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WELCOME FROM THE PRESIDENT of NCCTM

Welcome to the 48th Annual State Mathematics Conference of the North Carolina Council of Teachers of Mathematics! Whether this is your first time attending the conference, the 48th time, or some number of times between the two, I hope that this will be a great opportunity for you to learn, reflect, collaborate, and enjoy as you participate in the premier North Carolina mathematics education professional development event. Our theme, "**Cultivating Coherence and Connections**" is of great importance at a time of change in the teaching and learning of mathematics. I am often asked what this means! According to the Common Core State Standards Initiative (2017): "Mathematics is not a list of disconnected topics, tricks, or mnemonics; it is a **coherent** body of knowledge made up of interconnected concepts. Therefore, the standards are designed around **coherent** progressions from grade to grade. Learning is carefully **connected** across grades so that students can build new understanding onto foundations built in previous years. Each standard is not a new event, but an extension of previous learning. **Coherence** is also built into the standards in how they reinforce a major topic in a grade by utilizing supporting, complementary topics." I believe that this is especially true of the NC State Standards and hope that your participation in this year's conference includes meaningful and relevant information regarding coherence and connections.

Although our primary goal is to provide you with **quality** experiences at the conference, we also have a large **quantity** of these quality events. By the numbers, we have eleven sessions by keynote and featured speakers, 33 ninety-minute sessions, 115 ninety-minute workshops, and 213 forty-five-minute sessions, making a total of 372 sessions!

Here are five items to note: (1) There are many keynote and featured speakers this year and we hope you take advantage of these special sessions. (2) We are continuing to offer workshops with no tickets. The seating in workshops will still be limited to 40, but the seats go to the first 40 participants at the workshop. (3) We are using the conference app, Grupio, again this year. Please use Grupio and get up-to-date information on the conference and help us get the word out on unavoidable last-minute changes. (4) We have space in the Exhibit Hall for participants to gather and learn about opportunities for NCCTM members to Blog and Tweet! And (5) We have a new feature in the Exhibit Hall as well – please stop by at the top of each hour for sessions on hot topics, Q&A's with curriculum resource writers for NC2ML and Tools4Teachers and opportunities to meet and chat with NCDPI's math and testing departments.

Make plans to join us for the NCCTM Awards Celebration on Thursday, November 1 from 4:00 to 6:00 pm in Guilford C. Light refreshments will be provided by NCCTM, but you will primarily want to be there to celebrate with Outstanding Secondary Teachers from across the state, Outstanding Pre-service Teachers, and those who receive the Innovator Award and Rankin Award. There will also be recognition of contest winners. In addition to the refreshments, we will also have door prizes!

I want to thank all of the NCCTM members who volunteered their time, energy, and effort to make this conference a success! Special thanks goes to Drew Poly, Jenna Regan and Isaac Wells (program chairs); Stefanie Buckner, Holly Pinter, and Vicki Overton (conference chairs); Lauren Baucom (Groupio and MTBoS); Karen McPherson (program booklet cover art); Marilyn Preddy (convention services); Joette Midgette and Kay Swofford (management services); Denise Johnson (program booklet); the Koury Convention Center Staff; all of the conference committee chairs and members; and all of the volunteers who work before and during the conference. Thanks also to the NCCTM Board of Directors for their work and participation all year long that makes NCCTM and this conference successful. A special thank you goes to all of the speakers who volunteer to provide the professional development for the conference.

Perhaps the biggest thank you goes to all of you for attending the conference this year! I hope you will attend again next year. Bring a friend! Mark your calendar for the Spring Leadership Seminar at the Radisson in High Point on Friday, 23 March 2019. Lee Stiff is the featured speaker for this seminar.

Finally, please allow me to use my position as president to provide some advice for maximizing your experience at the conference:

1. Plan ahead for sessions and workshops, but know that if you think a session sounds awesome, there are likely others with the same idea. Therefore, if it fills, please be prepared to go to another session.
2. There are some fantastic national keynote and state featured speakers at the conference. Go to the session for your grade band and see for yourself why we invited them to be here.
3. The backbone of this great conference is our classroom teachers who present from the wealth of her/his experience in helping our students reason mathematically. Please take advantage of sessions and workshops that explain what works for NC students.
4. Exhibitors have a lot to offer and you will want to budget some time for these displays. Get to know key people who can assist you in your professional efforts.

Julie Kolb
President, NCCTM

CONFERENCE HIGHLIGHTS

Materials Marketplace

Thursday, November 1	2:30pm-4:00pm
Friday, November 2	11:00am-12:00pm
Heritage A/B	

Pre-service teachers and classroom teachers with less than three years of experience may purchase current materials at bargain prices.

Student Math Fair Projects

Thursday, November 1	8:00am-4:30pm
Friday, November 2	8:00am-1:30pm
Exhibit Area	Guilford Ballroom DEFG

NCCTM sponsors three regional Math Fairs each spring, followed by the State Math Fair. Come view the work of some of the top students K-12.

NCCTM T-Shirt Sale

Thursday, November 2	8:30-4:00
Friday, November 3	8:30-1:30

Show your NCCTM spirit and purchase an NCCTM t-shirt that has features the winning logo from the annual Logo Contest. Submissions come from students K-12.

NCCTM Is Moving to Twitter!

We are tweeting about events, deadlines, and letting you know about keynote speakers for the conference! Be sure to follow @NCCTM1 to stay up to date on all things NCCTM! Use hashtag #ncctm18 to connect with others and communicate about your big takeaways while at the conference!

NCCTM Awards Celebration

Thursday, November 1	Guilford C
Reception	4:00pm-4:30pm
Ceremony	4:30pm-6:00pm

We will recognize outstanding math teachers and students. Light refreshments will be provided, beginning at 4:00, followed by the ceremony at 4:30. Following are some of the recognitions:

Outstanding Secondary Mathematics Teachers
(Presented by NCDPI Mathematics Section)

Presidential Awards Winners and Finalists
(Presented by Joseph Reaper, NCDPI)

Outstanding Mathematics Education Students
(Presented by Rose Sinicrope)

Outstanding Coach/Sponsor Award and ARML Award
(Presented by Philip Rash)

American Mathematics Competitions Awards
(Presented by Harold Reiter and Randy Harter)

Innovator Award
(Presented by Rose Sinicrope)

W. W. Rankin Award
(Presented by Lee Stiff)

The last event at the Awards Celebration is a door prize give-away as exhibitors donate dozens of wonderful prizes. Must be present to win.

Access the Online Program on SCHED!

Access the digital up-to-date program online at
https://ncctm2018.sched.com/
or download **Sched** in your app store and search for "NCCTM"

GENERAL INFORMATION

Lost Materials

If you lose or misplace your pre-registration packet including your name badge and/or receipt, please proceed to the Registration Assistance booth designated for lost materials. The Registration Desk will maintain a message/bulletin board and serve as a clearinghouse for lost and found items.

Commercial Exhibits

Commercial exhibits feature the most current mathematics education products, publications, software and services. These exhibits are located on the main floor of the Koury Convention Center in the Guilford Ballroom. Entry is through the main lobby area. Name badges must be shown for admission into the exhibit hall. Exhibits will be open to all registered conference participants at these times:

Thursday, November 2, 8:00am- 4:30pm

Friday, November 3, 8:00am-2:00pm

Please refer to page 47 for a complete list of all exhibitors, booth assignments and a diagram of the exhibit hall.

Emergencies

In case of an emergency, call the Sheraton Greensboro Hotel at Four Seasons, (336) 292-9161. Messages for persons staying at the hotel may be recorded on voicemail. The conference headquarters staff may be reached in an emergency at (706) 424-1350.

Information Kiosk

Located in the Registration Area, you can obtain general registration information and pick up forms for on-site registration.

Name Badges

Conference name badges are required for admission to all sessions, workshops, and exhibits of the conference. **Admission will be denied if the badge is not worn.** Free name badge holders are available at the Information Kiosk.

Workshop Tickets

No tickets are required for workshops; however, there is a limit of 40 participants per workshop.

Meeting Room Maps

A map of the meeting rooms is located on the back cover of this program book.

Copyrighted Materials

NCCTM will not allow the use of copy- righted materials in sessions or workshops unless prior permission to use these materials is obtained. References to products by speakers are not to be considered endorsements by NCCTM.

NCCTM Is Moving to Twitter!

We are now tweeting information about events, deadlines, and letting you know about keynote speakers for the conference! Be sure to follow @NCCTM1 to stay up to date on all things NCCTM!

Use the hashtag #ncctm17 to connect with others and communicate about your big takeaways while at the conference!

Conference Committee Chairs

Conference Chairs	Holly Pinter, Stefanie Buckner & Vicki Overton
Program Chairs	Drew Polly, Jenna Regan & Issac Wells
Program Booklet	Denise Johnson & Tony Nyugen
Commercial Exhibits	Becky Caison & Kay Swofford
Publicity	Stefanie Buckner
Math Celebrations	Anthony Finlen
Conference Apps	Lauren Baucom
MTBoS	Lauren Baucom
Marketplace	Shana Runge
Conference Services	Marilyn Preddy
Student Fair Exhibits	Betty Long
Registration	Joette Midgett
Management Services	Joette Midgette

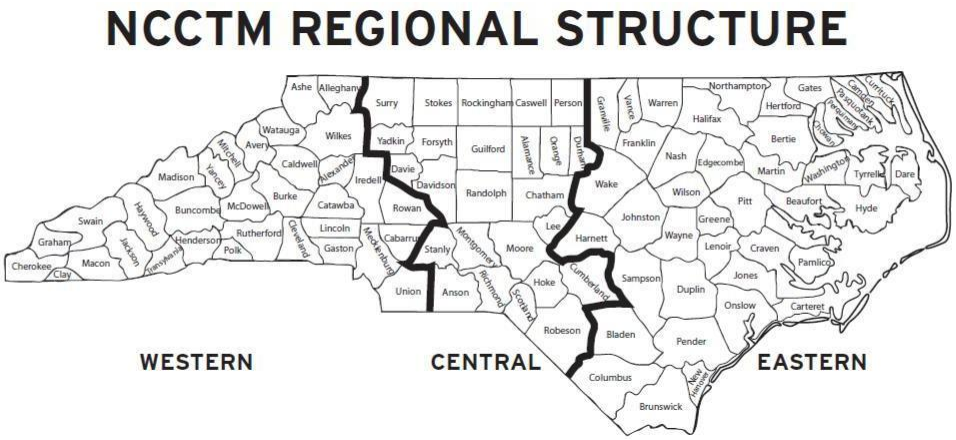
JOINING NCCTM

The North Carolina Council of Teachers of Mathematics (NCCTM) is the professional organization in North Carolina of all persons responsible for the teaching of mathematics. Its membership includes teachers from all levels, kindergarten through graduate school, and other professionals who work with curriculum and materials for the teaching of mathematics. You'll find out more about NCCTM through the website (www.ncctm.org) including some of its programs like state and regional conferences, publications, grants and awards, and other professional activities. Membership is open to all persons who have a professional interest in mathematics education.

The state is divided into three regions. Each region has its own programs, in addition to those of the state organization. Elected officers determine program and policy.

State Officers

President—Julie Kolb
President Elect – Kathy Jaqua
Elementary VP— Jade Evaul
Middle Grades VP—Dawn Jenkins
Secondary VP—Michelle Powell
Colleges VP—Katie Mawhinney
Secretary—Christina Pennington



Membership Fees

(Membership year is July 1 - June 30)

$30/one year $75/three years $120/five years $0 for full-time students

Western Region Officers

President—Karen McPherson
President Elect—Sheila Brookshire
Elementary VP—Brian Bettis
Middle Grades VP—Jessica Vernon
Secondary VP—Lauren Baucom
Colleges VP—Holly Pinter

Central Region Officers

President—Julie Riggins
President Elect – Denise Johnson
Elementary VP—Deanna Wiles
Middle Grades VP—Sara Vaughn
Secondary VP—Allison Yokely
Colleges VP—Tracey Howell

Eastern Region Officers

President—Tim Hendrix
President Elect – Ginger Rhodes
Elementary VP—Leah Southerland
Middle Grades VP—Kim McCuiston
Secondary VP – Renae Baker
Colleges VP—Charity Cayton

Spring Regional Conferences

Western Region

Saturday, March 16, 2019
9:00 AM – 12:00 Noon
Owen HS Black Mountain, NC
For more information, contact:
Karen McPherson
karen.mcpherson@bcsemail.org

Central Region

For more information, contact:
Julie Riggins
jriggins@wsfcs.k12.nc.us

Eastern Region

For more information, contact:
Tim Hendrix
hendrixt@meredith.edu

KEYNOTE SPEAKERS

Sue O'Connell

Biography: Sue O'Connell has years of experience as an elementary classroom teacher, math coach, district school improvement specialist, and math speaker/consultant. She is the lead author for Heinemann's *Math in Practice* series and is the author of such titles as *Putting the Practices Into Action* and *Mastering the Basic Math Facts.* She has written numerous other books that support the teaching of K-5 mathematics and is particularly focused on instructional practices that support the development of mathematical thinking. She is a frequent speaker at math conferences and is Director of *Quality Teacher Development,* providing on-site professional development for schools and school districts across the country.

Math Facts 2.0: Moving Beyond Memorization to Connect Fluency to Understanding (Grades 3-5)

Friday, November 2 **8:30 – 9:45** **Imperial D**
Susan O'Connell

Session: Mastery of multiplication and division facts is not about fluency alone. Related standards challenge our students to understand operations, interpret equations, apply properties, understand inverses, and prove equality. Discover simple tasks and investigations that blend these skills into your math facts instruction to deepen students' understanding and move them toward fact fluency. Gather a wealth of teaching strategies and fun classroom tasks that support both fact fluency and conceptual understanding.

Making Sense of Numbers Through Models, Discussion, and Discovery (Grades K-2)

Friday, November 2 **12:30 – 2:00** **Imperial D**
Susan O'Connell

Session: Do your students understand how numbers work? Do they have a deep understanding of place value and properties? Join us to explore simple classroom investigations that focus on big ideas about numbers. Help your students make sense of important number concepts through literature connections, models, investigations, and lots of math talk! Walk away from this session with a wealth of teaching strategies and engaging tasks to enliven your math classroom and help your students arrive at a deeper understanding of numbers.

KEYNOTE SPEAKERS

Sandra M. Linder

Biography: Sandra M. Linder is an Associate Professor of Early Childhood Mathematics Education in the College of Education at Clemson University. She is also the Director of the South Carolina Center of Excellence in Innovation for Mathematics and Science, housed at Clemson University. Her research centers on improving teacher quality, student understandings, and family interactions in mathematics for young children (birth to age 8). Dr. Linder has multiple national and international publications relating to early childhood mathematics in the areas of student motivation; preservice and inservice teacher quality (child care and K-5); teacher dispositions, knowledge, and the role of professional development; and understanding and supporting family mathematical interactions. She is a section editor for two NAEYC journals, Young Children (Growing in STEM) and Teaching Young Children (Full STEAM Ahead).

As a classroom teacher, Dr. Linder worked primarily in K-5 settings in New Jersey before pursuing her PhD work. For the past 13 years, Dr. Linder has worked with inservice teachers across the United States at all early childhood levels to support instructional practice in mathematics. Currently, Dr. Linder is directing Project MathPack, a family-based intervention geared towards providing tasks and materials that increase mathematical interactions through play with families of preschool aged children. Dr. Linder also directs Project BEEMS, an ongoing professional development initiative geared towards supporting child care providers in implementing effective instructional practices in early mathematics. Most importantly, Dr. Linder has three children, Bella (age 7), AJ (age 6), and Clara (age 5) and is immersed in early childhood 24 hours a day! three

PreK-5- STEM, STEAM, STREAM. So Many Acronyms- Which One is For You?

Friday, November 2 **8:30 – 9:45** **Auditorium II**
Sandra M. Liner

Session: This session focuses on distinguishing between educational terms that are commonly used (and sometimes used incorrectly) in PreK-5th grade. What does this project approach look like? How is it different from a problem-based approach? How can we use these approaches to integrate STEM or STEAM in PreK-5th grade classrooms? Participants will examine the differences between these terms and engage in tasks that will show how to integrate these practices effectively in classroom settings.

PreK-2- Supporting Mathematics Interactions in Home Environments, Strategies for Connecting with Families

Friday, November 2 **11:30 – 12:45** **Auditorium I**
Sandra M. Liner

Session: This session presents findings from a home-based intervention designed to increase and support mathematical play between parents and preschool/prekindergarten aged children. The intervention, Project MathPack, provided take home packs grounded in play and the mathematical processes for families to engage in mathematical play at home. Participants will learn how to implement strategies for increasing mathematical play through these MathPacks and how to support children by building bridges between classroom and home environments.

KEYNOTE SPEAKERS

Kathy Richardson

Biography: Kathy Richardson, co-founder and Program Director for the Math Perspectives Teacher Development Center, is recognized as one of the nation's most respected early childhood educators.

Kathy has spent over forty years working with classroom teachers and elementary students, writing books and developing teacher resource materials.

In 2002 and 2003, Kathy developed the Assessing Math Concepts series of formative assessments for grades K-3 mathematics. In 2006, a group project was launched by Kathy, Math Perspectives, and Didax to offer the Assessing Math Concepts series in a web-based platform for teachers. The series is a continuum of math assessments that focus on important core concepts and related "Critical Learning Phases" that must be in place if children are to understand and be successful in mathematics.

She is the author of over twenty books and is the co-author of *Number Talks in the Primary Classroom* with Sue Dolphin to be released later this year. In addition to writing, Kathy continues to speak at conferences, work with teacher-leaders and study how children learn number concepts.

Using Assessments to Drive Our Instruction

Friday, November 2 **8:30a – 9:45a** **Grandover**

Kathy Richardson, Math Perspectives

Session: We often use assessments to find out if students can get right answers. But what we need to know is what mathematical concepts students understand and what they still need to learn. We can then use the assessment data to provide the most effective instruction that meets the needs of all students and provides the foundation for future success.

