, Florida

Orange County Convention Center, W300

146 FL
Elementary Florida Standards Assessment (FSA) Update

3–5 Session

The Florida Department of Education's Test Development Center will present information on Florida Standards Assessments (FSA) for elementary school.

Trinidad Dixon
Florida Department of Education, Tallahassee

Orange County Convention Center, W103

147 ASSESS
Formative Assessment: Brought to You by the Number 5

General Interest Session

Mix the 5 Practices (Smith and Stein 2011), the Formative 5, and 5 of NCTM's Effective Teaching Practices, and you have the perfect recipe for an exceptional formative assessment experience that will guide your planning, enhance your instruction, drive student discussions, and ultimately improve student understanding. Come experience this with us!

Jonathan Wray
@jonathanwray
Howard County Public Schools, Ellicott City, Maryland

Orange County Convention Center, W110

148 TEACH
Fostering "Aha" Moments in the Math Classroom

10–12 Session

For many students, math and science are simply viewed as formulas and calculations. In this session, we will discuss how to create lessons by sequencing problems and ideas to foster a more conceptual understanding of topics. Participants will examine sample lessons as well as have the opportunity to create their own.

Christina Pawlowski
Commack High School, New York
Lawrence Maggio
Plainedge High School, North Massapequa, New York

Orange County Convention Center, W308 CD

149 EMPOW
How Do You Teach Stats? Incorporating a Coherent Plan for the Statistics Progression in Your Class

8–10 Session

Do you need help teaching CCSS stats in grades 9–12? Would you like to see and participate in some activities that promote understanding of the statistics standards? Come spend an hour with us to see activities that truly follow the Statistics Progression. Are you teaching the traditional way or following the integrated model? Either way we can help!

Chad Shepherd
Pontiac Township High School, Illinois
Jake Krause
Pontiac Township High School, Illinois

Orange County Convention Center, W312

150 TOOLS
Making Fractions Fun Again for Upper Elementary Students!

3–5 Session

This presentation will focus on fun and engaging activities that incorporate the strategic use of mathematical manipulatives and technology in order to enhance students' learning and understanding of fraction concepts. The session will inspire teachers to love teaching fractions and sharing that enthusiasm with their children!

Jennifer Wilson
Midway Elementary School of Science and Engineering, Anderson, South Carolina

Orange County Convention Center, W109

151 TEACH
Making It Count: Exploring the Research on Counting and Related Resources

Pre-K–2 Session

Participants will explore the complexities of how students come to develop an understanding of counting and the counting principles. Video clips of students are embedded throughout the session, and participants will be provided with free counting resources that will aid in classroom instruction and in the implementation of professional development.

Claire Riddell
FCR-STEM, Jacksonville, Florida
Robert Schoen
Florida State University, Tallahassee

Orange County Convention Center, W202

8:00 A.M.–9:00 A.M.

152 COLLAB
Math PLCs: What Can We Do That's Meaningful?

General Interest Session

Ever wonder how to structure your math PLC with something that's meaningful and worthwhile and that will help all teachers on your team? This session will focus on three things that our district chose to work on for math-specific PLCs. We will show you how to implement a math PLC in your building and how to choose a focus of your own.

Stephanie Diehl
Exeter Township School District, Reading, Pennsylvania

Orange County Convention Center, W303

153 TEACH
Not Your Parents' Lecture: Strategies for Learner-Centered Instruction

8–10 Session

We will be examining and discussing the NCTM Effective Mathematics Teaching Practices. Participants will be collaborating to formulate a variety of ways to implement these practices by making small instructional changes to move toward a learner-centered classroom. This session will model learner-centered instruction.

Mark Waxmonsky
L&N STEM Academy, Knoxville, Tennessee
Ali Signore
L&N STEM Academy, Knoxville, Tennessee

Orange County Convention Center, W307 AB

Download speaker handouts!
View sessions in the mobile app or visit **nctm.org/planorlando** to access available presentation handouts.

154 TOOLS
Teach with an Expectation to Learn More Than the Standards

10–12 Session

I will discuss how high school teaching practices should be guided by how previous material has built up to this current lesson and how this current lesson leads to future learning. Educators should be willing to educate students on not just the subject matter but also on how to learn the mathematics for themselves and how to actually apply those learning habits to future material. High school students need to understand that the standards being taught are built from prerequisite material and lead to further mathematical knowledge and logical reasoning. Additionally, I will discuss how this understanding can potentially lead to postsecondary success in mathematics, especially for non-STEM students.

Damarrio Holloway
Discovery High School, Lawrenceville, Georgia

Orange County Convention Center, W311 ABC

8:00 A.M.–9:15 A.M.

155 TEACH
A Clear Vision for Utilizing Number Lines

Pre-K–2 Workshop

Research shows a relationship between students' understanding of number lines and math achievement. In this interactive session for K–5 educators, participants will explore the progression from number tracks to number lines and engage in games and activities to improve understanding of relative position, magnitude, and operations.

Debi DePaul
ORIGO Education, Gig Harbor, Washington
Gretchen Presley
ORIGO Education, Earth City, Missouri

Orange County Convention Center, W105

8:00 A.M.–9:15 A.M.

156 TEACH
Building a Box to Promote Geometry Concepts and Their Understanding

6–8 Workshop

Construct a box from a used greeting card, and give your students a better understanding of geometry terms and the nuances of definitions involved with quadrilaterals and other polygons. Deliver an in-depth understanding of the relationships among perimeter, area, and volume. Ratios and proportions are explored and utilized to make predictions.

Nicholas Restivo
Mathematical Olympiads for Elementary and Middle Schools, Bellmore, New York

Orange County Convention Center, W307 CD

157 TEACH
Cognitively Guiding Your Students through Games, Number Talks, and Counting Collections

Pre-K–2 Workshop

This session highlights the many avenues by which CGI (cognitively guided instruction) can be incorporated into a math classroom. This includes number talks, workstations, counting collections, and math games. This session will exhibit how students' conversations and math discourse can be used to guide instruction based on student cognition.

Kim Romain
Little Rock School District, Arkansas
Patricia Goodman
Little Rock School District, Arkansas

Orange County Convention Center, W108

158 TEACH
Connections between Middle School Area Formulas

6–8 Workshop

Participants will construct a variety of 2-D shapes (parallelograms, triangles, trapezoids, circles, rhombi, and kites) with construction paper and then examine their connections to the area formula for a rectangle. We will discuss how exposing these connections to students can build greater retention of formula knowledge for assessments.

Jeffery Baugus
Santa Rosa County Public Schools, Milton, Florida

Orange County Convention Center, W102

159 TEACH
Linear or Quadratic? Let's Engage in a Rich Task!

8–10 Workshop

Participants will explore a rich algebraic task that provides unique opportunities to uncover students' thinking about linear and quadratic functions. Participants will also examine work samples and consider how to respond to students' current thinking as well as how to extend their ideas in order to deepen their conceptual understanding.

Jennifer Outzs
Seminole Middle School, Florida
Frederick Dillon
Institute for Learning, Strongsville, Ohio

Orange County Convention Center, W311 D

160 TOOLS
Polar, Parametric, Rectangular . . . Can You See the Connection?

10–12 Workshop

Making connections between polar, parametric, and rectangular equations can be challenging when only using paper and pencil. In this session, participants explore equations by completing engaging activities using manipulatives, calculators, and video clips that prepare students for future math courses. Hands-on activities and projects will be shared!

Deedee Henderson
Oxford High School, Alabama

Orange County Convention Center, W305

Help kids reach new heights with Bedtime Math!

PARENTS COUNT

Fun nightly math at home
proven to improve kids' math skills

CRAZY 8S CLUB

Hands-on games that
get kids fired up about math

Free kit ★ After school ★ 12-16 kids

CHECK IT OUT!

Booth 420

Come see Crazy 8s in action

THUR 9:30AM ★ ROOM W304GH

Bedtime Math

8:00 A.M.–9:15 A.M.

161 TEACH
Preparing and Planning for Instructional Routines That Engage All Learners

8–10 Workshop

How does one plan to enact rich tasks with students? In this workshop, participants will experience an instructional routine called Contemplate then Calculate and then select and plan a task to use with the routine. Participants will then practice using their task at their table groups and share how and why they selected this particular task.

Liz Ramirez
New Visions for Public Schools, New York, New York
David Wees
New Visions for Public Schools, New York, New York
Sara Toguchi
New Visions for Public Schools, Manhattan, New York

Orange County Convention Center, W311 EF

162 EQUITY
Problem-Based Enhanced-Language Learning: Providing Access to English Language Learners

3–5 Workshop

Problem-Based Enhanced-Language Learning (PBELL) is a model that provides access to rigorous content instruction and academic language to culturally and linguistically diverse learners in the math classroom. This workshop will provide ideas in problem-based instruction, content-language objectives, mathematics discourse, collaboration, and integration of reading, writing, listening, and speaking.

Silvia Aparicio
Arizona State University, Tempe
Stephanie Lund
Arizona State University, Tempe
Jennifer Birrell
Arizona State University, Tempe

Orange County Convention Center, W311 GH

163 TOOLS
Stop Memorizing Formulas: Focus on Visual Feedback & Collaborative Responses with Desmos & GeoGebra

8–10 Workshop

Students want a simple answer in a box, and teachers want to understand the relationship. See how geometric visualizations from GeoGebra reveal structure in math expressions, and Desmos Activity Builder utilizes the collective knowledge of your students. We'll also discuss strategies for facilitating. Bring your laptop or tablet if you have it.

Jedidiah Butler
Perris Union High School District, Murrieta, California

Orange County Convention Center, W101

164 COLLAB
The Coach, the Novice, and the Expert

Coaches/Leaders/Teacher Educators Workshop

NCTM's *Principles to Actions* advocates for teachers to understand what students know and need to learn and to then challenge and support them to learn it well. Coaches apply this principle to teachers. In this session, participants will explore the different philosophies of coaching and determine ways to promote the expert and train the novice.

Barbara Everhart
Educational Specialist, berealcoach.com, Minneapolis, Minnesota

Orange County Convention Center, W309

165 TEACH
The Secret to Teaching More by Lecturing Less

10–12 Workshop

Learn how to replace lectures with short activities that make teenagers think critically, develop and retain skills, and talk about math. You will leave this workshop enthusiastic about sharing a collection of hands-on activities with your students.

Jessica Heitfield
Riverside High School, Leesburg, Virginia

Orange County Convention Center, W104

8:00 A.M.–9:15 A.M.

166 TEACH
Word Problems? No Problem!

3–5 Workshop

In this interactive session, participants will experience the collaborative process of adding depth, meaning, and mathematical relevance to inquiry-based word problems. Together, we will develop criteria for successfully creating and solving word problems and experience the role that feedback plays in enhancing our mathematics learning.

Ken Pettigrew
York Region District School Board, Markham, Ontario, Canada
Justin Hui
York Region District School Board, Markham, Ontario, Canada

Orange County Convention Center, W203

9:30 A.M.–10:30 A.M.

167 TEACH
Am I Doing This Right? Looking at PBL Practice from a Thematic Perspective

8–10 Session

Unsatisfied with your attempts at PBL? We will focus on the practice of problem-based learning through the lens of connected themes. We'll look at issues like motivating students to recall prior knowledge and when to apply it, as well as how this leads to new learning. After learning some PBL theory, participants will experience connected problems.