KEYNOTE SPEAKERS

Julie McNamara

Biography: Julie McNamara is an Assistant Professor of K-12 Mathematics Education at CSU East Bay. Before joining the Teacher Education Department at CSU East Bay, Julie supported mathematics teachers as a designer and provider of mathematics professional development for TeachingWorks, Math Solutions, and as an independent consultant. Julie is a former public school teacher in the San Francisco Bay Area. Her graduate studies were in the Development in Mathematics and Science program at the University of California, Berkeley, where she earned a master's degree and Ph.D. in mathematics education. Her research focuses on the teaching and learning of mathematics concepts that are foundational but considered "hard to teach and hard to learn." Julie is also the author of *Beyond Invert and Multiply: Making Sense of Fraction Computation, Grades 3-6* as well as the co-author of *Beyond Pizzas and Pies: 10 Essential Strategies for Supporting Fraction Sense, Grades 3-5*. She is currently working on two additional books, *Beyond X's and Y's: Making Sense of Algebra* (working title) and *Beyond Pieces and Parts: Developing Foundational Understandings of Fractions, Grades 1-3* (working title). Julie enjoys working with teachers but takes advantage of opportunities to work in K-12 classrooms whenever possible.

Why Do Rational Numbers Make Me Feel So Irrational? (Grades 3-8)

Thursday, November 1 **1:30 – 2:45** **Guilford C**

Julie McNamara, CSU East Bay

Session: Why does 0.2 x 0.2 = 0.04? And why do we "keep, change, flip" (or is it "change, keep, flip" or "flip, and you can keep the change") to divide fractions? We'll explore common challenges as well as strategies for helping students work with rational numbers with understanding and success.

KEYNOTE SPEAKERS

Graham Fletcher

Biography: Graham Fletcher has served in education as a classroom teacher, math instructional lead, and currently as a math specialist. Graham's work with the math progressions and problem-based lessons has led him to present throughout North America and beyond. He is continually advocating for best practice in elementary mathematics by seeking new and innovative ways to support students and teachers in their development of conceptual understanding.

The Power of Progressions: Untangling the Knotty Areas of Teaching and Learning Mathematics

Thursday, November 1 **8:30 – 9:45** **Grandover**
Graham Fletcher

Session: As more teachers look to add high-yield tasks to their repertoire, the struggle to make it all work becomes real. Let's examine how problem-based lessons can be used throughout the scope of a unit and how we can harness their power to move student thinking forward. We'll identify strategies and explore some tasks that help us find a healthy balance between application, conceptual understanding, and procedural fluency.

Understanding Number Sense Progression to Build Automaticity

Thursday, November 1 **12:30 – 1:15** **Imperial D**
Graham Fletcher

Session: Finding a balance between conceptual understanding and automaticity can be difficult, especially in the primary grades. In this session, we'll build our understanding of the number sense trajectory and explore how it can be used to build automaticity and fluency in our students.

KEYNOTE SPEAKERS

Pamela Weber Harris

Biography: Pamela Weber Harris is the author of several books, including Building Powerful Numeracy, Algebra Problem Strings, Discovering Advanced Algebra, and a book for professional development leaders. A former secondary mathematics teacher, Pam currently teaches at Texas State University, is a K-12 mathematics education consultant, a T^3 (Teachers Teaching with Technology) Instructor, and an author and coauthor of several professional development workshops. Pam presents frequently at conferences. Her particular interests include teaching real math, building powerful numeracy, sequencing rich tasks to construct mathematics, using technology appropriately, smart assessment, and vertical connectivity in curricula in schools PK-12.

Problem Strings: A Lesson Format for All Students (Grade bands: K-12)

Thursday, November 1 8:30 Imperial D

Session: A problem string is a powerful instructional routine where all students learn, have access to the problems, and are challenged. The success hinges on the teacher's purposeful question order, class discussion, and modeling student strategies to build connections. Come experience a variety of problem strings that promote everything from numeracy and proportions to functions and learn to facilitate problem strings in your classroom.

KEYNOTE SPEAKERS

Steve Leinwand

Biography: Steve Leinwand is a principal research analyst at AIR and has over 40 years of leadership positions in mathematics education. He currently serves as mathematics expert on a wide range of AIR projects that focus on high quality mathematics instruction, turning around underperforming schools, improving adult education, evaluating programs, developing assessments and providing technical assistance.

Before joining AIR in 2002, Leinwand spent 22 years as Mathematics Consultant with the Connecticut Department of Education where he was responsible for the development and oversight of a broad statewide program of activities in K-12 mathematics education including the provision of technical assistance and professional development, the evaluation of Title 1 and K-12 mathematics programs, the assessment of student achievement and teacher competency, and the coordination of statewide mathematics programs and activities. Steve has also served on the NCTM Board of Directors and has been President of the National Council of Supervisors of Mathematics. Steve is also an author of several mathematics textbooks and has written numerous articles.

Great Tasks + the Right Questions = Classroom Magic in the Form of +/- 8 Slide Lesson Guides

Thursday, November 1 **Time: 11:30am** **Room: Guilford C**
Steve Leinwand

Session: Many of us struggle to craft and implement powerful and effective mathematics lessons that live up to the high expectations of NCTM's 8 Mathematics Teaching Practices found in Principles to Actions. Our job is even more difficult in a world with such an array of great on-line resources. This talk will explore and model a development process and present a set of +/- 8 slide lesson guides that have emerged from this process and that support the planning and implementation of great lessons.

Building the Practice of Gradual Reveal into our Instruction to Increase Motivation and Engagement.

Thursday, November 1 **Time: 3:30pm – 4:15pm** **Room: Imperial D** **Grades: 6-12**
Steve Leinwand

Teachers have known for years the power of gradual reveal when teaching reading. It's time to apply this powerful strategy to mathematics. In this workshop, we'll look at using the gradual reveal strategy *on word problems, data tables, graphs, patterns and geometric figures – all in support of generating higher levels of motivation and student engagement.*

KEYNOTE SPEAKERS

Andres Ruzo

Biography: Andrés Ruzo is a scientist, author, science communicator, and educator, who believes that environmental responsibility and economic prosperity can go hand in hand, and uses science to unite both aims.

In 2011, Ruzo became the first geoscientist granted permission to study the sacred Boiling River of the Amazon. He is the Founder and Director of the "Boiling River Project," a non-profit dedicated to understanding and protecting the Boiling River by bringing together modern science and traditional Amazonian knowledge.

Ruzo is a National Geographic Explorer, the host of NatGeo Latin America's new series "Misterios del Inframundo," and contributor to National Geographic Learning educational materials. He is also a TED Speaker and TED Book Author.
Ruzo holds degrees in Geology and Finance from Southern Methodist University (Dallas, TX), where he is currently finishing a Ph.D. in Geology, focusing on Geothermal Sciences.

Greater than the sum of its parts: STEAM, student/teacher empowerment, and the Boiling River of the Amazon

Friday, November 2 **11:30 – 1:00** **Grandover**
Andres Ruzo
Sponsored by National Geographic/Cengage Learning

Session: There is an old jungle proverb that modern science has only recently begun to truly understand: "To kill a tree, cut down its neighbors." Join National Geographic Explorer Andrés Ruzo on a journey to the front lines of Amazonian research and conservation, where unexpected connections between American classrooms and the Peruvian jungle have become a cornerstone in the fight to protect the sacred Boiling River. Solutions exist, but attaining them means cultivating a whole that is greater than the sum of its parts.

KEYNOTE SPEAKERS

Scott Hendrickson

Biography: Scott is an associate teaching professor at Brigham Young University. He retired from classroom teaching where he had received multiple awards including Teacher of the Year (1993) and the Presidential Award for Excellence in Mathematics and Science Teaching (2003). Scott brings great insight and vision to everything he does.

Cultivating Coherence and Connections on a Foundation of Conceptual Understanding and Students' Funds of Knowledge

Thursday, November 1 **10:30a** **Imperial D**

Scott Hendrickson

Session: The Comprehensive Mathematics Instruction Framework (CMI), developed by the Brigham Young University Public School Partnership, captures the research and best practices of the CCSSM standards and the NCTM *Principles to Actions* and makes these ideas accessible to practicing and pre-service mathematics teachers. By organizing these principles and practices into a Teaching Cycle, a Learning Cycle and a Continuum of Mathematical Understanding, teachers can attend to learning progressions, formative assessment and teaching practices that support construction of conceptual understanding and procedural fluency on a foundation of student thinking. *Mathematics Vision Project* (MVP) is an example of a curriculum created using the CMI Framework. In this session, participants will be introduced to the CMI framework and its implementation through classroom vignettes where student thinking is elicited by tasks from the MVP curriculum designed to promote conceptual, procedural and representational understanding.

KEYNOTE SPEAKERS

Clif Mims

Biography: Clif Mims is a teacher, researcher, author, speaker and educational consultant specializing in the effective integration of technology with teaching and learning. He is a native of the Mississippi Delta and has more than 25 years of teaching experience. He taught elementary and middle school students and coached basketball and math teams to numerous championships. He later became a faculty member at the University of Georgia while simultaneously earning his Ph.D. in Instructional Technology from UGA. Dr. Mims became a professor of elementary mathematics and educational technology at the University of Mississippi in 2003. Clif has been a member of the University of Memphis' Instructional Design and Technology faculty since 2005 and served as Program Chair for 7 years. He is the founding Executive Director of the Martin Institute for Teaching Excellence and has been both a Project Zero Fellow and a Future of Learning Fellow at Harvard University. His research interests are related to the effective integration of technology with the processes of teaching and learning, especially as it relates to teacher professional development.

Clif is an avid fan of the Mississippi State University Bulldogs and the Memphis Grizzlies. He enjoys tennis, camping, fishing, movies, and television. He and his wife are the parents of three children and they love spending part of their summers at church camp.

Making Thinking Visible in Mathematics

Friday, November 2 **9:30 – 10:45** **Auditorium IV**

Clif Mims
Project Zero Fellow, Univ of Memphis

Session: With freely available Web 2.0 tools and mobile apps students can be empowered to provide evidence of their thinking and demonstrate their understanding of math content in multiple ways (text, images, audio, video, presentations, artwork, manipulatives, and more). Lessons and activities that integrate the Visible Thinking routines with math often simultaneously incorporate 21st century skills. Thus, Making Thinking Visible with Math provides opportunities to embed students in rich learning opportunities that weave together many of the tenants and best practices for which educational innovations and reform measures call.

THURSDAY AT A GLANCE

Thursday 8:30 AM Keynotes

1100	Problem Strings: A Lesson Format for All Students – Pam Harris	Imperial D	K - 12
1101	The Power of Progressions: Untangling the Knotty Areas of Teaching & Learning Mathematics –Graham Fletcher	Guilford C	PrK - 5

Thursday 8:30 AM Workshops

1103	Oh The Math They Will Know	Sandpiper	PrK - 2
1104	Be a Proportion Pro!	Imperial A	6 - 8
1105	Classroom-Ready Activities for Middle School Math	Imperial H	6 - 8
1110	A Smorgasbord of Middle Grades Math Activities	Imperial G	6 - 8
1111	Differentiation Can Be Fun!	Imperial B	6 - 8
1112	Ready, Set, Grow!	Tanglewood	6 - 8
1115	Connecting Math to Fun!	Colony B	6 - 12
1116	Planning, Implementing and Assessing Middle School math Using Hip-Hop Edu as an Equity tool	Imperial C	6 - 12
1117	Strategies to Promote Discourse in Math Classrooms	Carolina	6 - 12
1120	Logs Connection	Colony A	9 - 12
1121	Engage, Talk, Connect ETC., ETC., ETC Creating a Student Centered Classroom	Blandwood	9 - 12
1122	The Calculus of Model Rockets	Imperial E	9 - 12
1123	An Information Age: Mathematics of Data Science	Pebble Beach	9 - 12
1124	Using Algebra Tiles, Polynomials to Completing the Square.	Tidewater A/B	9 - 12
1125	The Millionaire Bitcoin-er!	Imperial H	9 - 12
1126	Engaging Math with Quizizz/Quizlet Live	Imperial F	9 - 12

Thursday 8:30 AM Sessions

1130	Everyone Wins! Co-planning with Colleagues to Improve Student Learning	Biltmore A	K - 12
1132	High School Math You Don't Know	Augusta A	9 - 12
1134	Uncommon Ways to Solve Equations	Arrowhead A	9 - 12
1135	Bisquick® can kill you and other fun, but WRONG, facts!	Biltmore B	9 - 12
1140	Free Money! The NCCTM Minigrant Process	Oak A	K - 12
1141	Changing Attitudes About Math through Partnership with Imagine Learning	Cedar C	K - 12
1142	Challenge them to BreakOUT!	Auditorium III	K - 12
1143	Kids' Thinking About Circles, Squares, Rectangles, and Triangles	Colony C	PrK - 2
1144	Ensuring Rigor in Inquiry Based Instruction	Auditorium II	PrK - 5
1145	What Does it Mean to be Good at Math?	Auditorium IV	PrK - 5
1146	Guided Math	Auditorium IV	PrK-5
1147	Talking Math Heads	Cedar B	3 - 5
1148	Escape the Classroom: Tips and Tools	Cedar A	3 - 5
1149	Math and reading go together like oil and vinegar	Turnberry	3 - 5
1150	Spiraling the Curriculum	Blue Ash	6 - 8
1151	Making Worksheets WORK!	Oak B	6 - 8
1152	Escaping Math phobias	Oak C	6 - 8
1153	Learning & Teaching the Math 3 Statistics Standards	Pinehurst	9 - 12
1154	Math 1 in a 1-to-1 setting	Auditorium I	9 - 12

THURSDAY AT A GLANCE

Thursday 9:30 AM Sessions

1201	Math Fairs- Organization and Topics	Cedar C	K - 12
1202	Placing a Math Curse on Students: How to engage students in real life Math.	Cedar B	K - 12
1203	Learning Tasks that Connect with Student Assets	Turnberry	K - 12
1204	Transforming Formative Assessments with Plickers	Pinehurst	K - 12
1205	I'm a new teacher, now what?	Cedar A	K - 12
1206	K-2 Place Value: More Than Just 10s and 1s!	Blue Ash	PrK - 2
1207	High Expectations in Kindergarten	Auditorium IV	PrK - 2
1208	Number Talks in Grade 2	Auditorium II	PrK - 2
1209	Mastering the Curriculum	Oak C	6 - 8
1210	Math Vocabulary Hacks	Oak B	6 - 12
1211	How Do I Do That?!: Classroom Management for Implementing All Those Best Practices You've Seen	Auditorium III	6 - 12
1212	Maximizing High School Technology for Math Courses	Colony C	9 - 12
1213	Examining Critical Conversations	Oak A	College

Thursday 10:30 AM Keynote

1300	Cultivating Coherence and Connections on a Foundation of Conceptual Understanding and Students' Funds of Knowledge – Scott Hendrickson	Imperial D	6 – 12

Thursday 10:30 AM Workshops

1301	Concretely Making Sense of Fraction Operations	Blandwood	K - 12
1302	Connecting the Dots - Primary Domino Math Games	Tidewater A/B	PrK - 2
1303	The Productive Struggle is Real	Morehead	PrK - 5
1304	Is This Really Going to Work?: Looking at Student Attempts to Generalize About the Operations	Imperial A	PrK - 5
1305	Sneaking in Science	Imperial G	3 - 5
1306	Connecting Children's Books and Mathematics	Colony B	3 - 5
1307	X and Division: More Than Just Your Memory	Pebble Beach	3 - 5
1308	Teaching Math with the LEGO Brick 3-5	Colony A	3 - 5
1309	Hanging Out On a Number Line: You're on the Spot!	Augusta B	3 - 5
1310	Making Problem Solving Meaningful	Imperial B	3 - 5
1311	Mathcation- Take A Vacation From The Same Old Math Routine!	Sandpiper	6 - 8
1312	Can You Crack the Code?	Tanglewood	6 - 12
1344	Math 1 Tasks - Tried and True Success!	Imperial E	9 - 12
1313	Strategies for ACT Success	Imperial F	9 - 12
1314	Cultivating Connections between Teaching, Learning, and Assessment	Carolina	9 - 12
1315	Groceries and Inflation!	Imperial H	9 - 12
1316	Don't Foul Out, Use A FAL	Imperial C	9 - 12

Thursday 10:30 AM Sessions

1320	Developmental Math: A Holistic Perspective	Augusta A	K - 12
1321	Guided Math Stations	Biltmore A	3 - 5
1322	Careers That Use Math: Our students will use math in their future careers!	Arrowhead A	6 - 8
1323	Coaching for the 5 Practices for Orchestrating Math Discussions	Cedar B	6 - 8
1324	Getting started with technology to boost student engagement	Biltmore B	6 - 12

THURSDAY AT A GLANCE

1330	A Better Way to Build Math Fluency?	Colony C	K - 12
1331	Take a Peek into Student Thinking	Colony C	PrK - 2
1332	NCDPI K-2 Updates: Assessment Items	Auditorium II	PpK - 2
1333	Strategies to Improve Fluency	Blue Ash	PrK - 2
1334	Tools for 2nd Grade Teachers	Oak A	PrK - 2
1335	Reflection to Action	Cedar A	PrK - 5
1337	Mathematical Reasoning and Discourse in Numberless Tasks	Oak C	3 - 5
1338	Total divided by Parts....this will rock your world!	Cedar C	3 - 5
1339	Top Ten Misconceptions in Middle School Math based on Assessment Data	Auditorium I	6 - 8
1340	Grading for Learning: What Counts?	Auditorium III	6 - 12
1341	Can we talk? Motivating students to discuss their "thinking" about math.	Oak B	6 - 12
1342	Bridging the Math 1 Gap Follow Up	Pinehurst	9 - 12
1343	Collaborative Design: Investigating chords with GeoGebra!	Auditorium IV	9 - 12

Thursday 11:30 AM Keynote

1400	Great Tasks + the Right Questions = Classroom -- Steve Leinwand	Guilford C	K - 12

Thursday 11:30 AM Sessions

1401	Designing Quality Professional Learning Opportunities	Oak C	K - 12
1402	Math, Media, and the Mathematical Mindset	Colony C	K - 12
1403	Crowd Sourcing Curriculum: How Twitter Saved my Teaching	Cedar C	K - 12
1404	Great Minds Don't Think Alike - Building Math Fluency	Blue Ash	PrK - 5
1405	Tools for Teachers: Implementation for Instructional Leaders	Auditorium II	PrK - 5
1406	Mathematical Arguments: Warranted	Turnberry	3 - 5
1407	Emerging Math Interventions & Common Themes for your Classroom	Oak B	3 - 5
1408	A Task-Based Approach to Teaching Math	Pinehurst	3 - 5
1409	Beginning Teachers Who Breed Mathematicians	Oak A	3 - 5
1410	Drain the Dread: Changing Mathematical Mindsets	Auditorium I	6 - 8
1411	Stand and Be Heard	Cedar A	6 - 8
1412	Whose Mathematics is it anyways? (De)Tracking of Teachers & Students	Auditorium III	6 - 12
1413	EMPT Successfully Links High School to Post-Secondary Math!	Auditorium IV	9 - 12

THURSDAY AT A GLANCE

Thursday 12:30 PM Workshops

1500	After the NC Check-In. Using the NC Check-In data reports and suggested instructional strategies.	Imperial A	K - 12
1501	Give Me the Facts Please!	Colony B	PrK - 2
1502	Building Mathematical Discourse in the Primary Classroom (K-2)	Blandwood	PrK - 2
1503	Reaching Students Through Representations	Tanglewood	PrK - 2
1504	Shuffle that Playlist!	Pebble Beach	PrK - 5
1505	Five Secrets to Higher Math EOG Scores	Carolina	PrK - 5
1506	Conceptual Development of Estimation: Making Connections Across the Curriculum	Augusta B	PrK - 5
1507	Teaching Fractions for Understanding	Colony A	3 - 5
1508	Creating Mathematical Writers	Imperial B	3 - 5
1509	Cultivating Coherence and Connection through Utilizing Mathematicsl Tasks in the Elementary Classroom	Imperial E	3 - 5
1510	...Involve me and I will learn	Tidwater A/B	6 - 8
1512	Dive Into the TI-84 CE updates	Imperial F	6 - 12
1513	Breaking out of Math with Digital Breakouts	Imperial H	6 - 12
1514	Making Algebra Accessible with Algebra Tiles	Sandpiper	6 - 12
1515	Hands-on proof concepts: MIRA and other tools	Imperial C	9 - 12
1516	If Your Students Can Code It, They Know It!	Imperial G	9 - 12

Thursday 12:30 PM Sessions

1520	Fostering a Collaborative Statewide Math Community	Auditorium I	K - 12
1521	Considering Variability in the Math Curriculum	Morehead	6 - 12
1522	Reflections on the 2018 AP Calculus Exams	Arrowhead A	9 - 12
1523	Closing the Gap with High Quality Math Instruction	Biltmore A	9 - 12
1530	Calendar Time	Cedar B	PrK - 2
1531	Hands-on and Self-Correcting Math Centers	Arrowhead B	PrK - 2
1532	Guided Math Practices You Can Use Tomorrow	Oak A	PrK - 2
1533	Building a CGI Classroom & Why it Matters	Auditorium IV	PrK - 5
1534	Tools For Teachers: 3rd Grade Standards and Resources	Auditorium III	3 - 5
1535	Math! Math! Read All About It!	Cedar C	3 - 5
1536	Learning Centers for Middle Grades	Blue Ash	6 -- 8
1537	Middle School Math–Success for All with Simulations!	Biltmore B	6 - 8
1538	Two negatives don’t always give you a positive!	Augusta A	6 - 8
1539	Getting LIT for Math	Colony C	6 - 8
1540	This is Math in America: Small Tweaks that lead to BIG Change	Oak C	9 - 12
1541	Mistakes to Understanding: Working with Radian and Degree Measure	Pinehurst	9 - 12
1542	How does the work environment affect the overall rating of a job? An investigative approach to covariation and the line of best fit.	Oak B	9 – 12
1543	Collaborative Design: Intro to Limits with Desmos!	Auditorium II	9 - 12
1544	The Stock Market Game	Turnberry	9 - 12
1545	(verse, in) - Put the verse first!	Cedar A	9 - 12

THURSDAY AT A GLANCE

Thursday 1:30 PM Keynote

1600	"Why Do Rational Numbers Make Me Feel So Irrational?" Julie McNamara	Guilford C	3 - 8

Thursday 1:30 PM Sessions

1601	Planning to Ensure Coherence for Students	Auditorium III	PrK - 5
1602	The Power of Virtual Manipulatives	Auditorium IV	PrK - 5
1603	Tools for Teachers: Standards and Resources for Grade 5	Auditorium II	3 - 5
1604	Teach Fractions with the help of Simulations!	Biltmore B	3 - 5
1605	10 Days to Multiplication Mastery	Arrowhead B	3 - 5
1606	Math Concept + Read-Alouds = Success	Oak A	3 - 5
1607	Games and Activities for Numerical Fluency	Colony C	6 - 8
1608	A Learning Trajectory Analysis of Open Up	Pinehurst	6 - 8
1609	Going Beyond the Formative	Cedar C	6 - 12
1610	How to Grow Groups in the Math Classroom	Augusta A	6 - 12
1611	Building a Coherent Progression of Proof	Cedar A	9 - 12
1612	Engaging Students with Contextual Applications	Oak C	9 - 12
1613	The Reality of Money Simulation	Turnberry	9 - 12
1614	Statistical Sparring: Using Media to Elicit Debate	Oak B	9 - 12
1615	AMTE-NC Business Meeting	Blue Ash	College

Thursday 2:30 PM Workshops

1700	Math Madness!	Imperial C	PrK - 2
1701	Teaching Math with the LEGO Brick K-2	Colony A	PrK - 2
1702	Math and Reading Go Together Like PB&J	Imperial F	PrK - 5
1703	Unlocking the Power of the Base 10 System	Pebble Beach	PrK - 5
1704	Increasing Engagement through Collaboration and Rich-Problem Solving	Augusta B	PrK - 5
1705	Tools for Teachers: Standards and Resources for Grade 4	Morehead	3 - 5
1706	All Hands On Deck	Sandpiper	3 - 5
1707	Selecting and Sequencing Student Strategies for Whole-Class Discussions	Imperial A	3 - 5
1708	Multiple Ways to Multiply	Tidewater A/B	6 - 8
1709	Cultivating Connections with Mathematical Modeling	Carolina	6 - 8
1710	Uncovering & Disbarring Misconceptions in Grades 6-8	Imperial B	6 - 8
1711	Math Mindsets and Math Standards - Working Together	Blandwood	6 - 12
1712	Planning for Effective Instruction	Tanglewood	6 - 12
1713	ABCs of Effective Teaching	Imperial E	9 - 12
1714	Modeling Geometry in Math 3	Imperial G	9 - 12
1715	Your Credit Score Cost You Money?	Imperial H	9 - 12

Thursday 2:30 PM Sessions

1720	College Student Understanding of Fractions	Augusta A	K - 12
1721	Something to Talk About	Arrowhead A	PrK - 5
1722	Global Education in a Secondary Math Classroom	Oak B	9 - 12
1725	Online Calculator in NCTest	Auditorium III	K - 12
1726	Fascinating 3-D Geometric Figures for Students K-12	Colony C	K - 12
1727	Learn what it's like to teach around the World	Cedar A	K - 12
1728	Tools for Teachers: Kindergarten Standards and Resources	Auditorium II	PrK - 2
1729	Exploring Math Through Literature	Auditorium IV	PrK - 5
1730	Mathematical Coherence: Area Model for Multiplication	Auditorium I	3 - 5
1731	Amplify Fractions	Pinehurst	3 - 5

THURSDAY AT A GLANCE

1732	Quick and Easy Number Talks	Oak A	3 - 5
1733	So many needs? So little time?	Turnberry	3 - 5
1735	Connections in Co-Teaching	Biltmore B	6 - 12
1736	Supporting English Language Learners with Mathematical Language Routines	Biltmore A	6 - 12
1737	Math Digital Escape Rooms	Arrowhead B	9 - 12
1738	Projects Galore in High School Math!	Oak C	9 - 12
1739	The value of a non-AP Calculus course	Cedar C	9 - 12

Thursday 3:30 PM Sessions

1801	Ideas from Future Teachers of NC: A Poster Session	Blue Ash	K - 12
1802	The Presidential Awards for Excellence in Mathematics and Science Teaching	Auditorium I	K - 12
1803	From Modeling to Algorithms: Supporting Teachers in Building Students' Understanding of Operations with Rational Numbers, 4-8	Auditorium II	3 – 5
1804	The Fundamentals of Fractions	Auditorium III	3 - 5
1806	Routines to Foster Mathematical Discourse	Cedar B	6 -- 8
1807	MASH- "mansion, apartment, shack or house"; A middle school game of life's big choices!	Auditorium IV	6 - 8
1808	Using Data to Promote Discourse	Cedar A	6 - 8
1809	The American Mathematics Competitions: Equal Access in NC?	Colony C	6 - 12
1810	Inclusion Institute	Biltmore B	6 - 12
1811	2018 A.P. Calculus Exam	Pinehurst	9 - 12
1812	#STEM#LikeAGirl	Oak C	9 - 12
1813	Pre-calculus in a Nutshell: From the NCCCS Perspective	Turnberry	9 – 12

Thursday 4:30 – 6:00 PM

1900	NCCTM Awards Celebration	Guilford C	General

THURSDAY WORKSHOPS & SESSIONS

Thusday 8:30 AM Keynotes

Problem Strings: A Lesson Format for All Students

8:30 AM - 10:00 AM Imperial D
1100, **Keynote Speaker, Grades: K12**

A problem string is a powerful instructional routine where all students learn, have access to the problems, and are challenged. The success hinges on the teacher's purposeful question order, class discussion, and modeling student strategies to build connections. Come experience a variety of problem strings that promote everything from numeracy and proportions to functions and learn to facilitate problem strings in your classroom.

***Pam Harris**,Texas State University*

The Power of Progressions: Untangling the Knotty Areas of Teaching and Learning Mathematics

8:30 AM - 10:00 AM Guilford C
1101, **Keynote Speaker, Grades: PreK-5**

As more teachers look to add high-yield tasks to their repertoire, the struggle to make it all work becomes real. Let's examine how problem-based lessons can be used throughout the scope of a unit and how we can harness their power to move student thinking forward. We'll identify strategies and explore some tasks that help us find a healthy balance between application, conceptual understanding, and procedural fluency.

Graham Fletcher

Thursday 8:30 AM Workshops

Oh The Math They Will Know

8:30 AM - 10:00 AM Sandpiper
1103, Workshop, Grades: PreK-12

Come prepared to play games that incorporate cards and dice to teach counting, place value, comparing numbers, counting on, patterns, addition/subtraction, doubles and more.

***Stephanie Bainbridge**, Box Cars and One Eyed Jacks*

Classroom-Ready Activities for Middle School Math

8:30 AM - 10:00 AM Imperial H
1105, Workshop, Grades: 6-8

Participants will engage in hands-on activities involving problem solving, fractions, coordinate geometry, and probability. Manipulatives will be used to focus on conceptual understanding. Hand-outs provided.

***Charlcy Carpenter**, Appalachian State University*
***Rebecca Boyles,** Appalachian State University*
***Saige Roberts**, Appalachian State University*

A Smorgasbord of Middle Grades Math Activities

8:30 AM - 10:00 AM Imperial G
1110, Workshop, Grades: 6-8

Participants will engage in hands-on activities involving problem solving, statistics, probability, and algebraic thinking. Activities will be appropriate for learning stations. Handouts will be provided.

***Deborah Crocker**, Appalachian State University*
***Betty Long,** Appalachian State University*

Differentiation Can Be Fun!

8:30 AM - 10:00 AM Imperial B
1111, Workshop, Grades: 6-8

Join us for a differentiated math learning experience utilizing multiple tech tools and manipulatives in a middle school classroom.

***Elizabeth Henley**, Rowan Salisbury Schools*
***Renee Fox,** Rowan Salisbury Schools*

Ready, Set, Grow!

8:30 AM - 10:00 AM Tanglewood
1112, Workshop, Grades: 6-8

Appetizers, Snacks, Doggy Bags, and Celebrations of Learning in math?! How we changed our words and policies to implement a growth mindset in our classrooms!

***Jessica Weaver**, Private Tutor and Academic Coach*
***Christina Wilson,** Clover Garden Elementary School*

Connecting Math to Fun!

8:30 AM - 10:00 AM Colony B
1115, Workshop, Grades: 6-12

Need an alternative to those boring worksheets? Want to increase student engagement and fun? This session will demonstrate ready-made activities and games that can be used in your class on Monday!

***Heather Davis**,Greene Early College High School*
***Maggie Nesbitt,** Greene Early College High School*
***Kayla Chandler**, Innovation Early College High School*

Planning, Implementing and Assessing Middle School math Using Hip-Hop Edu as an Equity tool

8:30 AM - 10:00 AM Imperial C
1116, Workshop, Grades: 6-12

This workshop will introduce “Reality Pedagogy” and the process of developing a high energy and high impact lesson plan.

***Peter Eley**, Fayetteville State University*

Strategies to Promote Discourse in Math Classrooms

8:30 AM - 10:00 AM Carolina
1117, Workshop, Grades: 6-12

Do you struggle with student engagement in your lessons? You will learn about and practice study team teaching strategies that will help facilitate effective collaboration.

***Gerry Long** ,CPM Educational Program*

THURSDAY WORKSHOPS & SESSIONS

Logs Connection
8:30 AM - 10:00 AM Colony A
1120, Workshop, Grades: 9-12

Help your students make sense and connections with logarithms.

***Nara Cocarelli**,East Lincoln High School*

Engage, Talk, Connect ETC., ETC., ETC Creating a Student Centered Classroom
8:30 AM - 10:00 AM Blandwood
1121, Workshop, Grades: 9-12

Participate in activities/tasks that Engage your students to Think, to wonder, to question, to Talk, to problem solve and to make Connections!!

***Jim deBerjeois**, Big Ideas Learning*

The Calculus of Model Rockets
8:30 AM - 10:00 AM Imperial E
1122, Workshop, Grades: 9-12

Learn how to take model rocket engine specifications and use Euler's Method to make graphs.

***Mahmoud Harding**,North Carolina School of Science and Mathematics*
***Garrett Love,** North Carolina School of Science and Mathematics*

An Information Age: Mathematics of Data Science
8:30 AM - 10:00 AM Pebble Beach
1123, Workshop, Grades: 9-12

In this workshop, we will explore the field of mathematics and computer science known as machine learning.

***Blain Patterson**, North Carolina State University*
***Sarah Ritchey,** Duke University*

Using Algebra Tiles, Polynomials to Completing the Square.
8:30 AM - 10:00 AM Tidewater A/B
1124, Workshop, Grades: 9-12

Teachers will learn how to use Algebra Tiles to make Algebra into a concrete visual experience for their students.

***Tim Scripko**,College Preparatory Mathematics*

The Millionaire Bitcoin-er!
8:30 AM - 10:00 AM Imperial H
1125, Workshop, Grades: 9-12

Bitcoin....a scheme or the future of investing? Attend to this interactive session and use graphs and historical data to solve this mystery.

***Amber Thomas**, North Carolina Council on Economic Education*

Engaging Math with Quizizz/Quizlet Live
8:30 AM - 10:00 AM Imperial F
1126, Workshop, Grades: 9-12

Who gets excited about the x-axis? See your classroom transform into excitement, movement and engagement! All courses are available. Pre-built questions or create your own.

***Hannah Worley**, Madison High School*
***Cynthia Whitt,** Madison High School*

Thursday 8:30 AM Sessions

Everyone Wins! Co-planning with Colleagues to Improve Student Learning
8:30 AM - 10:00 AM Biltmore A
1130, Grades: K-12

Do you participate in professional learning communities at your school? Do you coach math teachers? Do you mentor teachers? Do you co-teach with another teacher? Planning to host an intern in the future? If you answered yes to any of these questions, this workshop is perfect for you! Our session details six co-planning strategies to use with interns and colleagues to support student thinking.

***Charity Cayton**,East Carolina University*
***Maureen Grady,** East Carolina University*
***Joe Reaper**, NCDPI*

High School Math You Don't Know
8:30 AM - 10:00 AM Augusta A
1132, Grades: 9-12

We will consider new mathematical ideas commensurate with high school mathematics

***Michael Bosse**, Appalachian State University*
***Ashley Demarte,** Appalachian State University*
***Joe Boyette**, Appalachian State University*

Uncommon Ways to Solve Equations
8:30 AM - 10:00 AM Arrowhead A
1134, Grades: 9-12

Students should be flexible in solving one variable equations. This includes being able to recognize when one strategy is more appropriate to apply than another. Join us to explore strategies such as Build & Undo; Using Structure; Balancing; and Visual Representations and discuss how these strategies are used in Math 1, 2 and 3.

***Andrea Hollifield**, Buncombe County Schools*
***Karen McPherson,** Buncombe County Schools*

Bisquick® can kill you and other fun, but WRONG, facts!
8:30 AM - 10:00 AM Biltmore B
1135, Grades: 9-12

People often believe “facts” they hear/read, regardless of their truth. We will examine newspaper articles, facebook, and bad graphs to see how data is manipulated/misrepresented.