Carmel Schettino
@SchettinoPBL
Deerfield Academy, Massachusetts

Orange County Convention Center, W204

168 EQUITY
Creating Access to Mathematics by Eliminating Barriers

General Interest Session

Accessibility is an essential component in creating equitable opportunities for students learning math in self-contained, resource, and inclusion classrooms. This session will explore the areas of cognitive functioning and barriers that students face in math class. Lesson-planning protocols will be introduced as a means to help eliminate those barriers.

Andrew Gael
Cooke Center Academy, New York, New York
Nitzeida Clare
Cooke Center Academy, New York, New York

Orange County Convention Center, W109

169 EQUITY
Culturally Responsive Teaching: Cultivating Learning for Each and Every Student!

6–8 Session

In an effort to promote culturally relevant teaching, we will describe strategies that can be used during instruction. We will also discuss things that should be attended to, including the kinds of representations used, modes of communications, reasoning strategies employed, and the nature of the mathematical tasks posed.

Ruthmae Sears
University of South Florida, Tampa
Lakesia Dupree
University of South Florida, Tampa
Caree Pinder
University of South Florida, Tampa

Orange County Convention Center, W307 AB

170 FL
Easy, Fun, and Engaging Activities to Practice and Assess Math Standards

6–8 Session

Are you looking for engaging activities that you can immediately use in your classroom? Do you need more math activities for your students? Come learn about various activities that can be used for practicing and assessing different math concepts. The activities shared will be primarily focused on middle school standards, but can also be used for elementary as well.

Christian DeLuca
Brevard Public Schools, West Melbourne, Florida

Orange County Convention Center, W312

171 EMPOW
Functions with Transformations and Real-World Connections: Getting It Right & Keeping It Rich

10–12 Session

Functions with transformations and parameter explorations appear several times in algebra and trigonometry. Students explore effects and apply results in real-world contexts. How can we do this even better with students as they move through algebra and geometry and into statistics and calculus? Let's see what our students won't be missing anymore.

Rose Mary Zbiek
Pennsylvania State University, University Park, Pennsylvania

Orange County Convention Center, W110

172 COLLAB
Instructional Rounds: Creating Shared Values around Student Mathematical Thinking

Coaches/Leaders/Teacher Educators Session

Engage in an instructional rounds protocol to analyze student mathematical thinking and adapt it to implement at your site. Understand why rounds help teachers to develop a common understanding of NCTM's Mathematics Teaching Practices, examine student evidence, and make instructional decisions that support increasing equity and access for all students.

Kathy Clemmer
Loyola Marymount University, Los Angeles, California
Tatiana Mirzaian
Loyola Marymount University, Los Angeles, California
Katie Laskasky
Loyola Marymount University, Los Angeles, California

Orange County Convention Center, W300

173 TEACH
Making High Yield Routines Work in Pre-K–Grade 2

Pre-K–2 Session

Are your daily routines helping students make sense of important mathematics? Explore routines that promise more bang for your buck, with higher returns in the realms of math practices, numeracy, and computational fluency delivered in small chunks of time. Number talks, Clothesline Math, and Which One Doesn't Belong are a few of the routines explored in this session.

Patricia Kepler
@KeplerTrish
The Greenwich Country Day School, Connecticut

Orange County Convention Center, W311 ABC

174 ASSESS
NC Early Mathematics Placement Testing Program: A Looking Glass into College Math Readiness

Coaches/Leaders/Teacher Educators Session

Twenty years of success! NC EMPT spans high school and college math and fosters key communication. Each year, 40,000 high school students experience an assessment that mirrors current North Carolina college/university math placement tests. Results are tailored to each student, provide eye-opening advice, and are a super motivator to avoid costly math remediation.

Ellen Hilgoe
East Carolina University, Greenville, North Carolina

Orange County Convention Center, W303

175 TEACH
Redefining Problem Solving in Mathematics with Technology & Wonder

8–10 Session

This session will have teachers engaging in several problem-solving tasks by asking students to wonder about problems by peeling back the layers of a problem: eliminating the text, eliminating the jargon, eliminating the structure, and using technology to engage the learner.

Eric Milou
Rowan University, Glassboro, New Jersey

Orange County Convention Center, W308 CD

176 TEACH
Sense Making? Aren't We Already Doing That in Literacy?

3–5 Session

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

Annie Fetter
The Math Forum at NCTM, Reston, Virginia

Orange County Convention Center, W202

177 FL
Traces of Thinking: Representations That Support Mathematical Discourse

3–5 Session

NCTM has identified facilitating productive mathematical discourse and using and connecting meaningful mathematical representations as high leverage instructional practices, but how are these practices connected? In this session, we'll explore how the choice of mathematical representation can affect the mathematical discourse that occurs.

Douglas Hill
@zack_hill
Pinellas County Schools, Largo, Florida

Orange County Convention Center, W308 AB

178 FL
What Does A, B, C, D, F Mean Anyway? A Standards-Based Approach to Grading

General Interest Session

This session will look at standards-based marking practices as a means for determining student strengths and weaknesses to drive further instruction. Participants will engage in activities that show how to look at student work and provide more accurate feedback to students and parents.

Michael Banek
School District of Palm Beach County, West Palm Beach, Florida

Orange County Convention Center, W103

178.1 EW TEACH
Tools to Facilitate Rich Conversation in the Discourse-Driven Math Classroom

3–5 Exhibitor Workshop

This workshop will focus on ways to facilitate and enhance mathematical discussions in the classroom, based around major content areas. Participants will be equipped with tools and techniques to plan and manage conversations; evaluate, select, and sequence student responses; and elevate the rigor of discourse in the mathematics classroom.

Curriculum Associates
North Billerica, Massachusetts

Orange County Convention Center, W304CD

178.2 EW TEACH
Bringing Students "Into the Fold"

General Interest Exhibitor Workshop

Create 3-D graphic organizers that help students interact with mathematical content and concepts. Dinah Zike's Foldables® use visual and spatial modalities to build understanding, make connections, and help students remember information. Learn how to fold envelopes into mini-notebooks and leave with your handmade samples, ready to use in your own classroom.

Dinah-Might/Dinah.com
San Antonio, Texas

Orange County Convention Center, W304AB

178.3 EW TEACH
Building Students' Mindsets for Learning: Understanding the Intent of the Florida Math Standards

General Interest Exhibitor Workshop

This session will focus on the importance of engaging students in productive struggle and building students' mindsets for learning mathematics in order to meet the requirements of the Florida Mathematics Standards. First 20 attendees will receive a copy of the new video resource *Number Talks: Fractions, Decimals and Percentages* by Sherry Parrish and Ann Dominick!

Math Solutions—a Division of Houghton Mifflin Harcourt
Sausalito, California

Orange County Convention Center, W304EF

9:45 A.M.–11:00 A.M.

179 EMPOW
Building Understanding of the Meaning of the Equal (=) Sign

Pre-K–2 Workshop

How do you build a child's understanding of the meaning of the equal sign? Learn how to build from concrete to representational to abstract understanding. Participants will engage in tasks that will promote mastery of two first-grade standards (1.OA.D.7 and 1.OA.D.8). Understanding of these standards is essential at every grade level.

Barbara Knox
Dover Elementary School, Hillsborough County Public Schools, Florida
Deena Ham
Jackson Elementary School, Hillsborough County Public Schools, Plant City, Florida

Orange County Convention Center, W307 CD

180 TEACH
Creating the Statistical Experience You Wish You'd Had

6–8 Workshop

Think about your experiences in statistics. Now imagine your students engaging with statistics the exact same way. Are you excited for them? Or terrified? Let's analyze evidence in court cases, create statistical models, and engage in simulations with high quality tasks—all while developing students' understanding (and love) of statistics.

Shauna Hedgepeth
@approx_normal
Purvis Middle School, Mississippi

Orange County Convention Center, W101

181 TOOLS
Dividing Decimals with Cuisenaire Rods: Connect the Symbolic, Concrete, & Contextual Representations

3–5 Workshop

How do I divide thee? Let me represent the many ways. Participants will explore partitive and measurement division of decimals using Cuisenaire rods as a length representation. This session will focus on connecting multiple representations for decimal division: symbolic, concrete, and contextual.

Denise Peppers
Columbus Regional Mathematics Collaborative, Georgia

Orange County Convention Center, W104

182 TOOLS
Facilitating Productive Classroom Conversations Using Desmos Activity Builder

8–10 Workshop

Join us to experience a Desmos activity through a student lens, and learn how to utilize the teacher dashboard and classroom conversation toolkit to facilitate individual and collaborative student thinking. We'll also discuss ways to adapt or create your own high-quality Desmos activities. Bring a laptop or tablet to maximize your participation.

Heather Kohn
Marlborough Public Schools, Massachusetts
Lisa Bejarano
Academy School District 20, Manitou Springs, Colorado

Orange County Convention Center, W105

9:45 A.M.–11:00 A.M.

183 TEACH
Fostering Inquiry, Discussion, and Collaboration in the K–2 Classroom

Pre-K–2 Workshop

Struggling to engage K–2 students in meaningful mathematical discussions? This session will share specific questioning strategies that increase inquiry, reasoning, and independence. Teachers will explore and develop multidimensional anchor tasks, collaborating to craft intentional prompts and think through anticipated student responses.

Denise Bringslid
Mary Lin Elementary, Atlanta Public Schools, Georgia
Emily Fuller
Mary Lin Elementary, Atlanta Public Schools, Georgia

Orange County Convention Center, W309

184 EMPOW
Hit a Home Run with Place Value: Progressing through the K–5 Stretch

3–5 Workshop

Want to pitch a perfect game and steal your students' attention? Go to bat with hands-on activities designed to help you understand the bases in the K–5 Number Operations & Place Value learning progressions, from counting objects to multiplying fractions. Reflect in the dugout on the Common Core math practices and leave with a scorecard of ideas to use tomorrow!

Jennifer Ranum
Math Learning Center, Windsor, Colorado
Lori Bluemel
Math Learning Center, Chandler, Arizona

Orange County Convention Center, W311 EF

185 TOOLS
Making Math Learning Visible with Technology Tools and Maker Ideas

3–5 Workshop

In this session, participants will learn ways students can make their learning visible in math class. Technology tools and maker ideas will be shared that allow students to use creativity in math and help students apply their math learning both in school and at home. Lesson plans, rubrics, and parent communication for these lessons will be shared.

Nancy Penchev
Scheck Hillel Community Day School, North Miami Beach, Florida
Jenna Kraft
Scheck Hillel Community Day School, North Miami Beach, Florida

Orange County Convention Center, W203

186 TEACH
Math Learning Disabilities, Dyslexia, and ADHD: Connections and Solutions

6–8 Workshop

Eighty percent of people with SLI and 31 percent of people with ADHD struggle with math, yet many students never get high-quality math remediation. Join board-certified educational therapist Diana Kennedy to learn the symptoms and causes of math LDs and their relationship with dyslexia and ADHD. Learn games, lessons, and precepts to help all math students excel.

Diana Black
MindSpark, San Anselmo, California

Orange County Convention Center, W311 D

187 COLLAB
New and Preservice Teachers Workshop

Coaches/Leaders/Teacher Educators Workshop

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

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

Orange County Convention Center, W305

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9:45 A.M.–11:00 A.M.

188 FL
STEM Satellites: A Mobile Mathematics and Science Initiative for Orlando Children's Hospitals

8–10 Workshop

In this workshop, the presenters will engage participants in an innovative Florida initiative using NASA-themed mathematics resources and activities developed to motivate critically ill children (and other underserved and underrepresented youth) ages 10–18, to pursue STEM learning and to increase their interest in STEM professions.

Megan Nickels
University of Central Florida, Orlando
Craig Cullen
Illinois State University, Normal
Sarah Bush
University of Central Florida, Orlando

Orange County Convention Center, W102

189 FL
Teaching the Tough Topics in Geometry

8–10 Workshop

This session will highlight strategies and activities to increase student engagement through thinking and talking about geometry. Topics will include geometric constructions, partitioning a line segment, working with radians, and vocabulary development. Participants will leave with classroom-ready activities.

Vicki Goggans
Okeechobee High School, Florida
Diana Snider
Palm Beach County School District, West Palm Beach, Florida

Orange County Convention Center, W311 GH

190 TEACH

Transformational Geometry: Facilitate Meaningful Discourse through Student Investigations

8–10 Workshop

Come join an interactive session on transformational geometry. Explore how to facilitate meaningful discourse while engaging students in hands-on activities used to transform figures and to predict the effect of a given rigid motion on a given figure while using manipulatives and handheld technology.

Christine Thomas
Georgia State University, Atlanta

Orange County Convention Center, W108

11:00 A.M.–12:00 P.M.

191 FL
A Journey through the K–2 Operations and Algebraic Thinking Domain

Pre-K–2 Session

Are you ready to take a journey through the Operations and Algebraic Thinking domain for K–grade 2? Come explore the standards in this domain, and learn how they progress from kindergarten through second grade while engaging in hands-on experiences. Lessons learned from my journey through this domain in K–2 classrooms will be shared.

Leslie Kraynik
Brevard Public Schools, Viera, Florida

Orange County Convention Center, W308 AB

192 EQUITY
Examining Tier 1 and Tier 2 Mathematics Instruction: Supporting Students Who Struggle

3–5 Session

When focusing on Multi-Tiered Systems of Support, a goal is to develop highly engaging Tier 1 instruction and Tier 2 Interventions for students who struggle, particularly students with disabilities. This session considers interventions and assessments using multiple strategies for learning number, operations, and algebraic thinking.

Karen Karp
Johns Hopkins University, Baltimore, Maryland

Orange County Convention Center, W109

11:00 A.M.–12:00 P.M.

193 TOOLS
Inquiring Minds Want to Know

6–8 Session

Spark your creativity with technology to enhance student-centered learning environments! Promote and solidify conceptual understanding of middle school topics including, number sense, algebra, geometry, and probability. Look at different lessons through the lens of the 4-E Model for inquiry learning.

Christi Fricks
@ChristiFricks
Riverside Middle School, Pendleton, South Carolina
Brenda Elmore
Riverside Middle School, Pendleton, South Carolina

Orange County Convention Center, W303

194 TOOLS
Math in Motion: Using Animated Thinking Models to Promote Mathematical Discourse

General Interest Session

Animated images are powerful tools for unleashing mathematical discourse. When student thinking is represented with animation, students are able to interact with models of their own thinking. During this highly interactive session, animated thinking models will be showcased and then given to participants for use in their own classrooms.

Steve Wyborney
Ontario School District, Oregon

Orange County Convention Center, W307 AB

195 TOOLS
Math Should Be Fun

8–10 Session

Spice up your math class! The use of games is an excellent way to practice math standards. If you are looking for a way to effectively chunk standards, try using games. In this session, participants will play engaging interactive games both online and hands-on. Games from algebra, statistics, precalculus, geometry, and more. Classroom ready.

Dawn Feeney
Timber Creek High School, Orlando, Florida
Rebecca Lee
Timber Creek High School, Orlando, Florida

Orange County Convention Center, W312

196 TEACH
Now That You Flipped Your Class, What Comes Next?

10–12 Session

Making videos and taping lectures is the easy part; what comes next is where the real learning occurs. In this session, we will discuss how to maximize the potential of the flipped classroom model. Activities for a wide range of classes (including calculus, AP Statistics, precalculus, and algebra 2) will be shared.

Joel Evans
Hatboro-Horsham High School, Horsham, Pennsylvania

Orange County Convention Center, W204

197 ASSESS
Prevent the Panic! Foster Multiplication Fact Fluency

3–5 Session

Replace the panic induced by timed multiplication tests with an approach that helps students build fact fluency by noticing relationships and using strategies. Drawing on our work with struggling fourth graders, we will share how we used alternative assessment methods to inform the design of lessons to foster fluency and confidence with multiplication.

Amy Gehring
Orange County Public Schools, Orlando, Florida
Barbara White
Orange County Public Schools, Orlando, Florida
Wendy Bray
Florida Center for Research in Science, Technology, Engineering, and Mathematics at FSU, Tallahassee

Orange County Convention Center, W103

11:00 A.M.–12:00 P.M.

198 EMPOW
The Cause of the Problem in Teaching Proofs in School Geometry: Pedagogical or Philosophical?

Research Session

Writing proof has long been one main goal of school geometry courses, although it has been given less space recently than in the past. But many studies have shown that school math curricula face a dilemma when it comes to proof geometry. According to recent thinking, the problem is more philosophical than pedagogical, as it is based on the nature of proof.

Min bahadur Shrestha
Central Department of Education, Tribhuvan University, Kirtipur, Kathmandu, Nepal

Orange County Convention Center, W300

199 TEACH
This Ain't Your Mama's Math

Pre-K–2 Session

Fun, meaningful, engaging-this ain't your mama's math! Transform your classroom with math lessons that are innovative, hands-on, and engaging, and that students will eagerly look forward to each day. Learn how to creatively challenge your students, integrate other subject areas into your math time, and lay a solid foundation for math success!

Deeanna Golden
Jackson County School Board, Marianna, Florida
Vickie Plant
Jackson County School Board, Marianna, Florida

Orange County Convention Center, W202

200 TOOLS
Using Virtual Manipulatives That Develop the Math Practices and Deepen Conceptual Understanding

General Interest Session

Virtual manipulatives can enable students to interact with concepts in ways that aren't possible with pencil, paper, or plastic. As students interact with dynamic technology, we see how they engage in math practices such as sense making and reasoning abstractly. Explore websites with free manipulatives for topics ranging from pre-K through algebra 2.

David Woods
@Woodsy_92
DreamBox Learning, Bellevue, Washington

Orange County Convention Center, W110

201 TEACH
Why Ask Why? The Art of Questioning

6–8 Session

In this session, teachers will develop quality questions based on either a mathematical concept or specific task using one of three strategies: Question Sort Routine; Depth and Complexity Icons, and the Question Matrix.

Shannon Motsco
Anne Arundel County Public Schools, Glen Burnie, Maryland
Mary Rathlev
Anne Arundel County Public Schools, Glen Burnie, Maryland

Orange County Convention Center, W311 ABC

202 TOOLS
Meaningful Modeling of Mathematics Using Monopoly!

8–10 Workshop

Who doesn't love Monopoly? Experience a mathematically rich lesson using the Monopoly board and property cards. Participants will graph scatterplots, draw and calculate lines of best fit, and compare and contrast equations using different attributes of the Monopoly game such as "spaces from go" versus "cost" or versus "rent."

Erin Landry
Louisiana Virtual Charter Academy, Broussard

Orange County Convention Center, W308 CD

11:00 A.M.–12:00 P.M.

202.1 eW TOOLS
Making Algebra Child's Play® with Hands-On Equations® & HOE Fractions

6–8 Exhibitor Workshop

Hands-On Equations can enable you to introduce algebraic concepts to ALL of your students in grades 4 and up, thereby enhancing their self-esteem and interest in mathematics. Equations such as $4x + 3 = 3x + 9$ and $2(2x + 1) = x + 14$ become child's play! Bonus: See Dr. Borenson's new program for concretely solving fractional linear equations.

Borenson & Associates
Allentown, Pennsylvania

Orange County Convention Center, W304AB

202.2 eW TOOLS
SpringBoard and Desmos: Making Mathematics Come Alive with Interactive Digital Classroom Activities

8–10 Exhibitor Workshop

A hallmark of SpringBoard Math is students working collaboratively. Desmos activities invite students to connect how working mathematically means working socially and creatively. Learn to utilize these activities in your classroom to get your students to engage in mathematical discourse, constructing arguments their peers will assess for clarity.

The College Board
New York, New York

Orange County Convention Center, W304CD

202.3 eW TEACH
Bridges Intervention: Delivering Clear and Systematic Instruction

Coaches/Leaders/Teacher Educators
Exhibitor Workshop

Searching for an effective K–5 intervention resource with built-in assessments and frequent progress monitoring? Discover how Bridges Intervention uses the power of visual models to reach struggling students. Organized by content rather than grade, each session includes warm-ups and lessons, as well as practice pages focused on key standards.

The Math Learning Center
Salem, Oregon

Orange County Convention Center, W304EF

11:30 A.M.–12:00 P.M.

203 TEACH
Developing Persistence and Creativity with Non-Routine Problems

6–8 Burst

Participants will receive a packet of several challenging problems that have proven effective at winning student interest, developing persistence, and encouraging creativity. Participants will learn from the experiences of one school how to best introduce these problems to students and the research that supports this practice of teaching.

Hoyun Cho
Capital University, Columbus, Ohio
Gary Lawrence
Mustard Seed School, Hoboken, New Jersey

Orange County Convention Center, W108

204 ASSESS
Empowering Learners through Formative Assessment

3–5 Burst

Do you want to be sure that your students are benefiting from instruction? Formative assessment tools empower teachers to know their students' understanding of math concepts during instruction. This fast-paced presentation will provide teachers with tools and practices that provide a clear overview of learning throughout lessons and units.

Jessica Talada
Elmira City School District/Elmira College, New York

Orange County Convention Center, W102

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

Principles to Actions Professional Learning Toolkit

NCTM's *Principles to Actions* Professional Learning Toolkit provides grade-band-specific professional learning modules focused on the Effective Teaching Practices and Guiding Principles from *Principles to Actions: Ensuring Mathematical Success for All*—NCTM's landmark publication that connects research with practice. Specific research-based teaching practices that are essential for a high-quality mathematics education for each and every student are combined with core principles to build a successful mathematics program at all levels.

The *Principles to Actions* toolkit helps support professional learning with teachers by analyzing mathematical tasks, narrative and video cases, student work samples, vignettes, and more. Each module includes a presentation, presenter notes, and required materials. Teachers learn by abstracting general ideas from the specific examples about how to effectively support student learning.

The teaching and learning modules were developed in collaboration with the Institute for Learning at the University of Pittsburgh and are available exclusively to NCTM members. Limited modules are provided for each grade level.

Building on *Principles to Actions*

Many related publications build on *Principles to Actions* and the toolkit.

Principles to Actions–related publications explore implementing the effective mathematics teaching practices; go in depth about the research behind *Principles to Actions*; and elaborate on such topics as access and equity, tools and technology, assessment, and more.

- ***Taking Action: Implementing Effective Mathematics Teaching Practices in—***

  – Grades Pre-K–5
  – Grades 6–8
  – Grades 9–12

  This set of grade-band books elaborates on the teaching and learning principles described in *Principles to Actions*. Each book provides examples and activities to help teachers develop their understanding of the eight effective mathematics teaching practices and how they can be enacted in the classroom.