***Colleen Watson**, James Madison University*

Free Money! The NCCTM Minigrant Process
8:30 AM - 9:15 AM Oak A
1140, Grades: K-12

Curious about the NCCTM minigrant process? This session will discuss the pitfalls, recommendations, curriculum, and NCEES connections of the NCCTM minigrant process. Handouts will be provided.

***Sandra Childrey**, Athens Drive Magnet High School*
***Joy McCormick,** Rockingham County Middle School*

THURSDAY WORKSHOPS & SESSIONS

Changing Attitudes About Math through Partnership with Imagine Learning

8:30 AM - 9:15 AM Cedar C
1141, Grades: K-12

Shift the attitudes of your students and culture of your schools through inspiring your community with the growth mindset. We'll examine how schools implementing Imagine Math have changed their school culture and inspired kids to love math.

Imagine Math is an adaptive math tool that facilitates learning through Live, on-demand 1:1 instruction from over 80 certified math teachers for over 80 hours per week.

***Connor Gray**, Imagine Learning*

Challenge them to BreakOUT!

8:30 AM - 9:15 AM Auditorium III
1142, Grades: K-12

Tired of using the same type of review for your students? Come learn how to engage and challenge your students by using boxes and locks!

***Ivey Powell**, Nash-Rocky Mount Public Schools*

Kids' Thinking About Circles, Squares, Rectangles, and Triangles

8:30 AM - 9:15 AM Colony C
1143, Grades: PreK-2

In this presentation, we will take a look at what research says about kids' thinking in regard to shape identification.

***F. Paul Wonsavage**,UNCG*

Ensuring Rigor in Inquiry Based Instruction

8:30 AM - 9:15 AM Auditorium II
1144, Grades: PreK-5

Come learn about methods for ensuring that all students are achieving a rigorous objective when implementing an inquiry based math lesson.

***Caitlin Kearney**,Mauren Joy Charter School*
***Lori Fisher,** Mauren Joy Charter School*

What Does it Mean to be Good at Math?

8:30 AM - 9:15 AM Auditorium IV
1145, Grades: PreK-5

Parents, students and teachers have well defined ideas about what it means to be good at math. Join me as we investigate these ideas, where these ideas come from and reflect on implications for instruction.

***Kaneka Turner**, Reimage LLC*
***Mary Shaw-Lewis,** Charlotte-Mecklenburg Schools*

Talking Math Heads

8:30 AM - 9:15 AM Cedar B
1147, Grades: 3-5

Give students the confidence to discuss math by using number lines, number talks, and math talks without fear of making a mistake. We celebrate errors!

***Tasha Key**, Isenberg Elementary/Rowan Salisbury Schools*
***Lindley Guri,** Isenberg Elementary/Rowan Salisbury Schools*

Escape the Classroom: Tips and Tools

8:30 AM - 9:15 AM Cedar A
1148, Grades: 3-5

What is an educational break-out? Learn about this critical-thinking and team building activity and the ways you can make it work in your own classroom.

***Kristina Kinlaw**,St. Pauls Elementary School/Public Schools of Robeson County*

Math and reading go together like oil and vinegar

8:30 AM - 9:15 AM Turnberry
1149, Grades: 3-5

This workshop will focus on how to integrate the subject areas of math and reading. We will discuss examples of how to integrate both subject areas as well as give the participants a chance to show how they do it in their classrooms.

***Somer Southers**, Rex Rennert elementary school*

Spiraling the Curriculum

8:30 AM - 9:15 AM Blue Ash
1150, Grades: Grades: 6-8

Learn how to identify the core concepts of your math curriculum and be able to spiral throughout each domain to support student growth and mastery.

***Whitney Honeycutt**, East Union Middle School/Union County Public Schools*
***Danyah Hill,** East Union Middle School/Union County Public Schools*
***Jaime Cassada**, East Union Middle/Union County Public Schools*
***Rhiannon Kriessler**, East Union Middle School/Union County Public Schools*

Making Worksheets WORK!

8:30 AM - 9:15 AM Oak B
1151, Grades: 6-8

Taking a math worksheet and turning it into a hands-on activity or station for middle school students.

***Betsy O'Hara**, Brunswick County*
***Anne Wallace,** Brunswick County*

Escaping Math phobias

8:30 AM - 9:15 AM Oak C
1152, Grades: 6-8

Utilizing the Three Acts of a Mathematical Story. Participants will work collaboratively to solve a series of critical thinking real world math problems to open a locked box. Discover how you can help students overcome math phobia's in the math escape room

***Ken Orgain**, Pearson Education*

THURSDAY WORKSHOPS & SESSIONS

Learning & Teaching the Math 3 Statistics Standards

8:30 AM - 9:15 AM Pinehurst
1153, Grades: 9-12

In this session, we discuss the statistics standards in Math 3 and how to teach them focusing on the process of making inferences and simulation.

***Alicia Conklin**,Iredell Statesville Schools*
***Krystle Smith,** Iredell Statesville Schools*
***Travis Weiland**, Appalachian State University*

Math 1 in a 1-to-1 setting

8:30 AM - 9:15 AM Auditorium I
1154, Grades: 9-12

In this session you will receive a look into the 1 to 1 world as it pertains to math 1. Be ready to dig into the math 1 curriculum and discuss ways to make math 1 concepts interactive while incorporating technology.

***Justin Lunsford**, Hickory Career & Arts Magnet high School*

Thursday 9:30 AM Sessions

Math Fairs- Organization and Topics

9:30 AM - 10:15 AM Cedar C
1201, Grades: K-12

Learn about what it take to organize a math fair at your school/district. Also learn about topic ideas from past math fair winning projects.

***Sumer Inman**Nesbitt Discovery Academy, Buncombe Country*
***Holly Goforth,** Freedom HS/ Burke*
***Wendy Graham**, Asheboro High School*
***Heather Davis**,*

Placing a Math Curse on Students: How to engage students in real life Math.

9:30 AM - 10:15 AM Cedar B
1202, Grades: K-12

Learn methods to put a Math Whammy on students to show how Math connects to their lives. Inspired by Jon Scieszka's Math Curse.

***Stephen Lester,** North Carolina Connections Academy*

Learning Tasks that Connect with Student Assets

9:30 AM - 10:15 AM Turnberry
1203, Grades: K-12

We will focus on planning learning tasks that consider personal, cultural and/or community assets of students. Several application projects at varied levels will be shared.

***Leah McCoy**, Wake Forest University*

Transforming Formative Assessments with Plickers

9:30 AM - 10:15 AM Pinehurst
1204, Grades: K-12

Save time, collect data, and engage students by using Plickers as a formative assessment tool in your classroom. You and your students will love it!

***Christina Petty**, Southside High School*
***Emily Myes,** Beaufort County Schools*

I'm a new teacher, now what?

9:30 AM - 10:15 AM Cedar A
1205, Grades: K-12

How to build confidence as a new teacher along with best practices strategies to take back today.

***Ginean Royal**, Equipped Educator*

K-2 Place Value: More Than Just 10s and 1s!

9:30 AM - 10:15 AM Blue Ash
1206, Grades: PreK-2

Together we'll explore a sequence of tools and tasks to help K-2 students develop a robust understanding of place value.

***Leigh Belford**, East Carolina University*

High Expectations in Kindergarten

9:30 AM - 10:15 AM Auditorium IV
1207, Grades: PreK-2

How might we balance developmentally appropriate instruction with high expectations in kindergarten? Join us as we explore this question!

***Nikia Graham**, Charlotte-Mecklenburg Schools*
***Kaneka Turner,** Reimage LLC*

Number Talks in Grade 2

9:30 AM - 10:15 AM Auditorium II
1208, Grades: PreK-2

Grade 2: Tools for Teachers, Number Sense

During this session we will model how to address the second grade standards through number talks. We will explore how second graders' strategies progress throughout the year.

***Tery Gunter**, Duke School*
***Carly Morton,** Voyager Academy*

Mastering the Curriculum

9:30 AM - 10:15 AM Oak C
1209, Grades: 6-8

Build a foundation focused on the most heavily tested standards. Scaffold student learning by analyzing data, building strategy groups, remediating, and reassessing to promote growth.

***Danyah Hill**,East Union Middle School/Union County Public Schools*
***Whitney Honeycutt,** East Union Middle School/Union County Public Schools*
***Jaime Cassada**, East Union Middle School/Union County Public Schools*
***Rhiannon Kriessler**, East Union Middle School/Union County Public Schools*

Math Vocabulary Hacks

9:30 AM - 10:15 AM Oak B
1210, Grades: 6-12

Are you looking for strategies to engage your students in learning math vocabulary? Come join the fun and participate in activities that you can implement in your classroom tomorrow.

***Lisa Neal**, Lee County Schools*

-Maximizing High School Technology for Math Courses

9:30 AM - 10:15 AM Colony C
1212, Grades: 9-12

Technology has changed classrooms. Online, interactive math simulations allow students to take problems, change variables, evaluate outcomes, and have opportunity to truly understand the outcomes.

***Thom OBrien**, Explorelearning*

THURSDAY WORKSHOPS & SESSIONS

Examining Critical Conversations

9:30 AM - 10:15 AM Oak A
1213, Grades: College & Univ.

We share an analysis of critical conversations that included differences in perspectives among stakeholders when making particular decisions during the development of the instructional frameworks.

***Arren Duggan**, UNC-Greensboro*
***Catherine Schwartz,** ECU*
***Michelle Stephan**, UNC-Charlotte*

Thursday 10:30 AM Keynote

Cultivating Coherence and Connections on a Foundation of Conceptual Understanding and Students' Funds of Knowledge

10:30 AM - 12:00 PM Imperial D
1300, **Keynote Speaker, Grades: 6-12**

The Comprehensive Mathematics Instruction Framework (CMI), developed by the Brigham Young University Public School Partnership, captures the research and best practices of the CCSSM standards and the NCTM Principles to Actions and makes these ideas accessible to practicing and preservice mathematics teachers. By organizing these principles and practices into a Teaching Cycle, a Learning Cycle and a Continuum of Mathematical Understanding, teachers can attend to learning progressions, formative assessment and teaching practices that support construction of conceptual understanding and procedural fluency on a foundation of student thinking. Mathematics Vision Project (MVP) is an example of a curriculum created using the CMI Framework. In this session, participants will be introduced to the CMI framework and its implementation through classroom vignettes where student thinking is elicited by tasks from the MVP curriculum designed to promote conceptual, procedural and representational understanding.

***Scott Hendrickson**, Brigham Young University and Mathematics Vision Project*

Thursday 10:30 AM Workshops

Concretely Making Sense of Fraction Operations

10:30 AM - 12:00 PM Blandwood
1301, Workshop, Grades: K-12

This session will focus on making sense of fraction operations using fraction tiles. It is perfect for anyone working with fraction addition, subtraction, multiplication, and division.

***Thomas Coleman**, North Carolina A&T State University*

Connecting the Dots - Primary Domino Math Games

10:30 AM - 12:00 PM Tidewater A/B
1302, Workshop, Grades: PreK-2

Come prepared to play domino games that teach the following: subitizing, numeration and place value, patterns and graphing, operations. Gameboars, student samples and great ideas for whole group or small centers.

***Lori Triplett**, Central District Oahu*

The Productive Struggle is Real

10:30 AM - 12:00 PM Morehead
1303, Workshop, Grades: PreK-5

Explore how to support productive struggle through low-floor, high-ceiling tasks in order to create and nurture a growth-oriented mathematical mindset.

***Dustin Best**, New Century International Elementary*
***Laura Stockham,** EE Miller Elementary*

Is This Really Going to Work?: Looking at Student Attempts to Generalize About the Operations

10:30 AM - 12:00 PM Imperial A
1304, Workshop, Grades: PreK-5

In this K-5 session, we will examine how students notice, make sense of, and articulate arguments and then justify their claims about the operations.

***Marta Garcia**, Independent*
Meredith Stanley
Kaneka Turner

Sneaking in Science

10:30 AM - 12:00 PM Imperial G
1305, Workshop, Grades: 3-5

Are you looking for ways to integrate more science into your 3rd-5th grade Math/Science block? Come and explore some engaging hands-on activities that can help you develop math and science content knowledge, critical thinking and process skills.

***Rebecca Berdeau**, Christ the Cornerstone Academy*

Connecting Children's Books and Mathematics

10:30 AM - 12:00 PM Colony B
1306, Workshop, Grades: 3 - 5

Let's get together to engage in math activities connected to children's literature! We will use one activity from each of the domains.

***Sheila Brookshire**, Retired Buncombe County Schools*

X and Division: More Than Just Your Memory

10:30 AM - 12:00 PM Pebble Beach
1307, Workshop, Grades: 3-5

Tired of flash cards? Join us as we help you move your students from additive thinking to multiplicative thinking and from memorization to automaticity. We will analyze how multiplication and division are related and how they are constructed through conceptual tasks, strategies, collaboration and reflection.

***Dorothy Dalton**, Hickory Public Schools*
***Jerrica Dula,** Hickory Public Schools*

THURSDAY WORKSHOPS & SESSIONS

Teaching Math with the LEGO Brick 3-5

10:30 AM - 12:00 PM Colony A
1308, Workshop, Grades: 3-5

Participants will engage in the modeling of math concepts such as fractions, multiplication, division, measurement using LEGO Bricks. Handouts provided.

***Shirley Disseler**, High Point University*

Hanging Out On a Number Line: You're on the Spot!

10:30 AM - 12:00 PM Augusta B
1309, Workshop, Grades: 3-5

Get up and move as you physically demonstrate your understanding of numbers, operations, and algebraic reasoning. This powerful workshop helps students see and feel position on a number line. Number sense and reasoning are needed to locate your spot. Answer the following: The endpoints are 3/4 and 1 3/4. Where are you located if you are 1 1/3?

***Lauren Stott**, Big Ideas Learning, LLC*

Making Problem Solving Meaningful

10:30 AM - 12:00 PM Imperial B
1310, Workshop, Grades: 3-5

This workshop will explore engaging ways to provide meaningful problem solving experiences to students at varying levels.

***Heather Thomas**, National Training Network*

Mathcation- Take A Vacation From The Same Old Math Routine!

10:30 AM - 12:00 PM Sandpiper
1311, Workshop, Grades: 6-8

Help students unlock their potential and get rid of math anxiety by using regular cards and dice to teach fun, educational and differentiated math games.

***Stephanie Bainbridge**, Box Cars and One Eyed Jacks*

Can You Crack the Code?

10:30 AM - 12:00 PM Tanglewood
1312, Workshop, Grades: 6-8

Experience an escape room math style while you work together to find clues, solve puzzles, to crack the code and have fun! Handouts and Google folder will be shared.

***Maggie Nesbitt**, Greene Early College High School/Greene County Schools*
***Heather Davis,** Greene Early College High School/Greene County Schools*
***Kayla Chandler**, Innovation Early College High School*

Math 1 Tasks - Tried and True Success!

10:30 AM - 12:00 PM Imperial E
1344, Workshop, Grades: 6-12

Tired of sifting through the thousands of resources and trying to decide which ones will be successful? I will be sharing tasks that I have used with my Math 1 classes that have actually worked! Tasks have been adapted from Illustrative Mathematics, MVP, Desmos, and Discovery Education. Topics covered - Functions, Linear Regression and Residuals, Systems of Equations, and others. I will also share tasks that I have created. Bring a computer or tablet.

***Wendy Bartlett**, Winston-Salem/Forsyth County -- Reagan High School*

Strategies for ACT Success

10:30 AM - 12:00 PM Imperial F
1313, Workshop, Grades: 9-12

The ACT was updated in 2016. Strategies, including the use of the TI-84, will be shared that will increase student success.

***Rebecca Caison**, Greensboro College*

Cultivating Connections between Teaching, Learning, and Assessment

10:30 AM - 12:00 PM Carolina
1314, Workshop, Grades: 9-12

High school mathematics teachers share best practices from two principles – Teaching & Learning and Assessment – from Principles to Actions that they implemented in their classrooms. Experience a series of mini-presentations full of practical ideas.

***Charity Cayton**, East Carolina University*
***Ron Preston,** East Carolina University*
***Graduate Students from ECU HS Mathematics Cohort** East Carolina University*

Groceries and Inflation!

10:30 AM - 12:00 PM Imperial H
1315, Workshop, Grades: 9-12

Why was a Coca Cola cheaper 50 years ago? Come to this interactive lesson to learn why and be gain access to many more lessons!

***Amber Thomas**, North Carolina Council on Economic Education*

Don't Fowl Out, Use A FAL

10:30 AM - 12:00 PM Imperial C
1316, Workshop, Grades: 9-12

Want higher engagement and more collaboration? Want immediate access to hands-on materials? Participants will get to engage in collaborative activities. Math 1-3.

***Cynthia Whitt**, Madison High School*
***Hannah Worley,** Madison High School*

THURSDAY WORKSHOPS & SESSIONS

Thursday 10:30 AM Sessions

Developmental Math: A Holistic Perspective
10:30 AM - 12:00 PM Augusta A
1320, Grades: K-12

Successful developmental math addresses: appropriate content; problem solving, reasoning, and reading skills; student beliefs and affect; instructor competence and affect; and other dimensions

***Michael Bosse**, Appalachian State University*
***John Sevier,** Appalachian State University*
***Ashley Demarte**, Appalachian State University*
***Joe Boyette**, Appalachian State University*

Guided Math Stations
10:30 AM - 12:00 PM Biltmore A
1321, Grades: 3-5

Ever struggle with how to reach every child at his/her level in mathematics? Come and let us show you ways to implement guided math stations into your classroom. Leave with a wealth of ideas to use in your classroom on Monday morning. This can be used in any elementary classroom.

***Nikki Stamey**,Icard Elementary/Burke County*
***Christina Baker,** Icard Elementary/Burke County*

Careers That Use Math: Our students will use math in their future careers!
10:30 AM - 12:00 PM Arrowhead A
1322, Grades: 6-8

Our session is a comprehensive application of researched teaching strategies/practice based on brain research. This method of Instruction is FUN because it's engaging, meaningful, and creates intrinsic motivation.