- ***Enhancing Classroom Practice with Research behind "Principles to Actions"***

  This book summarizes and synthesizes the research behind each of the guiding principles and essential elements in *Principles to Actions*. It also provides examples of what this research might look like in classroom practice. This resource will provide readers with a sense of where the field stands in its knowledge and hypotheses about the big ideas put forth in *Principles to Actions*. In addition, it makes the principles and elements—as well as the research—concrete for readers by offering examples from classroom practice.

- ***Access and Equity: Promoting High-Quality Mathematics in—***

  – Grades Pre-K–2
  – Grades 3–5
  – Grades 6–8
  – Grades 9–12

- ***Principles to Actions* Elaboration Series**

  – Access and Equity
  – Curriculum
  – Tools and Technology
  – Assessment
  – Professionalism

11:30 A.M.–12:00 P.M.

205 EMPOW
Exciting and Challenging: The Integration of IB, AP, and STEM in a High School Mathematics Classroom

10–12 Burst

This presentation will provide the participants with ways to align the IB, AP, and STEM curricula to enhance learning opportunities for students. The speaker will share integration challenges that have been faced and will provide suggestions to tackle the pitfalls. Participants will leave the presentation with resources and activities.

Tamika McCleskey
Douglas County High School, Douglasville, Georgia

Orange County Convention Center, W105

206 TEACH
Fun and Games with the Hundred Chart

Pre-K–2 Burst

Patterns abound in the hundred chart, but there is so much more to explore! In this completely interactive session, you will learn how to build students' conceptual understanding of place value and the four whole number operations while playing and having fun. Leave with deeper understanding and activities to do in your classroom tomorrow.

Robyn Silbey
Robyn Silbey Professional Development, Gaithersburg, Maryland

Orange County Convention Center, W311 D

207 EQUITY
Inspiring Students to Pursue Careers in Mathematics

10–12 Burst

Often students fail to see how their mathematical abilities will be valued in future careers. This session provides some simple and creative tools to encourage students to pursue mathematics and the many careers that use mathematical skills.

Patrick Eggleton
Taylor University, Upland, Indiana

Orange County Convention Center, W203

208 EMPOW
Modeling for Motivation: Relevant Realistic Activities Created by Teachers

8–10 Burst

The Common Core's Standard for Mathematical Practice 4 calls for modeling, which can ignite student motivation, making the curriculum more robust and relevant to the real world. This talk introduces model-eliciting activities (MEAs) and shares teacher-created MEAs and is funded by THEC ITQ grant, Let's Get Physical! Teaching Mathematics through the Lens of Physics.

Lauren Jeneva Clark
University of Tennessee, Knoxville
Peggy Bertrand
University of Tennessee, Knoxville

Orange County Convention Center, W104

209 EMPOW
Putting the Metric System in Context through International Classroom Partnerships

3–5 Burst

Students often question why they need to learn the metric system. International classroom collaborative projects put this into context and give students motivation to learn the ways their new friends measure. Participants in this session will learn about successful hands-on activities that encourage a deep understanding of the metric system.

Margaret Thombs
Roger Williams University, Bristol, Rhode Island
Jenny Tsankova
Roger Williams University, Bristol, Rhode Island

Orange County Convention Center, W305

11:30 A.M.–12:00 P.M.

210 TEACH
Puzzles: The Poetry of Logical Ideas

General Interest Burst

If you are a lover of logic, come in. We will engage in a series of logic puzzles to demonstrate the mathematical practices embedded within. Multiple math strategies will be uncovered as we deconstruct Kakuro, KenKen, Sudoku, and other logic puzzles. Puzzles have the power to transform your classroom in a fun and entertaining way. Come play!

Monica Tienda
Oak Park School District, Michigan

Orange County Convention Center, W311 EF

211 COLLAB
Teaching Multiple Strategies: Understanding Challenges to the Mathematics Florida Standards

Pre-K–2 Burst

In this session, I examine how elementary mathematics teachers discuss challenges to teaching multiple strategies as per the Mathematics Florida Standards (MAFS) during a lesson study (LS) cycle, including their purpose, major obstacles, and the ways in which LS helped them learn about multiple strategies and how to implement them in their own classrooms.

Guillermo Farfan
Florida State University, Tallahassee

Orange County Convention Center, W309

212 TOOLS
Using GeoGebra, Photography, and Picture Books to Address Math Anxiety

General Interest Burst

GeoGebra can help motivate young learners to enjoy learning mathematics while addressing math anxiety and attitudes. This presentation will show educators how by importing photography into the GeoGebra software, teachers can explain math concepts and make the learning of math more relevant to the real world while also connecting this to picture books.

Joseph Furner
Florida Atlantic University, Boca Raton
Ana Escuder
Florida Atlantic University, Boca Raton

Orange County Convention Center, W101

213 TEACH
Using the History of Mathematics to Help Students Learn Math

8–10 Burst

Motivating students to learn mathematics is a concern of every teacher, and one source of inspiration rests in the history of mathematics. In this presentation, I will discuss topics that trace the origins of key concepts in secondary mathematics, and I will show how that information might be used to help motivate students to learn.

Sharon O'Kelley
Francis Marion University, Florence, South Carolina

Orange County Convention Center, W311 GH

214 TEACH
Using Virtual Field Trips to Enhance Student Learning in the Upper Elementary Mathematics Classroom

6–8 Burst

We will examine using virtual field trips to address Common Core State Standards in Mathematics. Presenters will also touch on ways in which the Research as Inquiry threshold concept from the Framework for Information Literacy is addressed through experiential learning. Participants will leave with materials that allow them to implement similar lessons.

Katie Rommel-Esham
SUNY College at Geneseo, New York
Michelle Costello
SUNY College at Geneseo, New York

Orange County Convention Center, W307 CD

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

1:30 P.M.–2:30 P.M.

215 COLLAB
Assessing to Inform Teaching and Learning: Formative Assessment Techniques for EVERY Classroom!

General Interest Session

Math specialist and teacher participants will participate in activities that engage classroom-based formative assessment. These classroom-validated techniques are used to guide planning and teaching as well as to monitor and assess learning. The everyday use of observations, interviews, Show Me, hinge questions, and exit tasks makes a difference!

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

Orange County Convention Center, W311 ABC

216 COLLAB
Assessment: The Bridge between Teaching and Learning

General Interest Session

Good teaching starts from where students are, not where we would like them to be. But students do not learn what we teach. That is why assessment is the key to effective instruction. Only by assessing can we find out whether students have learned what we intended, and this presentation will outline the five key strategies of effective assessment.

Dylan Wiliam
University College London; Starke, Florida

Orange County Convention Center, W303

217 EMPOW
Authentically and Meaningfully Integrating the "M" in STEAM: The Mathematics Matters!

3–5 Session

In this session, we will share three concrete examples of classroom-tested inquiries that meaningfully integrate all areas of STEAM: designing a prosthetic arm for a kindergartner, a paleontology investigation, and roller coaster engineering. Our discussion will focus on specific alignment to grades 3–5 CCSSM content and practices.

Sarah Bush
@sarahbbush
Bellarmine University, Louisville, Kentucky
Kristin Cook
Bellarmine University, Louisville, Kentucky
Richard Cox
Bullitt County Public Schools, Mount Washington , Kentucky

Orange County Convention Center, W307 AB

218 TEACH
Bringing ELL Students into the Math Conversation

Pre-K–2 Session

English language learners sometimes struggle in math because the scaffolds that teachers use during reading instruction seem out of place next to math content. In this session, participants will learn strategies that build a culture of discourse in math class by scaffolding lessons using a variety of means of entry and previewing vocabulary.

Jan Scott
Houghton Mifflin Harcourt, Boston, Massachusetts
Dennis Ortman
Houghton Mifflin Harcourt, Boston, Massachusetts

Orange County Convention Center, W308 CD

1:30 P.M.–2:30 P.M.

219 TEACH
Calendar Counts

Pre-K–2 Session

How many standards can you cover with the calendar? Vickie and Deeanna will give you ideas and insights on how to make calendar time one of the most impactful parts of your day. Learn how students can get a daily spiral review of math skills while engaging in meaningful math conversation.

Vickie Plant
Jackson County School Board, Marianna, Florida
Deeanna Golden
Jackson County School Board, Marianna, Florida

Orange County Convention Center, W202

220 TEACH
Designing Questions to Develop Depth and Connections

3–5 Session

One of the Mathematics Teaching Practices recommended in NCTM's *Principles to Actions* is to "pose purposeful questions." In this session, we will use a framework that integrates mathematical and creative thinking to design questions that support students in building depth in understanding of and connections between important mathematical ideas.

Jane Schielack
Texas A&M University, College Station, Texas

Orange County Convention Center, W109

221 FL
EOC Florida Standards Assessment (FSA) Update

10–12 Session

The Florida Department of Education's Test Development Center will present information on Florida Standards Assessments (FSA) for Algebra 1 EOC, Geometry EOC, and Algebra 2 EOC.

Terri Sebring
Test Development Center, Florida Department of Education, Tallahassee

Orange County Convention Center, W312

222 EQUITY
How to Get Your Kids to Come to Life in Your Math Classroom

8–10 Session

It is challenging to create an engaging, culturally rich mathematics classroom. In this presentation, participants will have fun at the same time as they are learning more and more about incorporating student experiences and social issues into the traditional mathematics classroom.

Sizi Goyah
@GOYAHMATH
Brooklyn Center School District, Minnesota

Orange County Convention Center, W308 AB

223 COLLAB
Questioning Your Questions?

6–8 Session

Questioning is at the heart of allowing students to become the owners of mathematical knowledge. By asking thoughtful questions, we can encourage students to think for themselves and develop a personal understanding of the content. In this session, we will engage teachers in prelesson question planning and postlesson reflection.

Kelsey Leonard
Clemson University, South Carolina
Leigh Haltiwanger
Clemson University, South Carolina

Orange County Convention Center, W103

224 TEACH
Taking Action: Eliciting, Supporting, and Using Student Thinking

6–8 Session

Join us to work on a rich task, and then to examine student work for that task. We will consider what the work tells us about student learning and the supports we need to offer to ensure students gain understanding of our mathematical goals. We will explore questions to ask about the work in order to get more information about student learning.

Frederick Dillon
Institute for Learning, Strongsville, Ohio
Jennifer Outzs
Seminole Middle School, Florida

Orange County Convention Center, W204

1:30 P.M.–2:30 P.M.

225 TOOLS
Using Competency-Based Performance Assessments in the Mathematics Classroom

Coaches/Leaders/Teacher Educators Session

We will review how to create meaningful, competency-based, performance assessments that are aligned to the Common Core, infused with technology and writing, and that connect mathematics to the real world. Our focus question will be "How can I use mathematical modeling to understand the world around me?"

Stephanie Iacadoro
Duxbury Public Schools, Massachusetts

Orange County Convention Center, W300

225.1 EW TEACH
Nudging Students from the Concrete to the Abstract Stage

Pre-K–2 Exhibitor Workshop

Many of us have worked with students who are successful in math class as long as they are using manipulatives. Once manipulatives are removed, though, they are unable to perform the same math tasks. Using Singapore Math materials, Tricia Salerno will conduct a mini-lesson to provide insight for how you can help these students in their understanding.

Singapore Math
Tualatin, Oregon

Orange County Convention Center, W304AB

1:30 P.M.–2:45 P.M.