***Brenda Hawks**, Forestbrook Middle School, Horry County Schools*
***Willie Chad Hawks,** Forestbrook Middle School, Horry County Schools*

Coaching for the 5 Practices for Orchestrating Math Discussions
10:30 AM - 12:00 PM Cedar B
1323, Grades: 6-8

Making the 5 Practices work in your school; insights from teachers, coach, assistant principal and researchers.

***Michelle Stephan**,UNC Charlotte*
***Gerold Griggs Kendra Parker,** Kannapolis Middle School*
***Doug Goldman Martha Motley**, Kannapolis Middle School*
***Yachannah Galloway Luke Reinke**, UNC Charlotte*

Getting started with technology to boost student engagement
10:30 AM - 12:00 PM Biltmore B
1324, Grades: 6-12

Participants will use a variety of technological tools to increase students' engagement in planning, enacting, and assessment of instruction, and leave with an online toolbox!

***Mitchell Lebowitz**,UNC Charlotte*
***Wayne Williams,** North Carolina State University*

A Better Way to Build Math Fluency?
10:30 AM - 11:15 AM Colony C
1330, Grades: K-12

It is critical that students have strong fact fluency skills. Using a game-based system provides individualized instruction and targeted practice while having fun.

***Laurie Merlo**, ExploreLearning*

Take a Peek into Student Thinking
10:30 AM - 11:15 AM Colony C
1331, Grades: PreK-2

Our students' work is a valuable window into their thinking! View student work through an admiring lens to determine individual strengths and next steps.

***Danielle Long**, Union County Public Schools*

NCDPI K-2 Updates: Assessment Items
10:30 AM - 11:15 AM Auditorium II
1332, Grades, PreK-2
***Denise Schulz**, NC DPI*

Strategies to Improve Fluency
10:30 AM - 11:15 AM Blue Ash
1333, Grades: PreK-2

Students need visuals and exposure to different strategies so they can flexibly manipulate numbers and math facts.

***Elizabeth Tucker**, Union Academy Charter School*
***Linda Simons,** Union Academy Charter School*
***Shannen Bretz**, Union Academy Charter School*

Tools for 2nd Grade Teachers
10:30 AM - 11:15 AM Oak A
1334, Grades: PreK-2

We will share the 2nd grade revised standards in the K-5 Instructional Framework and the wonderful resources available to all! You won't believe your eyes!

***Dianne Wells**, Henderson County Public Schools*
***Katherine Mawhinney,** Appalachian State University*

Reflection to Action
10:30 AM - 11:15 AM Cedar A
1335, Grades: PreK-5

Explore teacher reflection strategies that motivate student-focused instruction. You will leave with a reflective toolkit that will help invigorate and refresh your mathematics instruction.

***Katherine Baker**, Elon University*
***Montana Smithey,** UNC-Greensboro*

THURSDAY WORKSHOPS & SESSIONS

Mathematical Reasoning and Discourse in Numberless Tasks

10:30 AM - 11:15 AM Oak C
1337, Grades: 3-5

Do you want to engage students in meaningful math discourse and deepen conceptual understanding? Come learn about numberless word problems and how to implement them.

***Vangela Eleazer**, Durham Public Schools/North Carolina State University*
***Devin Warmack,** Fayetteville Street Elementary/Durham Public Schools/North Carolina State University*

Total divided by Parts....this will rock your world!

10:30 AM - 11:15 AM Cedar C
1338, Grades: 3-5

Fifth Grade teachers do you struggle to teach NF3 or NF7 word problems? Come learn some techniques that will build a solid foundation to understanding and applying these two standards that will revolutionize your math teaching!

***Caroline Fongemy**,Kannapolis City*
***Alexandra Medley,** Kannapolis City Schools*

Top Ten Misconceptions in Middle School Math based on Assessment Data

10:30 AM - 11:15 AM Auditorium I
1339, Grades: 6-8

45,000 diagnostic assessments have been administered to middle grades students across a diverse set of schools. The items were written to evaluate students' progress along 62 learning trajectories. The team identified and coded 187 misconceptions. We identify the top ten and how learning trajectories can help address them.

***Jere Confrey**,North Carolina State University*

Grading for Learning: What Counts?

10:30 AM - 11:15 AM Auditorium III
1340, Grades: 6-12

If we are focused on learning with a growth mindset, why do we grade? What should we grade? How can we make grading about assessment instead of measurement? Come discuss equitable grading practices with us that move your grading from pushing a fixed mindset, and implement these easy fixes in your department tomorrow.

***Lauren Baucom**,UNC-Greensboro*
***Kelsey Anselmi,** Crestdale Middle School*

Can we talk? Motivating students to discuss their "thinking" about math.

10:30 AM - 11:15 AM Oak B
1341, Grades: 6-12

Students need to be motivated to explain and justify their "thinking" to not only the teacher but peers. To encourage mathematical discourse, teachers must learn to engage students in dialogue by providing instruction that is relevant, interesting, and at times humorous. This session will provide examples of how to facilitate whole group discussion that encourages students to vocalize their thought processes through effective questioning strategies and prompts. Teachers will leave with ways to create a more student focused environment in order to actively engage pupils in daily instruction and learning.

***Teresa Morton**,Brunswick County*

Bridging the Math 1 Gap Follow Up

10:30 AM - 11:15 AM Pinehurst
1342, Grades: 9-12

Come discuss and learn about the new approaches we have taken to reach our lowest level Math 1 students. Hear our results, discuss and learn how to implement similar practices.

***Mikaela Edge**,Croatan High School*
***Lynn DeRosia,** Croatan High School*

Collaborative Design: Investigating chords with GeoGebra!

10:30 AM - 11:15 AM Auditorium IV
1343, Grades: 9-12

Investigating chords with GeoGebra! Engage with the task and consider the ways teachers and teacher educators can support future teachers learning to design technology tasks.

***Allison McCulloch**,UNC Charlotte*
***Kristen Fye,** Charlotte Teacher Early College HS*
***Courtney Jones**, UNC Charlotte (Math Education Student)*
***Samatha Fitzgerald**, UNC Charlotte (Math Education Student)*

Thursday 11:30 AM Keynote

Great Tasks + the Right Questions = Classroom Magic in the Form of +/- 8 Slide Lesson Guides

11:30 AM - 1:00 PM Guilford C
1400, **Keynote Speaker**
Grades: K-12

Many of us struggle to craft and implement powerful and effective mathematics lessons that live up to the high expectations of NCTM's 8 Mathematics Teaching Practices found in Principles to Actions. Our job is even more difficult in a world with such an array of great on-line resources. This talk will explore and model a development process and present a set of +/- 8 slide lesson guides that have emerged from this process and that support the planning and implementation of great lessons.

***Steve Leinwand**,American Institutes for Research*

THURSDAY WORKSHOPS & SESSIONS

Thursday 11:30 AM Sessions

Designing Quality Professional Learning Opportunities
11:30 AM - 12:15 PM Oak C
1401, Grades: K-12

This session, designed for mathematics leaders, presents components to consider when designing or choosing professional development opportunities for mathematics teachers and leaders.

***Emily Bryant**, UNC-Greensboro*

Math, Media, and the Mathematical Mindset
11:30 AM - 12:15 PM Colony C
1402, Grades: K-12

Explore the impact that media has on your students' perceptions of knowing and doing mathematics and engage in activities to better understand your students' mathematics-related beliefs and strategies to improve them.

***Shelby Morge**,University of North Carolina Wilmington*

Crowd Sourcing Curriculum: How Twitter Saved my Teaching
11:30 AM - 12:15 PM Cedar C
1403, Grades: K-12

Come to learn about the Math-Twitter-Blog-o-Sphere and see how 280 characters can transform your teaching, support your professional growth, and aid in your curriculum planning.

***Jennifer White**, University of North Carolina School of the Arts High School Academic Program*

Great Minds Don't Think Alike - Building Math Fluency
11:30 AM - 12:15 PM Blue Ash
1404, Grades: PreK-5

Using a combination of Number Strings and Number Talks we can help students develop a stronger "toolbox" for thinking about numeracy.

***Ryan Dougherty**,ETA hand2mind*

Tools for Teachers: Implemenation for Instructional Leaders
11:30 AM - 12:15 PM Auditorium II
1405, Grades: PreK-5

Come explore the professional development resources that are available to support your teachers with the implementation of the revised standards.

***Kayonna Pitchford**, UNC Pembroke*
***Carol Midgett,** Meredith College*

Mathematical Arguments: Warranted
11:30 AM - 12:15 PM Turnberry
1406, Grades: 3-5

Join us in discussing the components of a mathematical argument, tasks that can encourage to students to write an argument, and ways to assess arguments.

***Madelyn Colonnese**, University of North Carolina at Charlotte*

Emerging Math Interventions & Common Themes for your Classroom
11:30 AM - 12:15 PM Oak B
1407, Grades: 3-5

Hear about several emerging and successful math intervention programs, including one based in Charlotte. Learn how to leverage program takeaways and resources for your classroom.

***Cydney Kramer**, Heart Math Tutoring*
***Emily Elliott,** Heart Math Tutoring*
***Padgett Sullivan**, Heart Math Tutoring*

A Task-Based Approach to Teaching Math
11:30 AM - 12:15 PM Pinehurst
1408, Grades: 3-5

Come explore and learn to implement task-based lesson design. Participants will leave with examples they can use in the classroom.

***Lynn Marcin**, Durham Public Schools*

Beginning Teachers Who Breed Mathematicians
11:30 AM - 12:15 PM Oak A
1409, Grades: 3-5

Exploring Guided Math and Building Accountability

***Kadrien Wilson**,Guilford County*
***Sabrina Peacock,** Guilford County*
***Brittney Dennis**, Irving Park Elementary*

Drain the Dread: Changing Mathematical Mindsets
11:30 AM - 12:15 PM Auditorium I
1410, Grades: 6-8

Changing math instruction from robotic processes to one favoring student voice and choice, multiple representations, and making connections.

***E.J. Elgin**, Curriculum Associates*

Stand and Be Heard
11:30 AM - 12:15 PM Cedar A
1411, Grades: 6-8

Get your students moving to improve their motivation, engagement, and love of math. Walk, skip, or run out with great resources, strategies, and ideas.

***Karen Walker**, Brunswick County*
***Jayne Slease,** Brunswick County*

Whose Mathematics is it anyways? (De)Tracking of Teachers & Students
11:30 AM - 12:15 PM Auditorium III
1412, Grades: 6-12

Ever wonder why "some" math classes or math departments are rather homogenous? We will provide real examples of how we de-tracked students and teachers in our math department to provide access and equity for ALL.

***Kelsey Anselmi**, Crestdale Middle School*
***Lauren Baucom,** University of North Carolina at Greensboro*

THURSDAY WORKSHOPS & SESSIONS

EMPT Successfully Links High School to Post-Secondary Math!

11:30 AM - 12:15 PM Auditorium IV
1413, Grades: 9-12

Come see how the NC Early Math Placement Testing Program provides a free and eye-opening assessment of each participant's readiness for college-level math.

***Ellen Hilgoe**, NC Early Math Placement Testing Program*

Thursday 12:30 PM Workshops

After the NC Check-In. Using the NC Check-In data reports and suggested instructional strategies.

12:30 PM - 2:00 PM Imperial A
1500, Workshop, Grades: K-12

This presentation will discuss possible instructional strategies teachers can use that are informed by their NC Check-In data reports. Participants will experience firsthand how effective these strategies can be.

***Josh Griffin**, NCDPI*
***Lisa Ashe,** NCDPI*
***Denise Schulz**, NCDPI*
***Joseph Reaper**, NCDPI*

Give Me the Facts Please!

12:30 PM - 2:00 PM Colony B
1501, Workshop, PreK-2

Have you had it with timed tests? Do your students get lost in math because they can't add and subtract? Developing automaticity and fluency with single digit addition and subtraction is fundamental. Learn how to get your students to master the facts through a progression of games, strategies, and derived facts and work towards mastery.

***Melissa Manning**, Lenoir County Public Schools*

Building Mathematical Discourse in the Primary Classroom (K-2)

12:30 PM - 2:00 PM Blandwood
1502, Workshop, Grades: PreK-2

This learn, make, and practice session will focus on number talks, error analysis, and other methods to build mathematical discourse in the K-2 classroom.

***Holly McMurray**, Henderson County Public Schools*

Reaching Students Through Representations

12:30 PM - 2:00 PM Tanglewood
1503, Workshop, PreK-2

How can teachers use student work to influence instruction? Learn strategies to connect multiple representations of students' mathematical thinking to drive instructional decision making.

***Kelly Reigle**, Union County Public Schools*
***Danielle Long,** Union County Public Schools*

Shuffle that Playlist!

12:30 PM - 2:00 PM Pebble Beach
1504, Workshop, PreK-5

Top tracks fill your favorite playlists! In this workshop, experience how a blended math playlist increases collaboration, choice, accountability, and engagement leaving teaching stress-free!

***Wendy Lewis**, Iredell-Statesville Schools*
***Spring Roseman,** Rowan Salisbury Schools*
***Stephanie Bellotti**, Rowan Salisbury School*

Five Secrets to Higher Math EOG Scores

12:30 PM - 2:00 PM Carolina
1505, Workshop, Grades: PreK-5

Not all strategies for improving math achievement are obvious; those that are not, are valuable and shareable in a hands-on workshop.

***Ned McMillan**, Guilford County Schools*

Conceptual Development of Estimation: Making Connections Across the Curriculum

12:30 PM - 2:00 PM Augusta B
1506, Workshop, PreK-5

Participants will explore methods for developing estimation understanding and use across the elementary curriculum. Hands-on activities include whole number and early rational number sense and operations.

***Terry Rose**, Western Carolina University*

Teaching Fractions for Understanding

12:30 PM - 2:00 PM Colony A
1507, Workshop, Grades: 3-5

Classroom strategies and activities will be provided to help students develop a deep and flexible understanding of fractions that is aligned with the NC Standards.

***Donna Boyles**, Lees McRae College*
***Students from LMC,** Lees McRae College*

Creating Mathematical Writers

12:30 PM - 2:00 PM Imperial B
1508, Workshop, Grades: 3-5

Character, setting, and action aren't just words for literacy anymore! Join us for an action-packed adventure through the creation and execution of purposeful problems!

***Cortney Gordon**, Education Renovation*
***Betsy Dean,** Education Renovation*

Cultivating Coherence and Connection through Utilizing Mathematicsl Tasks in the Elementary Classroom

12:30 PM - 2:00 PM Imperial E
1509, Workshop, Grades: 3-5

This session will share how teachers can effectively identify and utilize cognitively demanding tasks in the classroom to develop the mathematical mindsets of students.

***Susan Price-Cole**,Stoney Creek Elementary/ Caswell County Schools/University of North Carolina*

...Involve me and I will learn

12:30 PM - 2:00 PM Tidwater A/B
1510, Workshop, Grades: 6-8

Come for inspiration and resources on student engagement. Lets work together to get our creative juices flowing and leave inspired to reach our students!

***Caroline Smith**, Gravelly Hill Middle School*

THURSDAY WORKSHOPS & SESSIONS

Dive Into the TI-84 CE updates

12:30 PM - 2:00 PM Imperial F
1512, Workshop, Grades: 6-12

The TI-84CE continues to have significant updates. Come explore the changes including the new piecewise template with an improved method for entering conditional statements. Q & A time will be provided.

***Rebecca Caison**, Greensboro College*

Breaking out of Math with Digital Breakouts

12:30 PM - 2:00 PM Imperial H
1513, Workshop, Grades: 6-12

Using digital break out activities to enhance your instruction and engage students.

***Matt Mcpherson**, North Davie Middle School*
***Debbie Whitehead,** North Davie Middle School*

Making Algebra Accessible with Algebra Tiles

12:30 PM - 2:00 PM Sandpiper
1514, Workshop, Grades: 6-12

Got at-risk Algebra students? Learn how to use Algebra Tiles as students progress from multi-digit multiplication to polynomial multiplication to factoring and completing the square.

***Emily Myers**, Beaufort County Schools*
***Doris Fletcher,** Beaufort County Schools*

Hands-on proof concepts: MIRA and other tools

12:30 PM - 2:00 PM Imperial C
1515, Workshop, Grades: 9-12

Your students use patty paper, MIRA device, and other tools to generate proof concepts for themselves. Sequence of lesson ideas leads to writing paragraph proofs.

***David Hardt**, Person County Schools*

If Your Students Can Code It, They Know It!

12:30 PM - 2:00 PM Imperial G
1516, Workshop, Grades: 9-12

Coding can cultivate creativity, produce problem solving, and inspire hard-to-motivate students. Coding the hailstone sequence is a fun, student-tested, practical extension of high school curriculum.

***Julie Riggins**,Winston-Salem/Forsyth County Schools*
***Adam Pennell,** Greensboro College*

Thursday 12:30 PM Sessions

Fostering a Collaborative Statewide Math Community

12:30 PM - 2:00 PM Auditorium I
1520, Grades: K-12

Come hear exciting updates from the North Carolina Collaborative for Mathematics Learning. In this session, we highlight and elicit feedback on co-designed resources supporting mathematics learning across NC.

***Emily Bryant**, UNC-Greensboro*
***Jared Webb,** UNC-Greensboro*
***Paul Wonsavage**, UNC-Greensboro*
***Holt Wilson**, UNC-Greensboro*

Considering Variability in the Math Curriculum

12:30 PM - 2:00 PM Morehead
1521, Grades: 6-12

Using open ended tasks in this session we will explore different types of variability and how they are measured aligned with the standards.

***Travis Weiland**,Appalachian State University*

Reflections on the 2018 AP Calculus Exams

12:30 PM - 2:00 PM Arrowhead A
1522, Grades: 9-12

The Chief Reader presents takeaways for teachers gleaned from experiences at this summer's AP Calculus grading.