226 COLLAB
Buddy Teachers + Buddy Classrooms = Math Success

Pre-K–2 Workshop

In this games workshop, participants will learn the best operational/place value games for cross-graded settings. Come with a teaching partner from upper elementary, and learn games your students can do together once a week. For older students, it enhances and deepens their mathematical understanding as they teach their buddies. Primary students win too!

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

Orange County Convention Center, W311 GH

227 EQUITY
Developing Language Acquisition for English Language Learners through the Use of Number Talks

Coaches/Leaders/Teacher Educators Workshop

Participants will explore ways to provide access to mathematical content to English language learners through the use of number talks in the classroom. We have designed an interactive workshop that will look at teacher moves, a growth mindset culture, math models, and the value of mistakes, all as tools that support language acquisition and equity.

Annelly Rodas
New York City Department of Education, New York, New York
Xaymara Rosado
New York City Department of Education, New York, New York

Orange County Convention Center, W309

228 TEACH
Group, There It Is: Collaboration, Cooperation, and Competition in the Math Classroom

6–8 Workshop

Learn how to gamify your everyday traditional and technology-enhanced classroom practices and implement grouping strategies to foster collaboration, cooperation, and competition in the math learning environment. Experience the engagement firsthand, and leave with resources you can use immediately with your young mathematicians. Group: There It Is!

Estee Williams
@TeachTechSpace
Beaufort County School District, South Carolina
Davina Coleman
Beaufort County School District, South Carolina

Orange County Convention Center, W104

1:30 P.M.–2:45 P.M.

229 EQUITY
Instructional Strategies for Supporting the Range of Learners

Pre-K–2 Workshop

This session focuses on eight instructional strategies for differentiating classroom activities to meet the needs of the range of learners. These strategies are designed to help teachers learn to adjust the learning environment, and to scaffold or extend the main math ideas of an activity, in order to support and challenge the thinking of all students.

Karen Economopoulos
TERC, Cambridge, Massachusetts

Orange County Convention Center, W108

230 TEACH
Let the Sun Shine . . . Using Trigonometry to Model Daylight Data

10–12 Workshop

Math is EVERYWHERE! In this session, participants will collect and model data for the hours of daylight for world cities using trig functions. Comparisons between the results of various world cities lead to some interesting discoveries and discussion. Leave with an activity proven to motivate student learning.

Scott Knapp
Glenbrook North High School, Northbrook, Minnesota

Orange County Convention Center, W105

231 TEACH
Making Math Meaningful: Models and Methods Develop Conceptual Understanding—"Measure, Make & See"

3–5 Workshop

Learn exciting, innovative, research-based methods and activities to teach measurement, fractions, scale drawing, perimeter, area, and more. Hands-on activities provide practical application leading to student/teacher success, ease, and enjoyment! Hand-outs/materials will be provided. Come! Have fun! We will all measure up!

Donna Monck
Rock Christian Academy, Alpha, New Jersey
Jack Wollman
Superior Quartz, Alpha, New Jersey

Orange County Convention Center, W203

232 EQUITY
No Such Thing as Not a Math Person

3–5 Workshop

Elementary students give up quickly when tasks become difficult. Two teacher-leaders from an urban, Title 1 school district are helping teachers to create a growth mindset in their students about mathematics and to build perseverance. Participants will challenge their own thinking about the math brain and confront some common misconceptions.

Melissa Crowley
Iveland Elementary, Ritenour School District, St. Louis, Missouri
Amanda Harvell
Ritenour Middle School, Ritenour School District, St. Louis, Missouri

Orange County Convention Center, W305

233 TEACH
Preparing for AP Calculus: Strategies to Support All Learners

10–12 Workshop

As math teachers, we need to introduce all our Pre-AP/AP students to strategies that will provide them increased access to calculus concepts and skills. In this session, we will work with the strategies of Rule of 4 Link Sheets, Sorts/Matches, Webs, Concept Splashes, and Math Labs. Participants will gain access to hundreds of samples and examples.

Carol Hynes
Leominster Public Schools, Massachusetts

Orange County Convention Center, W307 CD

234 TEACH
Rehearsing Instructional Routines That Engage All Learners

8–10 Workshop

Have you ever rehearsed teaching with other teachers? Rehearsals are an ideal way for groups of teachers to build consensus around teaching and learning. In this workshop, we'll all participate in a rehearsal of an instructional routine called Contemplate then Calculate. We'll then discuss how rehearsal experiences can transform teaching practice.

David Wees
New Visions for Public Schools, New York, New York
Sara Toguchi
New Visions for Public Schools, New York, New York
Jennifer Lee Kim
New Visions for Public Schools, New York, New York

Orange County Convention Center, W311 EF

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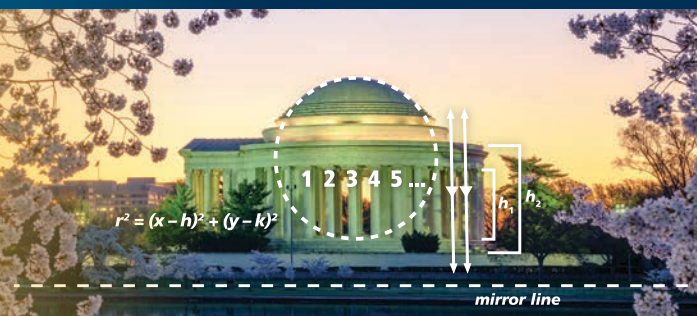
PREMIER MATH EDUCATION EVENT

NCTM ANNUAL MEETING & EXPOSITION 2018

April 25–28 | Washington, DC



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It's never too early to plan ahead for the leading math education event of the year. Network with thousands of your peers and fellow math education professionals to exchange ideas, engage with innovation in the field, and discover new learning practices that will drive student success.

The latest teaching trends and topics will include:

- **Tools and Technology:** Enhancing Instruction and Promoting Innovation
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- SCHOOL AND DISTRICT ADMINISTRATORS

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1:30 P.M.–2:45 P.M.

235 EMPOW
Teaching Statistics Using Simulations

6–8 Workshop

Participants will be shown how students can create data in a simulation using manipulatives and technology. This data will be analyzed to lead us to understand mean, median, mode, range, IQR, maximum, minimum, and a general idea of a confidence interval. We will also examine graphical representations of the data like box plots and histograms.

David Scott
Glasgow High School, Newark, Delaware

Orange County Convention Center, W102

236 TEACH
They're Touching Things Anyway, Why Not Math?? Manipulatives in Secondary Classes.

8–10 Workshop

"Justin, why is it that only elementary teachers and students get to play with toys to learn? It's not fair! I want to use them in my Secondary classes!" I completely agree, imaginary other half of this conversation! Let's fix it! We will use toys and counters to develop concepts from prealgebra through calculus!

Justin Aion
Leechburg Area School District, Greensburg, Pennsylvania

Orange County Convention Center, W101

237 TEACH
To Proficiency and Beyond: A Strategic Approach to Multiplication and Division

3–5 Workshop

This interactive workshop provides educators with powerful visual models to support students' understanding of multiplication/division computation fluency strategies necessary for number talks. It includes a demonstration of visual aids, games, and practical activities that begin with number facts and broaden as they extend to greater numbers.

Gretchen Presley
ORIGO Education, Earth City, Missouri
Debi DePaul
ORIGO Education, Gig Harbor, Washington

Orange County Convention Center, W311 D

3:00 P.M.–4:00 P.M.

238 EMPOW
Conversations That Matter: Applying Math to Explore Important Real-World Issues with Linear Equations

8–10 Session

How can students use math to better understand the world, and what conversations are possible in an grades 8–10 math class? In this presentation, we'll distinguish between conceptual understanding tasks and authentic applications. We'll then use systems of linear equations to explore an important social question: Should we increase the minimum wage?

Karim Ani
Mathalicious, Austin, Texas

Orange County Convention Center, W308 CD

239 EMPOW
Demystify Word Problems by Thinking Like a Detective

Pre-K–2 Session

Get your detective gear on as we investigate the structure of addition and subtraction word problems. We will explore books that help students visualize the structure of the word problems and use easy-to-make work mats and manipulatives to model and solve all types of addition and subtraction word problems, including two-step problems.

Denise Rawding
Newark Public Schools, New Jersey

Orange County Convention Center, W307 AB

240 ASSESS
Digital Show and Tell: A Window into Student Thinking

Pre-K–2 Session

Using a developed planning guide for problem solving, the presenters will showcase the use of an interactive whiteboard application to assess student understanding through written and oral discourse methods regarding mathematical practices and content. In this interactive session, "next steps" and "interventions" are highlighted.

Christine Joseph
East Carolina University, Greenville, North Carolina
Deborah Kozdras
University of South Florida, Tampa

Orange County Convention Center, W202

3:00 P.M.–4:00 P.M.

241 TEACH
Let's Give Them Something to Talk About: Fostering an Environment of Critical Friends in a K–2 Classroom

Pre-K–2 Session

As elementary educators, we understand the need for students to share their thinking, but how do teach them to critically consider the strategies of their peers? How do we teach them to critique the thinking of others? Through meaningful tasks, we will investigate how to foster an environment of critical friends, which will not only support them in SMP 3 ("Construct viable arguments and critique the reasoning of others") but will also assist in building a classroom of reflective thinkers.

Katie Breedlove
@katiebreedlove
Henry County School, McDonough, Georgia
Lindsay Boyle
Henry County School, McDonough, Georgia

Orange County Convention Center, W303

242 TEACH
Facilitating Classroom Discussion through Authentic Tasks in College Algebra

Higher Education Session

As a method of increasing engagement and learning in a college algebra course, authentic and collaborative tasks within discussion sections are designed to supplement and enhance online lectures. Additional training is provided for teaching assistants to facilitate classroom discussions that promote problem solving and student-centered instruction.

Brittany Eichler
University of Florida, Gainesville
Brittney Castanheira
University of Florida, Gainesville

Orange County Convention Center, W300

243 FL
Hands-On Instruction in Grades 6–8

6–8 Session

Learn by doing. Complete grades 6–8 instructional activities with free resources and technology integration. Participants will be able to implement instruction on a variety of tough topics in middle school math with a hands-on approach. Bring your smartphone, tablet, and/or laptop for a fully involved interactive experience.

Adrian Dowdell
Palm Beach County School District, West Palm Beach, Florida

Orange County Convention Center, W308 AB

244 TEACH
Literacy? But I Teach Math!

8–10 Session

This session will examine the use of practical research-based literacy strategies to instruct students in their approach to understanding math content. These techniques for literacy instruction in the math classroom will assist students in understanding how to navigate both multiple-choice and free response questions with greater independence.

Christina Pawlowski
Commack High School, New York
Lawrence Maggio
Plainedge High School, North Massapequa, New York

Orange County Convention Center, W311 ABC

245 EMPOW
Making Problem-Based Learning Work for You

10–12 Session

Issues of time, application, grading, and implementation often hold teachers back from using problem based learning in their classroom. Through this session, I will show effective strategies and real examples of effective implementation of problem-based learning strategies and assessments that can be implemented immediately in your classroom.

Hannah Oldham
Cobb County Schools, Marietta, Georgia

Orange County Convention Center, W103

Introducing

A new K–5 intervention program

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Bridges Intervention provides targeted instruction and support, addressing Tier 2 within the RTI framework. Each volume contains activities, games, and practice pages that can be used for re-teaching key numeracy skills and concepts. Placement and progress monitoring assessments are included.