***Stephen Davis**, Davidson College*

Closing the Gap with High Quality Math Instruction

12:30 PM - 2:00 PM Biltmore A
1523, Grades: 9-12

Using a High Quality Math Instruction definition based on research and alignment to an instructional framework, this session addresses teaching conceptually to close gaps. Experience using a vertical alignment tool, instructional routines, and meaningful tasks with activities from open education resources.

***Martha Ray**, Guilford County Schools*
***Eugene Grant,** Guilford County Schools*

Calendar Time

12:30 PM - 1:15 PM Cedar B
1530, Grades: PreK-2

Learn how to use calendar time to reinforce key objectives and enrich your curriculum. View samples in action. Leave with templates differentiated by grade level.

***Stacie Luckey**, Palisades Park Elementary/Charlotte Mecklenburg Schools*
***Holly Averette,** Palisades Park Elementary/Charlotte Mecklenburg Schools*

Hands-on and Self-Correcting Math Centers

12:30 PM - 1:15 PM Arrowhead B
1531, Grades: PreK-2

This is your opportunity to play with, and KEEP, hands-on and self-correcting materials that help K-5 students with Numeration, Algebra, Geometry & Measurement, and Probability and Statistics.

***Rich Stuart**, Learning Wrap-ups, Inc.*

THURSDAY WORKSHOPS & SESSIONS

Guided Math Practices You Can Use Tomorrow

12:30 PM - 1:15 PM Oak A
1532, Grades: PreK-2

Teachers will have a chance to explore best practices for structuring, planning, differentiation, and implementing guided math practices they can use tomorrow. Teachers will be provided templates, mock lessons, and view hands on materials used to create rigorous K-2 math environments.

***Colby Williams**, Guilford County Schools*
***Brittney Dennis,** Guilford County Schools*

Building a CGI Classroom & Why it Matters

12:30 PM - 1:15 PM Auditorium IV
1533, Grades: PreK-5

This session will showcase the effective practices within Cognitively Guided Instruction. A practicing teacher will share her journey, including resources, dos and don'ts, and lessons learned.

***Erin Hone**, Elon University*
***Lauren Barnes,** Guilford County Schools*

Tools For Teachers: 3rd Grade Standards and Resources

12:30 PM - 1:15 PM Auditorium III
1534, Grades: 3-5

The writers of the Tools for Teachers project will discuss resources to support instruction of the 2017 NC Standard Course of Study for Mathematics.

***Robin Hiatt**, Johnston County Public Schools*
***Leanne Daughtry,** Johnston County Public Schools*
***Meg McKee**, Buncombe County Schools*
***Kaneka Turner**, Mathematics Consultant*

Math! Math! Read All About It!

12:30 PM - 1:15 PM Cedar C
1535, Grades: 3-5

Participants will be introduced to numerous read-alouds that are written around a mathematical theme. Handouts containing standards-aligned activities and websites will be shared.

***Lesley Holley**, Martin County Schools*
***Donna Manning,** Martin County Schools*

Learning Centers for Middle Grades

12:30 PM - 1:15 PM Blue Ash
1536, Grades: 6-8

This session will be presented by two middle grades math teachers, one a former K-5 teacher. Together we have developed routines and procedures to help make planning centers for each unit more efficient for us as teachers and more meaningful for our students. Teaching through learning centers gives us time to work with students in small groups, focusing on more individualized needs. While teaching through centers is a natural process for many K-5 teachers, many middle grades teachers can't figure out how to make this model work for them. We have already helped guide teachers in our school through this process with great success.

***Julie Bacak**, Leland Middle School*
***Catherine Neely,** Leland Middle School*

Middle School Math–Success for All with Simulations!

12:30 PM - 1:15 PM Biltmore B
1537, Grades: 6-8

Varying abilities present instructional challenges. Some concepts are easily explained; others require multiple representations. Online simulations help teach challenging concepts with highly visual and interactive scenarios.

***Thom O'Brien**, ExploreLearning*

Two negatives don't always give you a positive!

12:30 PM - 1:15 PM Augusta A
1538, Grades: 6-8

Students frustrated that a negative times a negative is positive? Join us as we venture into solving operations with rational numbers using varying hands-on methods!

***Brittany Swinson**, Grifton School*
***Janet Drueschler,** Grifton School*

Getting LIT for Math

12:30 PM - 1:15 PM Colony C
1539, Grades: 6-8

Come get LIT for math. Learn literacy strategies to implement in the math class to improve math instruction.

***Felecia Young**, Independent*

This is Math in America: Small Tweaks that lead to BIG Change

12:30 PM - 1:15 PM Oak C
1540, Grades: 9-12

As math educators, we often leave the controversial conversations to the English and Social Studies departments. But why? Come discuss some small changes that allow students to amplify their voices as citizens and make impacts on their communities.

***Lauren Baucom**, UNC-Greensboro*

Mistakes to Understanding: Working with Radian and Degree Measure

12:30 PM - 1:15 PM Pinehurst
1541, Grades: 9-12

Learn about an unusual method of introducing radians in the classroom along with different strategies to get students to think critically through mistakes.

***Benjamin Estes**, Mooresville High School*
***Matthew Medlin,** Appalachian State University*

How does the work environment affect the overall rating of a job? An investigative approach to covariation and the line of best fit.

12:30 PM - 1:15 PM Oak B
1542, Grades: 9-12

Walk away with an investigative task to teach students about covariation and line of best fit using a free online tool and data set about jobs.

***Suzanne Jordan**, North Carolina State University*

THURSDAY WORKSHOPS & SESSIONS

Collaborative Design: Intro to Limits with Desmos!

12:30 PM - 1:15 PM Auditorium II
1543, Grades: 9-12

Intro to Limits with Desmos! Engage with the task and consider the ways teachers and teacher educators can support future teachers learning to design technology tasks.

***Allison McCulloch**, UNC Charlotte*
***Gayle Scott,** Charlotte Early Engineering College HS*
***Samantha Fitzgerald**, UNC Charlotte (Math Education Student)*
***Courtney Jones**, UNC Charlotte (Math Education Student)*

The Stock Market Game

12:30 PM - 1:15 PM Turnberry
1544, Grades: 9-12

What to do with $100,000? Invest it! Learn tips and tricks to easily implement this simulation in class while your students play the game.

***Amber Thomas**, NCCEE*

(verse, in) - Put the verse first!

12:30 PM - 1:15 PM Cedar A
1545, Grades: 9-12

Come explore how a "verse" approach, instead of a symbolic approach, to the inverse can be applied to solving equations, transformations, and finding the inverse.

***Luke Walsh**, Catawba Valley Cc*

Thursday 1:30 PM Keynote

"Why Do Rational Numbers Make Me Feel So Irrational?"

1:30 PM - 3:00 PM Guilford C
1600, **Keynote Speaker, Grades: 3-8**

Why does 0.2 x 0.2 = 0.04? And why do we "keep, change, flip" (or is it "change, keep, flip" or "flip, and you can keep the change") to divide fractions? We'll explore common challenges as well as strategies for helping students work with rational numbers with understanding and success.

***Julie McNamara**, California State University, East Bay*

Thursday 1:30 PM Sessions

The Power of Virtual Manipulatives

1:30 PM - 2:15 PM Auditorium IV
1602, Grades: PreK-5

Are virtual manipulatives as good as the real thing? Would you like to have an unlimited supply of manipulatives that your kids can use anywhere? Come learn the answers to these and many other questions about virtual manipulatives.

***Ryan Dougherty**, ETA hand2mind*

Tools for Teachers: Standards and Resources for Grade 5

1:30 PM - 2:15 PM Auditorium II
1603, Grades: 3-5

Do you still have questions about the 2017 NC Standard Course of Study for Mathematics and the resources that are available for support? Come meet the writers of the Tools for Teachers project and find out how to use the NC2ML instructional framework, the revised standards, and other resources to help you plan for instruction.

***Marta Garcia**,Tools for Teachers*
***Susan Copeland,** Tools for Teachers*
***Rebekah Lonon**, Tools for Teachers*
***Brandi Newell**, Tools for Teachers*

Teach Fractions with the help of Simulations!

1:30 PM - 2:15 PM Biltmore B
1604, Grades: 3-5

Would you rather have 2/3's or 3/'5's of a candy bar? Many struggle with fraction sense. Using interactive simulations support mastery for key fraction literacy.

***Thom O'Brien**, ExploreLearning*

10 Days to Multiplication Mastery

1:30 PM - 2:15 PM Arrowhead B
1605, Grades: 3-5

Learn Multiplication tables in 10 days with fun methods of practice and understanding the power of commutative properties.

***Rich Stuart**, Learning Wrap-ups, Inc*

Math Concept + Read-Alouds = Success

1:30 PM - 2:15 PM Oak A
1606, Grades: 3-5

Explore ways to incorporate math read-alouds and hands-on activities in your classroom. Inspire students to participate in rich number talks. Resources provided.

***Amy White**, Contentnea-Savannah School/Lenoir County*
***Sarah Stocks,** Contentnea-Savannah School/Lenoir County*

THURSDAY WORKSHOPS & SESSIONS

Games and Activities for Numerical Fluency

1:30 PM - 2:15 PM Colony C
1607, Grades: 6-8

A fast-paced, highly-motivating workshop designed to help teachers engage all students in the classroom experience. Games and activities help develop fluency and strategic thinking.

***Jim deBerjeois**,Big Ideas Learning*

A Learning Trajectory Analysis of Open Up

1:30 PM - 2:15 PM Pinehurst
1608, Grades: 6-8

Come see how the highest-rated middle grades mathematics curriculum on EdReports.org, Open Up, looks through the lens of learning trajectories.

***Michael Belcher**, North Carolina State University*
***Jere Confrey,** North Carolina State University*

Going Beyond the Formative

1:30 PM - 2:15 PM Cedar C
1609, Grades: 6-12

What process do you use to determine if students are prepared for unit assessments? Join us in a discussion of how to use instructional design concepts within your planning to break down objectives for classroom formative assessment.

***Mike Swinson**,Washington High School*
***Ryne Cooper,** West Iredell High School*

How to Grow Groups in the Math Classroom

1:30 PM - 2:15 PM Augusta A
1610, Grades: 6-12

Groups do not grow by accident, we facilitate their growth. Come learn strategies to grow your groups into high performing teams in the math classroom.

***Leigha Jordan**, Buncombe County Schools*
***Jessica Vernon,** Buncombe County Schools*

Building a Coherent Progression of Proof

1:30 PM - 2:15 PM Cedar A
1611, Grades: 9-12

Come see how my colleagues and I built success criteria and levels of mastery to help guide students through the difficult idea of proof.

***Britney Clubb**, Buncombe County Schools - Owen High School*

Engaging Students with Contextual Applications

1:30 PM - 2:15 PM Oak C
1612, Grades: 9-12

Do you use contextual applications from careers to motivate students? Come experience lessons that can be integrated into the high school and community college curriculum.

***Jay Martin**, Wake Technical CC*
***Carrie Hoffman,** Wake Technical CC*
***Tamara Ormandy**, Garner Magnet High School*

The Reality of Money Simulation

1:30 PM - 2:15 PM Turnberry
1613, Grades: 9-12

Discover how this hands-on, real world activity can be an asset to your school! Designed for grades 8-12, students make financial decisions about paying for housing, transportation and other monthly expenses as they are "transformed" into young adults with jobs and other responsibilities to manage. Students are exposed to various financial learning points such as the value of furthering their education after high school, the limiting effect bad credit has on their lifestyle choices and how "living within their means" allows them to save for their financial future. This interactive session will ignite your passion for financial literacy and experiential learning!

Keri Reid

Statistical Sparring: Using Media to Elicit Debate

1:30 PM - 2:15 PM Oak B
1614, Grades: 9-12

Using video, articles and popular media to foster debate, improve statistical language, and delve into real, messy data while stimulating interest and relevance in statistics.

***Nina Bailey**, University of North Carolina at Charlotte*

AMTE-NC Business Meeting

1:30 PM - 3:00 PM Blue Ash
1615, Grades: College & Univ.

Join us for the annual fall business meeting of the North Carolina chapter of the Association of Mathematics Teacher Educators (AMTE-NC)

***Temple Walkowiak**,North Carolina State University*

Thursday 2:30 PM Workshops

Math Madness!

2:30 PM - 4:00 PM Imperial C
1700, Workshop, PreK-2

Are you at a loss at how to conceptualize math learning in your classroom? Come and learn how to use the new frameworks, Tools 4 Teachers, and other conceptually based resources to enhance and energize your math block!

***Megan Lawson**, Pink Hill Elementary School*

Teaching Math with the LEGO Brick K-2

2:30 PM - 4:00 PM Colony A
1701, Workshop, Grades: PreK-2

This hands-on workshop will allow participants to bring the procedural and conceptual understanding of math together using LEGO bricks to model math concepts for young learners.

***Shirley Disseler**, High Point University*

THURSDAY WORKSHOPS & SESSIONS

Math and Reading Go Together Like PB&J

2:30 PM - 4:00 PM Imperial F
1702, Workshop, Grades: PreK-5

Discover how to use literacy strategies and children's books to increase your students' mathematical understanding! Your mathematicians and your readers will benefit from this session.

Mallory Hill*,J.H. Gunn Elementary School - Charlotte-Mecklenburg Schools*
Rebekah Lonon, *Piney Grove Elementary School - Charlotte-Mecklenburg Schools*

Unlocking the Power of the Base 10 System

2:30 PM - 4:00 PM Pebble Beach
1703, Workshop, Grades: PreK-5

Learn the one key change you need to make to enable students to think flexibly and reason using the structure of our number system!

Jenny Ainslie*, Wake County Public Schools*
Stephanie Lachmann, *Wake County Public Schools*

Increasing Engagement through Collaboration and Rich-Problem Solving

2:30 PM - 4:00 PM Augusta B
1704, Workshop, PreK-5

Are you looking for ways to increase student engagement and collaboration in your math classroom? Are you frustrated with students not participating, while the same students are always coming up with the solutions? This session focuses on fostering deep mathematical thinking in the PreK-5 classroom through collaborative problem-solving, discourse, and engagement in the mathematical practices. Leave this session with a bank of tools and strategies to promote collaboration and engagement with minimal prep time!

Lauren Stott*, Big Ideas Learning*

Tools for Teachers: Standards and Resources for Grade 4

2:30 PM - 4:00 PM Morehead
1705, Workshop, Grades: 3-5

Do you still have questions about the 2017 NC Standard Course of Study for Mathematics and the resources available for support? Come meet the writers of the Tools for Teachers project and find out how to use the NC2ML instructional framework, the revised standards, and other resources to help you plan for instruction.

Deanna Wiles*, Randolph County School System*
Ana Floyd, *Randolph County Schools*

All Hands On Deck

2:30 PM - 4:00 PM Sandpiper
1706, Workshop, Grades: 305

Who knew playing with cards could be this much fun? Come prepared to play easily differentiated games that build concrete math skills and student success.

Stephanie Bainbridge*, Box Cars and One Eyed Jacks*

Selecting and Sequencing Student Strategies for Whole-Class Discussions

2:30 PM - 4:00 PM Imperial A
1707, Workshop, Grades: 3-5

How do you select and sequence strategies for whole-class discussions? Using video and written work, we will explore criteria teachers can use for these practices.

Amy Hewitt*, The University of North Carolina at Greensboro*
Vicki Jacobs, *The University of North Carolina at Greensboro*

Multiple Ways to Multiply

2:30 PM - 4:00 PM Tidewater A/B
1708, Workshop, Grades: 6-8

Engage students in computation that frees them of traditional methods. You'll ask, "Why didn't I learn like this?"

Eric M. O'Brien*, Bellmore (Retired)*

Cultivating Connections with Mathematical Modeling

2:30 PM - 4:00 PM Carolina
1709, Workshop, Grades: 6-8

Students make sense of mathematics by developing mathematical models that solve problems. Rich contexts provide opportunities to develop models from various strands, creating opportunities to make connections.

Ron Preston *,East Carolina University*

Uncovering & Disbarring Misconceptions in Grades 6-8

2:30 PM - 4:00 PM Imperial B
1710, Workshop, Grades: 6-8

This workshop will provide participants opportunities to uncover what the most common misconceptions are for students in mathematics grades 6-8.

Heather Thomas*, National Training Network*
Nicole Beck, *National Training Network*

Math Mindsets and Math Standards - Working Together

2:30 PM - 4:00 PM Blandwood
1711, Workshop, Grades: 6-12

How do we teach mathematical growth mindsets and NC Math Standards at the same time? Explore strategies for integrating mathematical mindsets daily in your class!

Rob Leichner*,Charlotte-Mecklenburg Schools*

Planning for Effective Instruction

2:30 PM - 4:00 PM Tanglewood
1712, Workshop, Grades: 6-12

Explore a variety of strategies that make efficient use of instructional time, promote differentiated instruction, and actively engage students while developing a growth mindset.

Joy McCormick*, Rockingham County Schools*
Renee Gibbs, *Rockingham County Schools*

THURSDAY WORKSHOPS & SESSIONS

ABCs of Effective Teaching

2:30 PM - 4:00 PM Imperial E
1713, Workshop, Grades: 9-12

Two veteran Math teachers will review practical tips to help teachers maintain balance and rigor in their classroom. Session will be geared toward Beginning and Lateral Entry teachers, but all are welcome.

***Jametra Hinton**, M&M Educational Group*
***Mariama Moody,** M&M Educational Group*

Modeling Geometry in Math 3

2:30 PM - 4:00 PM Imperial G
1714, Workshop, Grades: 9-12

Explore a series of lessons designed to address the G-GMD and G-MG standards in Math 3. This session will include access to all of the lessons, resources, and assessments.

***Karen McPherson**, Buncombe County Schools*

Your Credit Score Cost You Money?

2:30 PM - 4:00 PM Imperial H
1715, Workshop, Grades: 9-12

How does your credit score cost you money? Join this interactive session, find out why and gain access to hundreds of lessons at no cost.