Join our session about Bridges Intervention on Friday, October 20th at 11:00 in room W304EF or stop by booth 419 to learn more.

mathlearningcenter.org/**intervention**

3:00 P.M.–4:00 P.M.

246 TEACH
Smart Charts and Great Graphs: Helping Students Collect, Analyze, and Share Quantitative Information

3–5 Session

Welcome to the exciting world of infographics. Visual displays are an ever-increasing means of providing and receiving quantitative information, data that is key to our comprehension of complex topics. We will explore strategies for helping students to communicate their own data and to better understand the displays encountered in life.

Stuart Murphy
Independent Author, Charlestown, Massachusetts

Orange County Convention Center, W312

247 MATC
The DIY Math Curriculum: Simple Tricks to Make Creating Your Own Material Feel Less Onerous

Session

Don't like the way the textbook approaches a concept but are intimidated by creating your own content? Bowman and Sam both write their own content from scratch. We'll share the simple lesson-design tricks we use to write investigations that lead to vibrant discussions and a-ha moments. You will leave ready and excited to write your own content!

Sameer Shah
@samjshah
Packer Collegiate Institute, Brooklyn, New York
Bowman Dickson
St. Andrew's School, Middletown, Delaware

Orange County Convention Center, W204

248 FL
Transforming the Teaching of Mathematics

General Interest Session

The presenter will share six transformative practices for teaching mathematics: 1. Understand the learning goal; 2. Select good tasks; 3. Prompt student discourse; 4. Ask probing questions; 5. Allow space for alternative pathways and thinking; 6. Address students' errors and misconceptions.

Thomasenia Adams
University of Florida, Gainesville

Orange County Convention Center, W109

3:15 P.M.–4:30 P.M.

249 COLLAB
Agency, Authority, & Mathematics: Empowering K–5 Teachers

Coaches/Leaders/Teacher Educators Workshop

How can we build agency and authority in K–grade 5 teachers? During this session, participants will experience tasks and structures used to build agency and authority in K–5 teachers through a special program called IMPACTS. Results from the program will then be shared, and we will discuss lessons learned.

M. Melissa Hosten
@homsten_m
University of Arizona, Tucson

Orange County Convention Center, W311 D

250 TEACH
Building Discourse to Foster Equity and Rigor in Mathematics

6–8 Workshop

This session will engage participants in activities that foster equity and rigor in mathematics in a collaborative language-rich environment. We will engage in meaningful, high-cognitive demand, mathematical thinking, and academic discourse.

Diane Kinch
TODOS: Mathematics for ALL, Claremont, California

Orange County Convention Center, W203

3:15 P.M.–4:30 P.M.

251 TEACH
Composing and Decomposing: What's the Big Deal?

Pre-K–2 Workshop

Building initial ideas of place value and properties of operations begins in K–2. What does it really mean for students to engage in composing and decomposing number? Why does it matter? What deeper understanding does it lead to later? Come engage with activities, games, and problem solving that supports K–2 development of these essential ideas.

Patricia Goodman
Little Rock School District, Arkansas
Kim Romain
Little Rock School District, Arkansas

Orange County Convention Center, W311 EF

252 TEACH
Developing Algebraic Thinking and Problem Solving without the "X's"

Pre-K–2 Workshop

Strategies to develop algebraic thinking, including use of the equal sign, other representations, patterns, and solving for unknowns will be the focus for this hands-on workshop. Attendees will be actively engaged with manipulatives, effective questioning strategies, and the exploration of real-life problems that promote algebraic thinking.

Donna Knoell
Consultant, Shawnee Mission, Kansas

Orange County Convention Center, W307 CD

253 TEACH
Don't Drag Us Down! Falling Coffee Filter Activity

10–12 Workshop

Participants will analyze experimental terminal velocity data using logarithms, linearization, and graphing to determine an appropriate math model for drag assuming it obeys a power law. Teachers can motivate students to model natural phenomena using math. Funded by THEC ITQ grant, "Let's Get Physical! Teaching Math through the Lens of Physics."

Peggy Bertrand
University of Tennessee, Knoxville
Lauren Jeneva Clark
University of Tennessee, Knoxville

Orange County Convention Center, W311 GH

254 TEACH
Inspiring Growth Mindset in Middle School Students through High-Quality Measurement Tasks

6–8 Workshop

During this engaging hands-on session, participants will experience measurement tasks to inspire growth mindset among middle school learners. Area, volume, and surface area will provide our content framework. Discussion among colleagues will also focus on attributes of high-quality tasks and their potential impact on the development of mindset.

Martha Parrott
Northeastern State University, Broken Arrow, Oklahoma

Orange County Convention Center, W305

255 TEACH
Invert & Multiply? Why?

3–5 Workshop

Explore the big ideas of dividing fractions in this hands-on session. We'll use a variety of tools and representations to visualize and understand what division means and why the answer is sometimes bigger than the numbers you started with. See how these models promote student discourse and sense making about this essential concept.

Sara Delano Moore
SDM Learning, Kent, Ohio

Orange County Convention Center, W105

256 TOOLS
Let's Call Them Tools, Not Toys: Algebra Tiles—Not Just for Factoring

6–8 Workshop

Experience algebra tiles in order to make abstract symbolic expressions transform into a concrete representation for students. Teachers will have a chance to explore algebra tiles and to learn how to use them to develop area and perimeter, combining like terms, evaluating expressions, writing equations, distributive property, and solving equations.

Sharon Rendon
@srendon2
CPM Educational Program, Summerset, South Dakota
Christine Mikles
Post Falls, Idaho

Orange County Convention Center, W309

3:15 P.M.–4:30 P.M.

257 FL
Making Sense of Mathematics through Modeling

8–10 Workshop

Modeling supports deep and coherent understanding of mathematics. Engage in experiences designed to enrich your knowledge of various math concepts. Explore components of authentic modeling tasks that demonstrate the relevance and scope of mathematics. Examine the mathematical modeling process and how it can be used to help students make sense of math.

Aline Abassian
University of Central Florida, Orlando
Farshid Safi
University of Central Florida, Orlando

Orange County Convention Center, W108

258 FL
Using Writing to Deepen Students' Proficiency with Mathematics Content and Practice Standards

3–5 Workshop

Through active problem solving and conversation, participants explore the essential components of planning for successful implementation of high-cognitive-demand tasks. Participants learn how writing can be a powerful tool for both increasing students' content knowledge and developing proficiency with the Standards for Mathematical Practice.

Melissa Carli
@MCarliLovesMath
Lake County Schools, Howey-in-the-Hills, Florida
Lindsay Messner
Lake County Schools, Howey-in-the-Hills, Florida

Orange County Convention Center, W104

259 TEACH
Warm-Up Routines: Developing Mindset While Enhancing Math Understanding

8–10 Workshop

Warm-ups can maximize class time, set a class culture, and develop growth mindset in students, and they can fill gaps in, or extend, student understanding. Participants will engage in a collection of high leverage warm-up routines, gain understanding of the research supporting warm-ups, and learn how to use them to grow their students and their teaching practice.

Lisa Bejarano
@lisabej_manitou
Aspen Valley High School, Colorado Springs, Colorado

Orange County Convention Center, W101

260 TEACH
Why Zentangles?

General Interest Workshop

Zentangles is an easy-to-learn, relaxing, and fun way to create beautiful images by drawing structured patterns. The process gives students the opportunity of experiencing independent success without being entangled with prerequisite skills. It is a tool for leading students into the structure of "learning." Participants will design individual Zentangle patterns.

Marita Eng
Retired, Jacksonville, Florida

Orange County Convention Center, W102

4:30 P.M.–5:30 P.M.

261 TEACH
Promoting Mathematical Connections Using 2-D and 3-D Manipulatives

8–10 Session

Principles to Actions encourages teachers to engage students in mathematical thinking, reasoning, and sense making. In this session, participants will explore strategies to connect algebraic and geometric ideas using multiple representations through the purposeful use of two- and three-dimensional manipulatives.

Siddhi Desai
The College of New Jersey, Ewing, New Jersey
Farshid Safi
University of Central Florida, Orlando

Orange County Convention Center, W303

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Matt Larson
President, NCTM

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NCTM Regional Conference & Exposition
October 18–20, 2017
Orlando, Florida

Name of Provider: National Council of Teachers of Mathematics

Educator's Name: _____

Description of Professional Development Activity: This is a three-day regional conference sponsored by the National Council of Teachers of Mathematics. More than 200 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 Name(s)	Start/End Time	PD Time Earned
TOTAL Professional Development Hours Accrued:					

I certify that the above-named educator accrued the indicated number of professional development hours.

Ken Krehbiel
Executive Director, NCTM

Matthew Larson
President, NCTM

Please check with your state education agency and local administration to determine whether these conference hours can be used for professional development credits.

NCTM Regional Conferences & Expositions 2018

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- Pre-K–Grade 12 classroom teachers
- Math coaches
- Administrators
- Math teacher educators
- Preservice teachers
- Math specialists

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NATIONAL COUNCIL OF TEACHERS OF MATHEMATICS

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A list of Partner Affiliates in this conference's region and the Affiliates-at-Large appears on page 79. To join one of these organizations, email the Affiliate contact for membership information. NCTM has more than 200 Affiliates throughout the United States and Canada. For a list of all organizations affiliated with NCTM and information on how to join, visit the Affiliate Directory at **nctm.org/Affiliates/Directory.**

About the Host Organization

The Florida Council of Teachers of Mathematics is a pre-K–16 mathematics education organization designed to promote the improvement of Florida's mathematics instructional programs, to promote cooperation and communication among the teachers of mathematics in Florida, and to provide direction and feedback to policy makers regarding mathematics issues and initiatives. We are an affiliate of the National Council of Teachers of Mathematics and are proud to represent all of the mathematics educators in the State of Florida.

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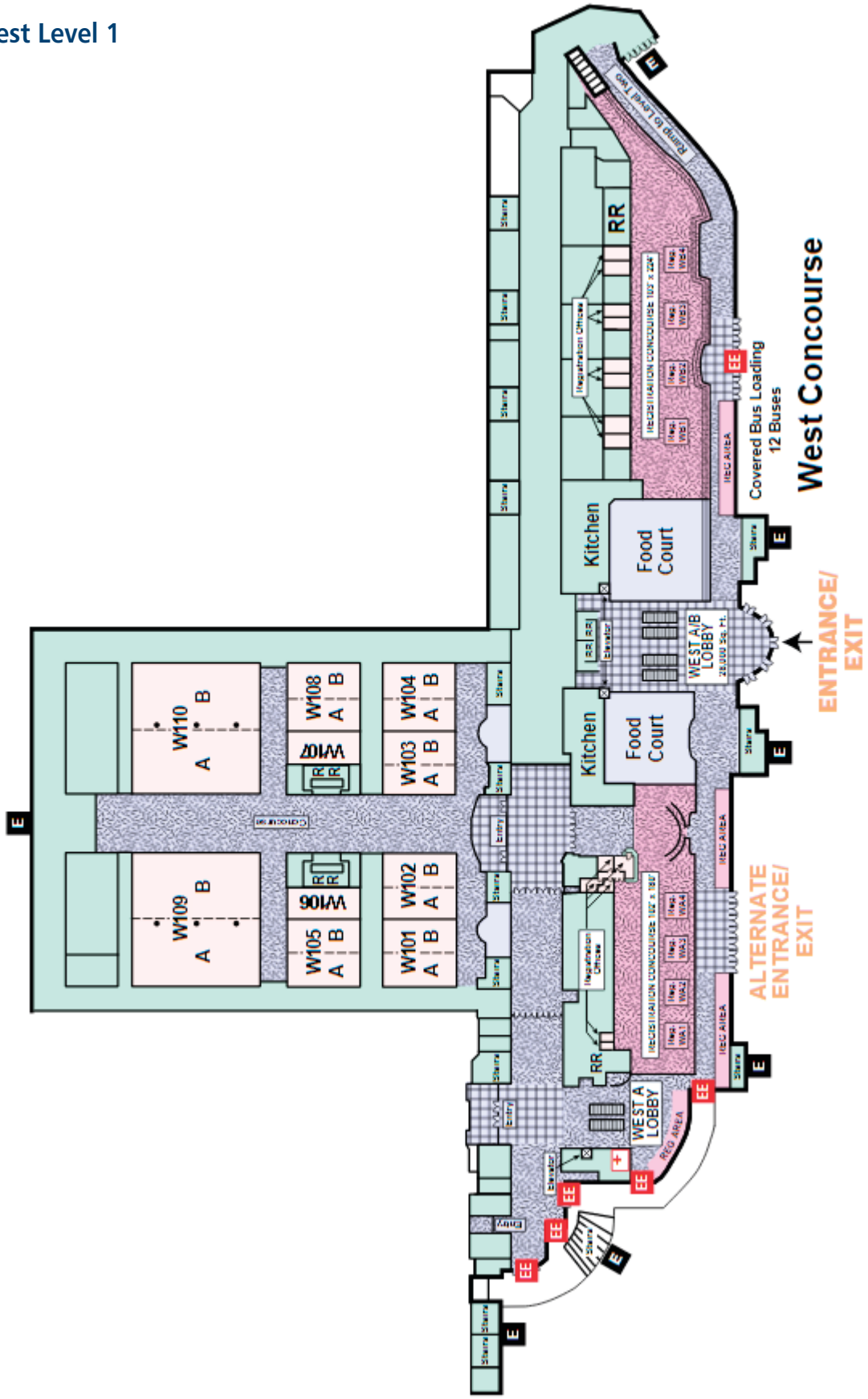

Floor Plans

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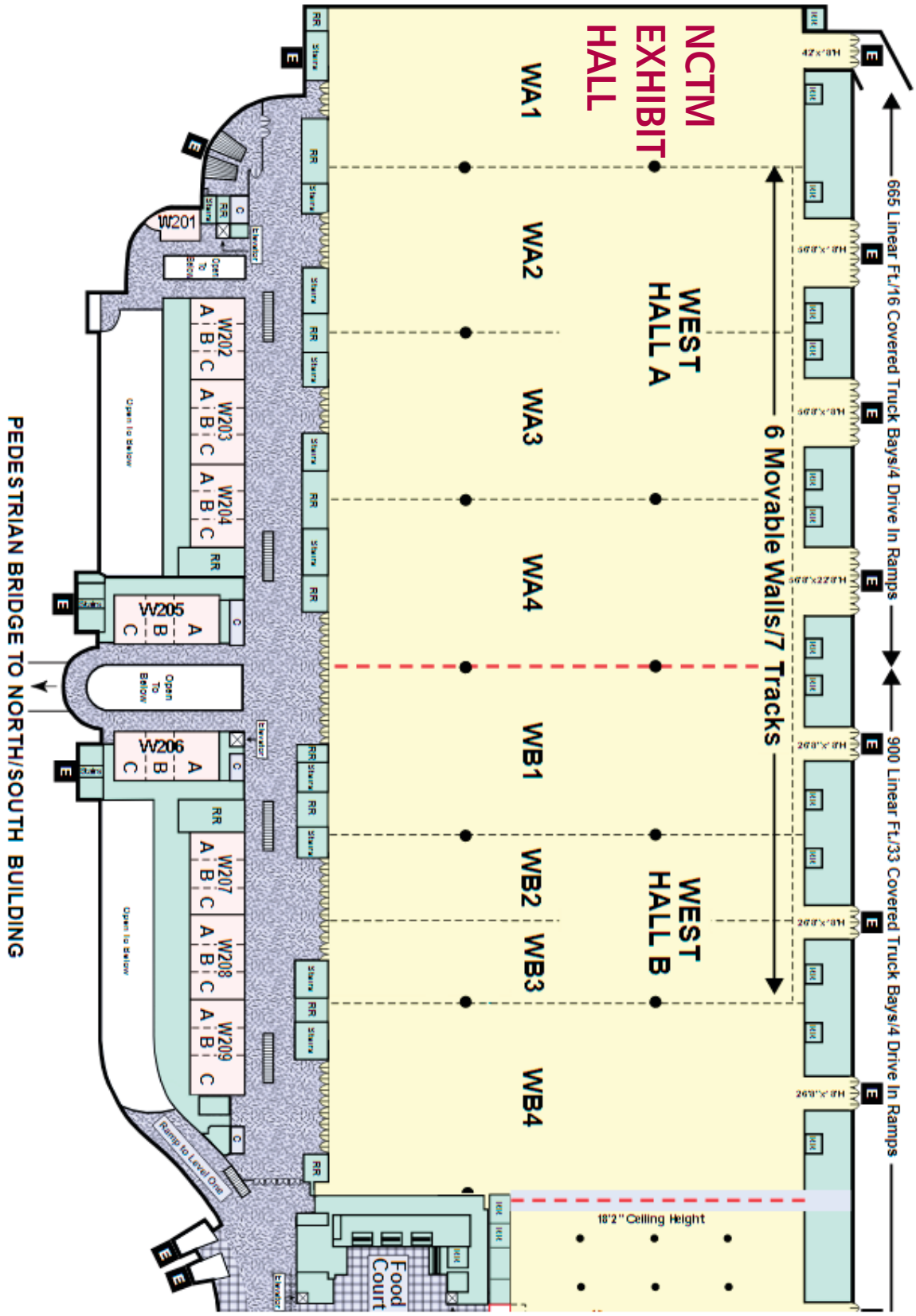

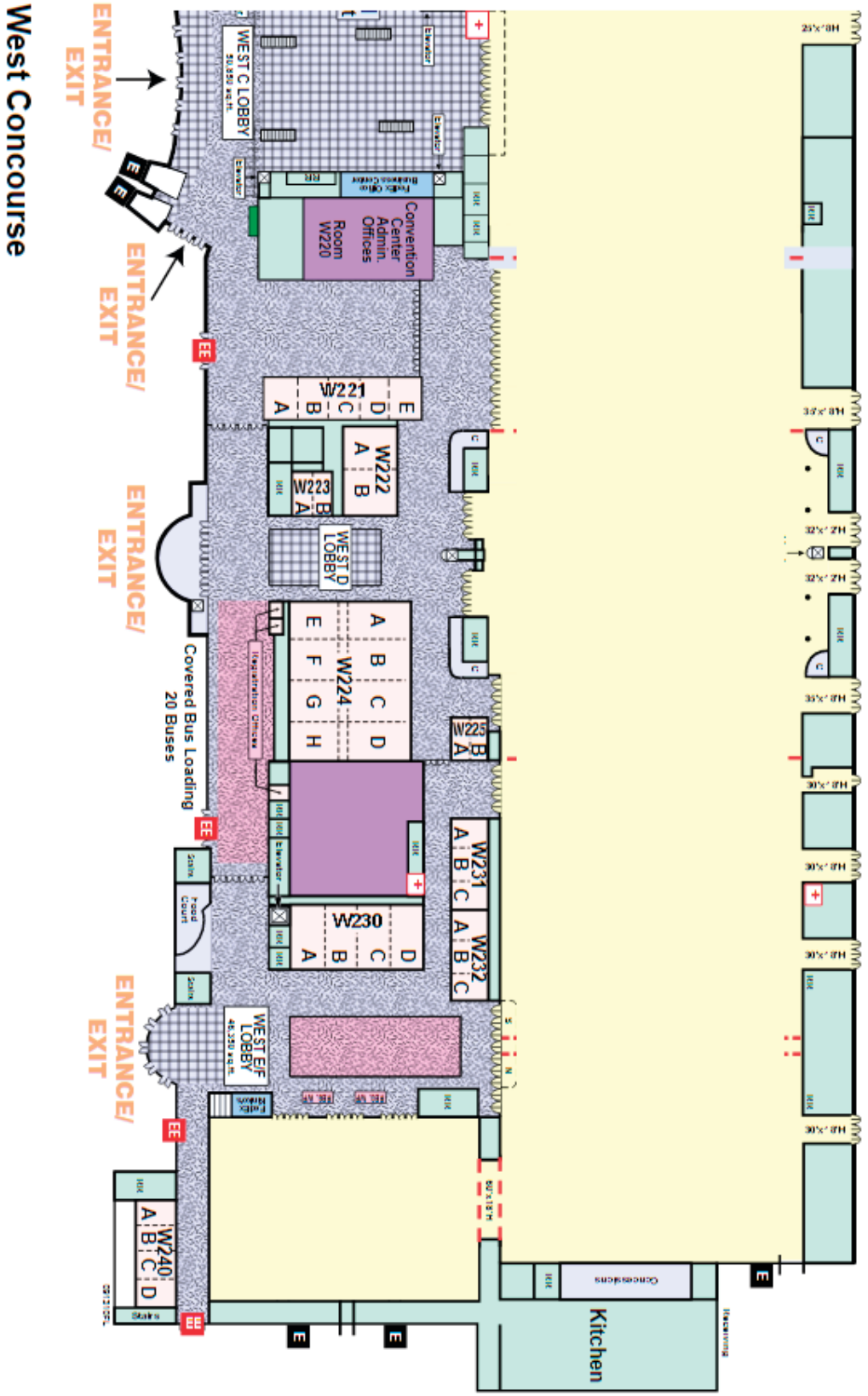
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WEST C LOBBY
Convention Center Admin. Offices
Room W220
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Covered Bus Loading 20 Buses
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W231
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WEST E/F LOBBY
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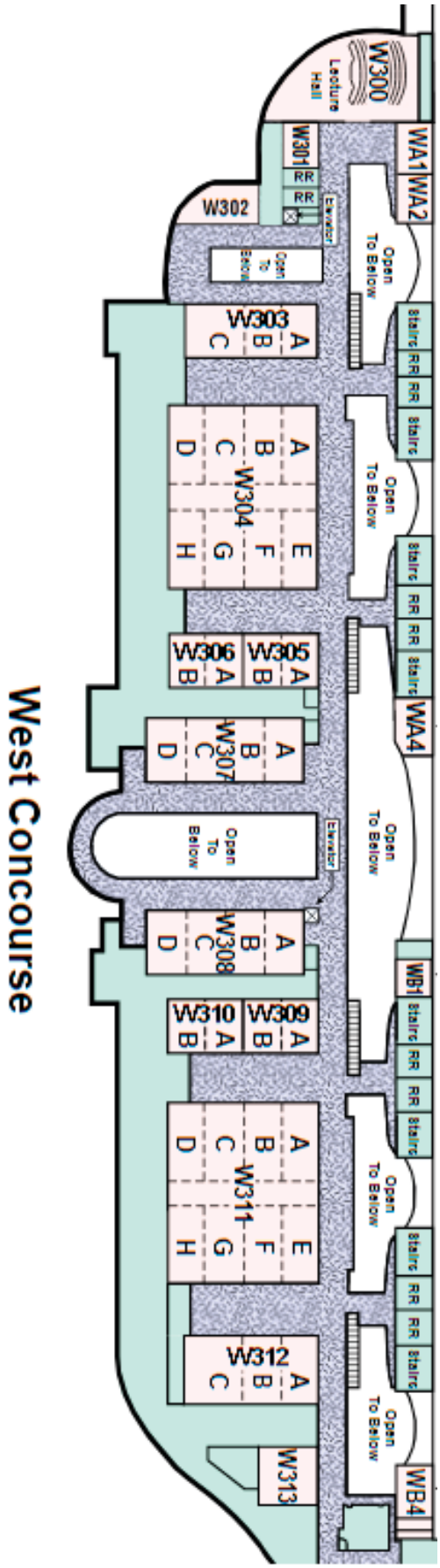
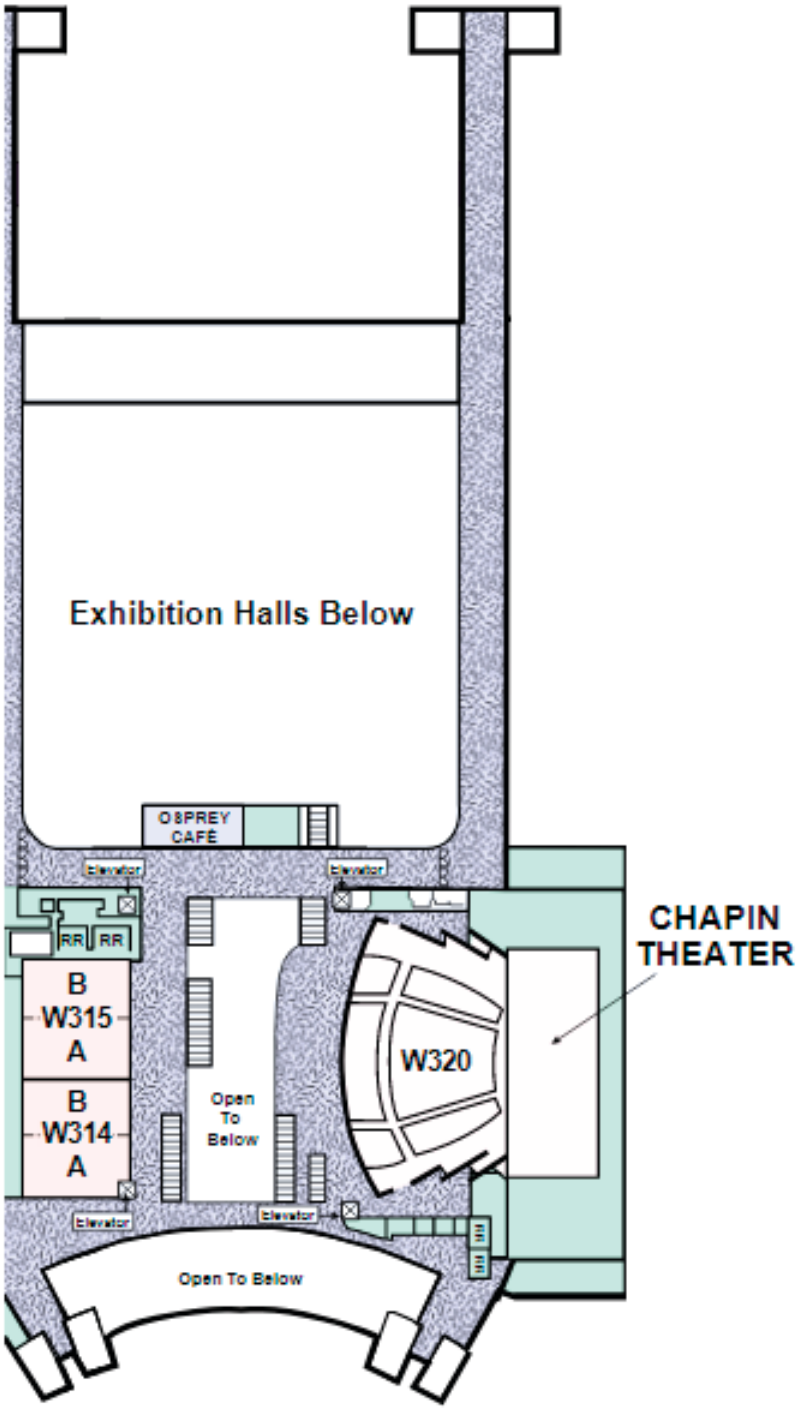
Kitchen