***Amber Thomas**, NCCEE*

Thursday 2:30 PM Sessions

College Student Understanding of Fractions

2:30 PM - 4:00 PM Augusta A
1720, Grades: K-12

We will consider recent findings of two research projects regarding college students' understanding of fraction concepts and operations and consider means to remedy incomplete ideas.

***Michael Bosse**, Appalachian State University*
***John Sevier,** Appalachian State University*
***Ashley Demarte**, Appalachian State University*
***Joe Boyette**, Appalachian State University*

Something to Talk About

2:30 PM - 4:00 PM Arrowhead A
1721, PreK-5

In this session, participants will learn about the importance of using engaging math tasks for students to build a strong foundation of problem solving skills. Participants will be challenged to think about "who" is doing the work in our mathematics classrooms and will learn about the importance of dialogue in our classrooms.

***Brian Bettis**, Watauga County Schools*
***Tamara Stamey,** Watauga County Schools*
***Stephen Martin**, Watauga County Schools*
***Meredith Jones**, Watauga County Schools*

Global Education in a Secondary Math Classroom

2:30 PM - 4:00 PM Oak B
1722, Grades: 9-12

Come see tips and ideas for integrating global education into a 9-12 math class, including lesson ideas, projects, and information about global ed PD & NC Global Educator Digital Badge.

***Stephanie Morgan**, Haywood County*

Online Calculator in NCTest

2:30 PM - 3:15 PM Auditorium III
1725, Grades: K-12

This presentation will highlight the new calculator embedded within the NCTest platform for the online administrations of the EOGs, EOCs and NCFEs. Participants will also explore free resources available to teachers that can help them implement this calculator in their classroom.

***Josh Griffin**, NCDPI*
***Lauren Baucom,** UNCG*

Fascinating 3-D Geometric Figures for Students K-12

2:30 PM - 3:15 PM Colony C
1726, Grades: K-12

Students and teachers of all ages will be fascinated by a great variety of 3-D geometric figures that are visually interesting and mathematically challenging.

***Randy Harter**, Retired: Buncombe County Schools*
***Carey Kytta**, Buncombe County Schools*

Learn what it's like to teach around the World

2:30 PM - 3:15 PM Cedar A
1727, Grades: K-12

Learn how you can spend a week during your summer with teachers from around the US, teaching in Nepal, Kenya, Guatemala, Ecuador, Belize, and Galapagos.

***Chadd McGlone**, Teachers2Teachers Global*

Tools for Teachers: Kindergarten Standards and Resources

2:30 PM - 3:15 PM Auditorium II
1728, Grades: PreK-2

Meet writers of the Tools for Teachers project, and discover resources to support instruction of the 2017 NC Standard Course of Study for Mathematics.

***Dawne Coker**, Cumberland County Schools*
***Lynne Allen,** Wake County Schools*
***Leigh Belford**, East Carolina University*
***Carol Midgett**, Independent Consultant*

Exploring Math Through Literature

2:30 PM - 3:15 PM Auditorium IV
1729, Grades: PreK-5

We will provide book ideas and lessons through children's literature and give examples on how to incorporate into instruction.

***Kaycee Thomas**, Salem College*
***Erin Raines,** Salem College*

Mathematical Coherence: Area Model for Multiplication

2:30 PM - 3:15 PM Auditorium I
1730, Grades: 3-5

The area model of multiplication is a perfect example of vertical coherence within mathematics learning. Experience how it builds conceptual knowledge throughout grades 3-6.

***Thomas Coleman**, North Carolina A&T State University*

THURSDAY WORKSHOPS & SESSIONS

Amplify Fractions

2:30 PM - 3:15 PM Pinehurst
1731, Grades: 3-5

Amplify Fractions: the supplemental program laser-focused on helping students better understand fractions through interactive, animated stories and personalized feedback from a patented digital tutor.

***Drew Corley**, Amplify Education, Inc.*

Quick and Easy Number Talks

2:30 PM - 3:15 PM Oak A
1732, Grades: 3-5

In this session, we will provide you with examples and resources for number talks for grades 3-5. We will demonstrate what number talks should look like and where you can find resources to make them an essential, 8-10 minute part of your math block!!

***Anna Hughes**, Union Academy*
***Elizabeth Tucker,** Union Academy*

So many needs? So little time?

2:30 PM - 3:15 PM Turnberry
1733, Grades: 3-5

Practical steps so no student is left behind. Come join us for a discussion on diving into data to form purposeful and fluid instructional groups.

***Nicole Morgan**, Fred L. Wilson Elementary School-- Kannapolis City Schools*
***Lauren Dobbin,** Fred L. Wilson Elementary School-- Kannapolis City Schools*
***Madison Hipp**, Fred L. Wilson Elementary School-- Kannapolis City Schools*
***Trisha Hill**, Fred L. Wilson Elementary School-- Kannapolis City Schools*

Connections in Co-Teaching

2:30 PM - 3:15 PM Biltmore B
1735, Grades: 6-12

This session will provide easy to implement strategies for co-teaching scenarios that are difficult or ever changing. Presentation will touch on grading, classroom routines and styles of co-teaching.

***Aymee Tiffany**, Moore County Schools*

Supporting English Language Learners with Mathematical Language Routines

2:30 PM - 3:15 PM Biltmore A
1736, Grades: 6-12

Let's examine adaptable language routines that emphasize the use of meaningful and purposeful language to support students in improving their English and disciplinary language.

***Jessica Vernon**, Buncombe County Schools*
***Leigha Jordan,** Buncombe County Schools*

Math Digital Escape Rooms

2:30 PM - 3:15 PM Arrowhead B
1737, Grades: 9-12

Experience a digital escape room math style while working together to find clues, solve puzzles and have fun! Take these ready-made activities back to your classroom on Monday! Bring your computer or iPad to join the fun!

***Kayla Chandler**, Innovation Early College High School*
***Heather Davis,** Greene Early College High School*
***Maggie Nesbitt**, Greene Early College High School/Greene County Schools*

Projects Galore in High School Math!

2:30 PM - 3:15 PM Oak C
1738, Grades: 9-12

Ever wonder how roller coasters incorporate math? Or how cities can be created using angle relationships? Come see how these projects and others can be incorporated into Math 2, Pre-Calculus, and Calculus. Handouts will be shared.

***Sarah Marsh**, Pitt County Schools*

The value of a non-AP Calculus course

2:30 PM - 3:15 PM Cedar C
1739, Grades: 9-12

Calculus changes the way we look at stars, cells and stocks. When we emphasize ideas and applications, even less mathematically inclined students find Calculus interesting.

***Barbara Soloman**, Raleigh Charter High School*
Raleigh Charter High School

Thursday 3:30 PM Sessions

Ideas from Future Teachers of NC: A Poster Session

3:30 PM - 4:15 PM Blue Ash
1801, Grades: K-12

Visit this poster session to see innovative instructional ideas of future NC teachers!

***Temple Walkowiak**, North Carolina State University*

The Presidential Awards for Excellence in Mathematics and Science Teaching

3:30 PM - 4:15 PM Auditorium I
1802, Grades: K-12

The Presidential Award for Excellence in Mathematics and Science Teaching (PAEMST) is the highest honor bestowed by the United States government specifically for K-12 mathematics and science (including computer science) teaching.

Anyone--principals, teachers, parents, students, or members of the general public--may nominate exceptional mathematics, science, engineering or computer science teachers who are currently teaching grades 7–12 for the 2018-2019 award year. Come to this session to learn more about this award and the application process!

***Joe Reaper**, NCDPI*

THURSDAY WORKSHOPS & SESSIONS

From Modeling to Algorithms: Supporting Teachers in Building Students' Understanding of Operations with Rational Numbers, 4-8

3:30 PM - 4:15 PM Auditorium II
1803, Grades: 3-5

We will highlight the models for arithmetic with decimals and fractions that support students in making sense of these operations emphasizing conceptual understanding, procedural fluency, and application.

***Katie Mawhinney**, Appalachian State University*
***Kayonna Pitchford,** UNC Pembroke*

The Fundamentals of Fractions

3:30 PM - 4:15 PM Auditorium III
1804, Grades: 3-5

We will consider the meaning of fractions through representation and equal sharing problems. Let's help students access the big ideas about fractions in order to reduce anxiety and increase conceptual understanding!

***Meredith Stanley**, Independent*
Marta Garcia,

Routines to Foster Mathematical Discourse

3:30 PM - 4:15 PM Cedar B
1806, Grades: 6-8

In this session, the presenters will share routines they have successfully incorporated into their classrooms to get students talking about math. Routines include number talks for middle grades, "Which One Doesn't Belong," visual patterns, and "Would You Rather Math." These routines have improved students' engagement, critical thinking, and content vocabulary.

***Catherine Neely**, Leland Middle School*
***Julie Bacak,** Leland Middle School*

MASH- "mansion, apartment, shack or house"; A middle school game of life's big choices!

3:30 PM - 4:15 PM Auditorium IV
1807, Grades: 6-8

A project that uses student interests to choose a career, salary, home and vehicle. An authentic way to teach percentages and simple interest.

***Renee Synan**, Morehead City Middle School*
***Jason Holland,** Movement Mortgage*

Using Data to Promote Discourse

3:30 PM - 4:15 PM Cedar A
1808, Grades: 6-8

Your students just completed a test, now what? We share productive ways of engaging students in discussions of data, with examples from actual classrooms.

***Meetal Shah**, NC State University*

The American Mathematics Competitions: Equal Access in NC?

3:30 PM - 4:15 PM Colony C
1809, Grades: 6-12

Your students deserve the opportunity and challenge of the American Mathematics Competitions. Come and learn how you can do more for students in your community.

***Randy Harter**, Retired from Buncombe County Schools*

***Carey Kytta**, Buncombe County Schools*

Inclusion Institute

3:30 PM - 4:15 PM Biltmore B
1810, Grades: 6-12

Fast-paced, round table discussions facilitated by a teacher who has been on both sides of the co-teaching relationship. Discussion will revolve around strategies to improve co-teaching.

***Aymee Tiffany**, Moore County Schools*

Building the Practice of Gradual Reveal into our Instruction to Increase Motivation and Engagment

3:30 PM - 4:15 PM Imperial D
1814, Grades: 6-12

Teachers have known for years the power of gradual reveal when teaching reading. It's time to apply this powerful strategy to mathematics. In this workshop, we'll look at using the gradual reveal strategy on word problems, data tables, graphs, patterns and geometric figures – all in support of generating higher levels of motivation and student engagement.

***Steve Leinwald**, AIR*

2018 A.P. Calculus Exam

3:30 PM - 4:15 PM Pinehurst
1811, Grades: 9-12

We will discuss the questions and grading rubrics for the exam and how to better prepare your students for the next A.P. Calculus Exam.

***Ken Collins**, Charlotte Latin School*

#STEM#LikeAGirl

3:30 PM - 4:15 PM Oak C
1812, Grades: 9-12

We'll explore reasons why girls stop pursuing higher level math, as well as, strategies for encouraging girls to consider math as a viable path.

***Ashley Loftis**, North Carolina School of Science and Mathematics*

Pre-calculus in a Nutshell: From the NCCCS Perspective

3:30 PM - 4:15 PM Turnberry
1813, Grades: 9-12

A discussion on what pre-calculus looks like in high school vs. community college.

***Ethan Smith**,Catawba Valley Community College*

FRIDAY AT A GLANCE

Friday 8:30 AM Keynote

2100	Math Facts 2.0: Moving Beyond Memorization to Connect Fluency to Understanding – Susan O'Connell	Imperial D	3 - 5
2101	PreK-5- STEM, STEAM, STREAM. So Many Acronyms- Which One is For You?	Auditorium II	PrK - 5
2102	Using Assessments to Drive Our Instruction	Grandover	PrK - 5

Friday 8:30 AM Workshops

2103	Roundtable Discussion & Networking for Math Leaders	Tanglewood	K - 12
2104	Let Go of My LEGOs: Using LEGOs to Teach the Standards	Imperial B	PrK - 5
2105	Strategies and Activities for the Math Classroom	Imperial F	PrK - 5
2106	Multiple Representations in Elementary Math	Tidewater A/B	PrK - 5
2107	Creativity through Making in Mathematics	Augusta B	PrK - 5
2108	Rolling On Fact Fluency	Sandpiper	3 - 5
2109	Fact Fluency and Effective Practice	Imperial A	3 - 5
2110	Making Music from Fractions - Pentatonic Pan Pipes	Morehead	3 - 5
2111	What's My Interest?	Morehead	3 - 5
2112	Vertical Alignment Across the Grades with TI-Nspire	Imperial C	6 - 8
2113	Learning Goals: Roadmaps to Equity and Success	Blandwood	6 - 8
2114	Making Algebra Child's Play	Colony B	6 - 8
2115	Teaching Math with a TI-84: Beyond the Basics	Imperial E	9 - 12
2116	Crashing on Purpose	Imperial G	9 - 12
2117	Customizing Math Instruction to Meet the Needs of All Learners	Carolina	9 - 12
2118	Round-Table: Collaborating Making a Statistics Term Project Successful	Colony A	College

Friday 8:30 AM Sessions

2119	Number Line to 10,000,000 and Other Math Manipulatives	Pebble Beach	3 - 5
2120	Shake, Rattle, and Roll: Using Games in Math Workshop	Oak B	3 - 5
2121	Humorous Algebra - The MVP Transition Years	Oak A	9 - 12
2122	Cultivating Can Do Math Attitudes in Kindergarten	Cedar B	PrK - 2
2123	Subitizing- Moving Beyond Counting	Cedar A	PrK - 2
2125	What's the Problem?	Arrowhead A	3 - 5
2126	NCDPI: 3-5 Updates	Auditorium III	3 - 5
2127	Connecting Children's Literature w/Middle Grades Mathematics	Colony C	6 - 8
2128	Deepening Conceptual Understanding and Making Connections Across Grade Levels (6-8)	Blue Ash	6 - 8
2129	Making Connections: Numeracy & NC History	Biltmore B	6 - 8
2130	New Homes Coming Soon! An Engineering and Mathematics PBL	Arrowhead B	6 - 8
2137	Wanna Create a STEM/STEAM Club but Don't Know How?	Auditorium IV	6 - 8
2131	Web 2.0 Teaching Tools	Cedar C	6 - 12
2132	Engage. Elevate. Enhance. It's as Easy as 1-2-3!	Turnberry	6 - 12
2133	That Dreaded Parent Conference Ins & Outs	Biltmore A	6 - 12
2134	It's in the cards	Oak C	9 - 12
2135	College Math	Augusta A	9 - 12
2136	The Extra-Sensory Perception Gap	Pinehurst	9 – 12
2137	10 Math Activities to start your own STEM/STEAM Club	Auditorium IV	6 - 8

FRIDAY AT A GLANCE

Friday 9:30 AM Sessions

2200	Making Thinking Visible in Mathematics	Auditorium IV	K - 12
2201	Getting the Facts about Fluency	Auditorium I	PreK - 2
2202	Curriculum Pathways ® Crio: Imagine. Create. Inspire	Turnberry	K - 12
2203	Unlocking Literature in the K-2 Mathematics Classroom	Pinehurst	PreK - 2
2204	Taking the “Problem” Out of Word Problems	Oak C	PreK - 5
2205	An Afrocentric Approach to Elementary Mathematics	Cedar B	3 - 5
2215	What’s the Problem?	Arrowhead B	3 - 5
2206	Total Participation Techniques: Making Every Child an Active Learner	Colony C	6 - 8
2207	Anchors & Bridges: Teaching Math with Contexts	Cedar C	6 - 8
2208	Making Connections: Numeracy & NC History	Biltmore B	6 - 8
2209	MATH Walk Activities at AppState	Arrowhead A	6 - 12
2210	Watch your language!	Biltmore A	6 - 12
2211	Deepening Conceptual Understanding and Making Connections Across Grade Levels (9-12)	Blue Ash	9 - 12
2212	A Precalculus/Calculus Teacher Reads the Newspaper	Augusta A	9 - 12
2213	Problem Posing in a Developmental Math Classroom	Cedar A	College
2214	NCDPI: 9-12 Updates	Auditorium III	9 - 12

Friday 10:30 AM Workshops

2301	FADS for Math - Facilitating Academic Discourse Strategies for Math	Colony A	K - 12
2302	Building a STEM Foundation with Unit Blocks	Sandpiper	PreK - 2
2303	Math for Makers	Colony B	PreK - 5
2304	Math Clubs - Be A Part of the Fun!	Tidewater A/B	PreK - 5
2305	Walk the Number Line for Research Based Results	Imperial A	3 - 5
2306	What's Your Image? Transformations in the Coordinate Plane	Imperial E	6 - 8
2307	Building Conceptual Understanding through Algebra Tiles	Imperial B	6 - 8
2308	Developing Understanding of Ratios & Proportions	Augusta B	6 - 8
2309	Math/Science Integration for Earth’s Sake	Imperial H	6 - 8
2310	Improve Your Math with Three Squares A Day	Pebble Beach	6 - 12
2311	Understanding Teaching Strategies	Imperial C	9 - 12
2312	Engaging Technology-Based Tasks For Your Classroom	Tanglewood	9 - 12
2313	What’s the Problem? Designing Cognitively Demanding Tasks	Imperial G	9 - 12
2314	Make the Ambiguous Case Unambiguous	Blandwood	9 - 12
2315	The "Why" Behind the Slip-Slide Factoring Method	Morehead	9 - 12
2316	Using Problem Based Tasks to Build Conceptual Understanding	Carolina	9 - 12