Floor Plans

Orlando West Level 3

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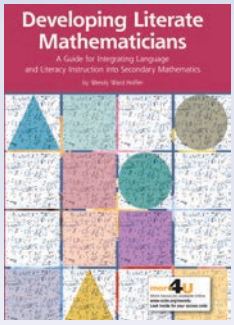

BY WENDY WARD HOFFER

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

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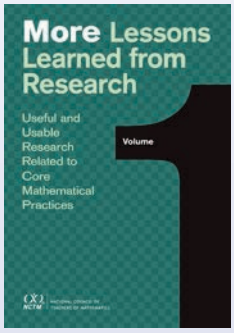

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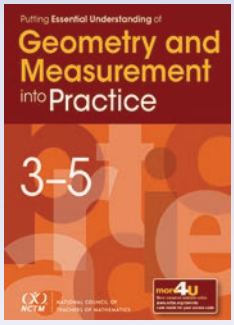

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KATHRYN CHVAL, VOLUME EDITOR

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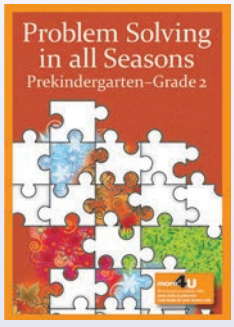

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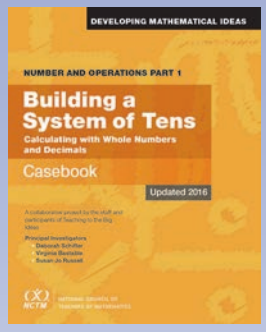

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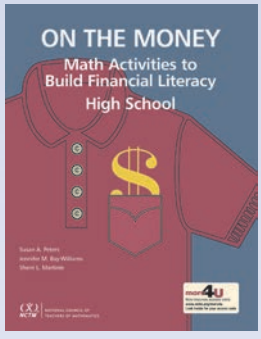

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8:00 AM - 9:15 AM	Just Give me the Facts - But with Understanding Rather than Gimmicks! Room: W307 CD Speaker: James Burnett
9:30 AM - 10:30 AM	Beginning Processes: A New Perspective on Early Mathematics Room: W202 Speaker: Jessica Bobo
11:30 AM - 12:00 PM	Fractions: From Misunderstanding to Deep Understanding Room: W307 CD Speaker: Debi DePaul
4:30 PM - 5:30 PM	More or Less: Developing the Concepts of Comparison Room: W300 Speaker: Debi DePaul
5:00 PM - 5:30 PM	Turn Struggles into Gains by Considering Misconceptions of Young Learners Room: W105 Speaker: Jessica Bobo

Friday 10/20

8:00 AM - 9:15 AM	A Clear Vision for Utilizing Number Lines Room: W105 Speaker: Debi DePaul
1:30 PM - 2:45 PM	To Proficiency and Beyond: A Strategic Approach to Multiplication and Division Room: W311 D Speaker: Gretchen Presley

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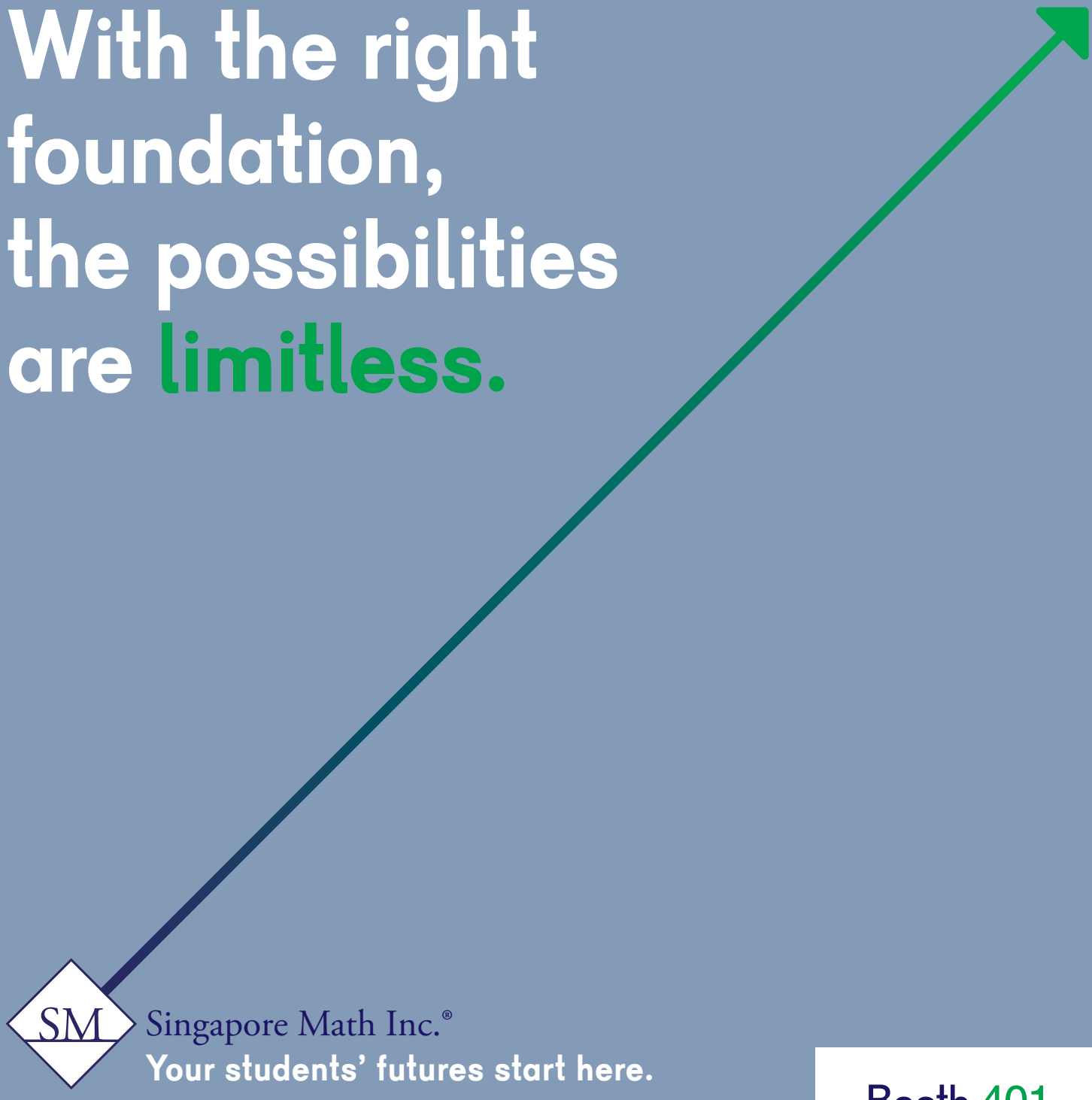

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Booth 401

Singapore Math® Workshop: "Nudging Students from the Concrete to the Abstract Stage" presented by Tricia Salerno of SMARTTraining Now, LLC
Friday, October 20 at 1:30 p.m.