Friday 10:30 AM Sessions

2317	Dive into Data	Oak A	3 - 5
2318	Digital Technology: Activities and Ideas for your Math Classroom	Imperial F	6 - 12
2319	Do Your Classroom Management Strategies Add Up?	Oak B	9 - 12
2320	NCDPI Testing Updates	Imperial D	K - 12
2321	Unitizing: The Key to Understanding Numbers	Auditorium II	PreK - 2
2322	Early Math in North Carolina	Auditorium I	PreK - 2
2323	Planning Data Driven Instruction with Standards and Assessments	Pinehurst	
2324	Using Close Reading Strategies to Solve Multi-Step Math Problems	Turnberry	3 - 5
2326	Singapore Math for Beginners	Arrowhead B	3 - 5
2327	Modeling Addition and Subtraction of Integers	Auditorium III	6 - 8
2328	Knowing how to help your students with geometric similarity	Cedar A	6 - 8
2329	The Stock Market Game	Arrowhead A	6 - 8
2330	Number Talks in High School: Gateway to Discourse	Blue Ash	6 - 12
2331	Math and Music: Sharing Beautiful Connections	Oak C	6 - 12
2332	Statistics and Probability Palooza	Cedar B	9 - 12
2333	Beyond Riemann Sums & Euler's Method	Augusta A	9 - 12
2334	An Approach to Math Readiness for STEM Programs	Biltmore B	College
2335	PLT Meetings in Preservice Teacher Preparation	Biltmore A	College

FRIDAY AT A GLANCE

Friday 11:30 AM Keynote

2400	Greater than the sum of its parts: STEAM, student/ teacher empowerment,– Andres Ruzo	Grandover	Keynote
2401	Supporting Mathematics Interactions in Home Environments, – Sandra Linder	Auditorium I	PreK - 2

Friday 11:30 AM Sessions

2402	EVAAS: The Basics	Colony C	K - 12
2403	Math Blended Learning	Auditorium IV	K - 12
2404	Statistics in Action from 5 to 95!	Cedar A	K - 12
2405	Vertical Non-permanent Surfaces for the Win	Turnberry	K - 12
2406	Best Practices That Make You A Better Teacher Tomorrow	Cedar B	3 - 5
2407	The Stock Market Game	Arrowhead A	3 - 5
2408	Measurement Olympics	Biltmore B	6 - 8
2409	Take 5: Physical Activity Breaks in Math Classes	Cedar C	6 - 8
2410	NCDPI: 6-8 Updates	Auditorium III	6 - 8
2411	Online Treasure Trove of Mathematics Resources	Biltmore A	6 - 12
2412	Do More With Desmos, Exploring Activity Builder	Auditorium II	6 - 12
2413	Understanding Probability Literacy of High School Students	Oak C	9 - 12
2414	Interactive Notebooks for High School Math	Blue Ash	9 - 12
2415	Engagement for Student Success	Augusta A	College

Friday 12:30 PM Keynote

2501	Making Sense of Numbers Through Models, Discussion, and Discovery – Susan O'Connell	Imperial D	K - 2

Friday 12:30 PM Workshops

2503	Bringing mathematics alive and making it fun.	Colony B	K - 12
2504	Engage, Explore, and Enrich Elementary Mathematics with 3 Act Tasks	Morehead	PrK - 2
2505	Not Your Average Reteach	Sandpiper	PrK - 5
2506	Math Without Numbers?! Are You Crazy?!	Augusta B	PrK - 5
2507	Connecting with Math Through Children's Literature	Colony A	PrK - 5
2508	Decimals: Combining Place Value and Fractions	Imperial C	3 - 5
2509	Action, Action We Want Fractions!	Carolina	3 - 5
2510	"It's Frogs, It's Planes, It's Data!"	Imperial G	6 - 8
2511	From Fractions and Cuisenaire rods to Bar Models and Equations	Arrowhead A	6 - 8
2512	The Ice Cream Stand	Imperial H	6 - 8
2513	Pattern Talks: Connecting Visuals to Expressions	Tanglewood	6 - 12
2514	3 Part Task: Informal Inferential Reasoning	Blandwood	6 - 12
2515	Planning for Effective Instruction	Imperial B	6 - 12
2516	The Power of Powers	Pebble Beach	6 - 12
2517	Using a Virtual World in an Introductory Statistics Class	Tidewater A/B	College

Friday 12:30 PM Sessions

2518	African American Male Math Achievement Toolkit	Oak A	K - 12
2519	Kinesthetic Strategies to Improve Math Outcomes	Biltmore B	K - 12
2520	Infusing Intellectual Standards for Critical and Creative Thinking into Your Math Classroom	Imperial A	6 - 12
2521	Equity & Access: Using Tasks to Reach all Students	Imperial F	6 - 12
2522	Putting the I (Content Teacher) and U (EC Teacher) Back into Inclusion	Biltmore A	6 - 12
2523	EVAAS: Insightful Uses for Classroom Teachers	Colony C	K - 12
2524	Co-Constructing Statewide K-8 Curriculum Frameworks	Auditorium III	K - 12
2525	Healthy Math	Arrowhead B	PrK -5
2526	Putting the Pieces Together	Auditorium IV	3 - 5
2527	Statistics and Probability in the Elementary Classroom	Cedar A	3 - 5
2528	Go Team! Cooperative Games and Strategies	Turnberry	3 - 5
2529	Task Design for Statistical Habits of Mind	Blue Ash	6 - 12
2530	Going Beyond the Grade	Cedar B	6 - 12
2531	Lesson Study: Professional Development Within Your Own Department	Pinehurst	6 - 12

2532	Stories from the History of Math	Oak B	6 - 12
2533	Assessment with Desmos!	Auditorium II	9 - 12
2534	Discrete Math and How to Relate it to our students	Cedar C	9 - 12
2535	“Genius and Tragedy: The Life and Mathematics of Évariste Galois”	Augusta A	College

Friday 1:30 PM Sessions

2601	EVAAS Data and Teaching Teams	Colony C	K - 12
2602	Developing Flexibility in Mathematics: Incorporating Number Talks in the K-12 Classroom	Blue Ash	K - 12
2603	Tools for Teachers: Standards and Resources for Grade 1	Auditorium II	PrK - 2
2604	Are We Making Math Scary?	Augusta A	PrK - 5
2605	K-5 Instructional Frameworks Update	Auditorium IV	PrK - 5
2606	Elementary AP?	Cedar B	3 - 5
2607	Instructional Coaching and Co-teaching in Elementary Math Classrooms:	Auditorium 1	3 - 5
2608	Ours is to question why: No more keep change flip	Oak C	6 - 8
2609	6-8 Instructional Frameworks Update	Auditorium III	6 - 8
2610	Easy Jeopardy Fun	Cedar A	9 - 12
2611	Projects For Discrete Math	Cedar C	9 - 12
2612	Reality Math	Arrowhead B	9 - 12
2613	Building Math Positive Classrooms	Oak B	9 - 12

FRIDAY WORKSHOPS & SESSIONS

Friday 8:30 AM Keynotes

Math Facts 2.0: Moving Beyond Memorization to Connect Fluency to Understanding

8:30 AM - 10:00 AM Imperial D
2100, **Keynote Speaker, Grades: 3-5**

Mastery of multiplication and division facts is not about fluency alone. Related standards challenge our students to understand operations, interpret equations, apply properties, understand inverses, and prove equality. Discover simple tasks and investigations that blend these skills into your math facts instruction to deepen students' understanding and move them toward fact fluency. Gather a wealth of teaching strategies and fun classroom tasks that support both fact fluency and conceptual understanding.

***Susan O'Connell**, Quality Teacher Development*

PreK-5- STEM, STEAM, STREAM. So Many Acronyms- Which One is For You?

8:30 AM - 10:00 AM Auditorium II
2101, **Keynote Speaker, Grades: PreK-5**

This session focuses on distinguishing between educational terms that are commonly used (and sometimes used incorrectly) in PreK-5th grade. What does this project approach look like? How is it different from a problem-based approach? How can we use these approaches to integrate STEM or STEAM in PreK-5th grade classrooms? Participants will examine the differences between these terms and engage in tasks that will show how to integrate these practices effectively in classroom settings.

***Sandra Linder**, Clemson University*

Using Assessments to Drive Our Instruction

8:30 AM - 10:00 AM Grandover
2102, **Keynote Speaker, Grades: PreK-5**

We often use assessments to find out if students can get right answers. But what we need to know is what mathematical concepts students understand and what they still need to learn. We can then use the assessment data to provide the most effective instruction that meets the needs of all students and provides the foundation for future success.

***Kathy Richardson**, Math Perspectives Teacher Development Center*

Friday 8:30 Workshops

Roundtable Discussion & Networking for Math Leaders

8:30 AM - 10:00 AM Tanglewood
2103, Workshop, Grades: K-12

Lead Teachers, Coaches, and Math Specialists – share ideas and resources, ask questions, and make connections. Give input on discussion topics by completing this survey: http://bit.ly/RoundtableNCCTM

***Alisan Royster**, Concord Middle School / Cabarrus County Schools*

Let Go of My LEGOs: Using LEGOs to Teach the Standards

8:30 AM - 10:00 AM Imperial B
2104, Workshop, Grades: PreK-5

LEGOs are more than just building toys. They can be used to enhance a student's confidence, vocabulary, comprehension, mathematical understanding, critical thinking skills, and more. Join me in this hands-on session to learn how to integrate LEGOs and STEM to teach the standards. Grant-funding opportunities will also be shared.

***Tomika Altman-Lewis**, Seawell Elementary School/Chapel Hill-Carrboro City Schools*

Strategies and Activities for the Math Classroom

8:30 AM - 10:00 AM Imperial F
2105, Workshop, PreK-5

Participants will use manipulative materials and activities designed for the K-6 classroom. Handouts will be provided.

***Shirley Disseler**, High Point University*

Multiple Representations in Elementary Math

8:30 AM - 10:00 AM Tidewater A/B
2106, Workshop, PreK-5

Varied representations are essential to deep learning. Explore multiple representations appropriate to elementary math and strategies for extending and connecting those representations through the grades.

***Sara Moore**, ORIGO Education*

Creativity through Making in Mathematics

8:30 AM - 10:00 AM Augusta B
2107, Workshop, Grades: PreK-5

Looking for ways to bring creativity and enjoyment of mathematics back into your classroom? Engage in student-centered math stations incorporating "making" and leave with resources!

***Montana Smithey**, UNC-Greensboro*
***Senior Cohort of Preservice Teachers**UNC-Greensboro*

Rolling On Fact Fluency

8:30 AM - 10:00 AM Sandpiper
2108, Workshop, Grades: 3-5

Rock and roll! Come ready to play dice games that can be used to teach basic facts, operations, number sense and place value.

***Stephanie Bainbridge**, Box Cars and One Eyed Jacks*

FRIDAY WORKSHOPS & SESSIONS

Fact Fluency and Effective Practice

8:30 AM - 10:00 AM Imperial A
2109, Workshop, Grades: 3-5

This session focuses on developing basic fact proficiency by teaching the understanding of the operations, teaching computation strategies, and practicing with fun games for all elementary grades.

***Ruth Harbin Miles**, Mary Baldwin University*

Making Music from Fractions - Pentatonic Pan Pipes

8:30 AM - 10:00 AM Morehead
2110, Workshop, Grades: 3-5

Come use fraction operations to develop the pentatonic scale described by Pythagoras, make pan pipes from drinking straws, and learn to play some simple tunes.

***Kathy Jaqua**, Western Carolina University*

What's My Interest?

8:30 AM - 10:00 AM Morehead
2111, Workshop, Grades: 3-5

How can your money work for you? Join this interactive session, learn all about interest and gain access to hundreds of lessons at no cost.

***Amber Thomas**, North Carolina Council on Economic Education*

Vertical Alignment Across the Grades with TI-Nspire

8:30 AM - 10:00 AM Imperial C
2112, Workshop, Grades: 6-8

Experience TI-Nspire activities starting at the middle grade level and increasing in mathematical intensity through high school. You will receive several TI-Nspire classroom activities.

***Jane Damaske**, Teachers Teaching with Technology*

Learning Goals: Roadmaps to Equity and Success

8:30 AM - 10:00 AM Blandwood
2113, Workshop, Grades; 6-8

Explore why mathematical learning goals for students need to move beyond daily objectives and be firmly rooted in learning progressions, supporting access for all students.

***Chris Murcko**, TNTP*
***Steven LaFemina,** TNTP*

Making Algebra Child's Play

8:30 AM - 10:00 AM Colony B
2114, Workshop, Grades: 6-8

Learn how a visual and kinesthetic approach to teaching algebraic concepts enables students to grasp "sophisticated" looking concepts of linear algebra. Get a taste of the new Hands-On Equations Fractions.

***Darlene Williford**, Borenson and Associates, Inc.*

Teaching Math with a TI-84: Beyond the Basics

8:30 AM - 10:00 AM Imperial E
2115, Workshop, Grades: 9-12

Come learn how images, piece-wise functions, graph databases, & APPS can enhance student understanding. See how TI-Connect™CE can be used to increase engagement and communication.

***Ruth Casey**, Teachers Teaching with Technology*
***Margaret Bambrick,** Teachers Teaching with Technology*

Crashing on Purpose

8:30 AM - 10:00 AM Imperial G
2116, Workshop, Grades: 9-12

Come have fun using the TI-Innovator Rover to explore solving systems of equations and leave with an activity whose “fiery” crash leads to student learning.

***Adam Pennell**,Greensboro College*
***Julie Riggins,** East Forsyth High School*

Customizing Math Instruction to Meet the Needs of All Learners

8:30 AM - 10:00 AM Carolina
2117, Workshop, Grades: 9-12

Participants examine effective ways to build engaging lessons that include engaging activities, so all learners including EC and ELL students are exposed to rigorous instruction.

***Joanne Whitley**, Walch Education*
***Joi Strayhorn,** Harding High School, Charlotte Mecklenburg Schools*

Round-Table: Collaborating Making a Statistics Term Project Successful

8:30 AM - 10:00 AM Colony A
2118, Workshop, Grades: College & Univ.

Participants will share ideas on how to structure a large-scale, student-led, Statistics term project. We encourage sharing success stories and hurdles you're still trying to overcome!

***Fernando Schiefelbein**, Coastal Carolina CC*

Number Line to 10,000,000 and Other Math Manipulatives

8:30 AM - 10:00 AM Pebble Beach
2119, Grades: 3-5

Join us for a demonstration by Jim Franklin, teacher of special education from Elm Street Elementary in Rome, GA, who invented a number line up to 10,000,000 and other math manipulatives that address the standards of fractions, decimals, elapsed time, weight, and money, including students with visual impairments.

***Jim Franklin**, Slide-A-Round Math Manipulatives*

FRIDAY WORKSHOPS & SESSIONS

Shake, Rattle, and Roll: Using Games in Math Workshop

8:30 AM - 10:00 AM Oak B
2120, Grades: 3-5

Mathematics teachers will explore games that can be used to promote students' mathematical reasoning and discourse during Math Workshop.

***Le'Vada Gray**, Math Solutions, a division of Houghton Mifflin Harcourt*
***James Daniels,** Math Solutions, a division of Houghton Mifflin Harcourt*

Humorous Algebra - The MVP Transition Years

8:30 AM - 10:00 AM Oak A
2121, Grades: 9-12

Lesson Ideas, activities, songs, technology suggestions, project ideas, strategies, and techniques to implement into the MVP transition for Math 1, 2, and 3.

***June Blackwell**, Sanderson High School*

Cultivating Can Do Math Attitudes in Kindergarten

8:30 AM - 9:15 AM Cedar B
2122, Grades: PreK-2

Let us show you how Kindergarteners and first graders can talk and write about math in ways we didn't think were possible, while improving scores!

***Wilnie Hunter**, Isenberg Elementary School/Rowan Salisbury Schools*
***Heather Nardone,** Isenberg Elementary School/Rowan Salisbury Schools*

Subitizing- Moving Beyond Counting

8:30 AM - 9:15 AM Cedar A
2123, Grades: PreK-2

Help your students move beyond object counting towards counting on and learning combinations of numbers through the use of perceptual and conceptual subitizing! Participants will discuss the purpose of subitizing, explore different types of patterned sets, and leave with strategies and ideas that are aligned to the NEW NC Standard Course of Study Objectives.

***Amy Scrinzi**,Meredith College/Independent Consultant*

10 Math Activities to Start Your Own STEM/STEAM Club

8:30 AM - 9:15 AM Auditorium IV
2137, Grades: 6-8

Do you want to start a STEM/STEAM Club at your school but don't know how? This session will share the do's and don'ts of starting an "in-school" or "out-of-school" club. We will demonstrate 10 activities to get you started and cover the next 10 weeks!

***Denise Johnson**, Winston-Salem State*
***Shanta Kilgore, Zavious Mack, Catherine Dodson, Cassandra Erwin,** WSSU Math Ed Stduents*

What's the Problem?

8:30 AM - 9:15 AM Arrowhead A
2125, Grades: 3-5

What's the Problem? What's the problem with solving word problems? This presentation shares information regarding a NCCTM Grant that allowed pre-service teachers to work with a fourth grade to help figure out the dilemma!

***Angela Kern**, Pfeiffer University*
***Elizabeth Laney,** Stanly County Schools*

NCDPI: 3-5 Updates

8:30 AM - 9:15 AM Auditorium III
2126, Grades: 3-5

This session with focus on updates in K-5 mathematics. NCDPI consultants will share the tools and resources that were developed for implementation of the 2017 Mathematics Standards for elementary school.

***Denise Schulz**,NCDPI*
Tammy Lackey,

Connecting Children's Literature w/Middle Grades Mathematics

8:30 AM - 9:15 AM Colony C
2127, Grades: 6-8

Presenter will share 100+ popular children's books to use in middle grades math classes. Free lesson plans/activities, book list, rubrics, prizes and lots of giggles.

***Candice Brucke**, West-Oak Middle School/School District of Oconee County*

Deepening Conceptual Understanding and Making Connections Across Grade Levels (6-8)

8:30 AM - 9:15 AM Blue Ash
2128, Grades: 6-8

Experience a math classroom where learners get excited about solving problems, engage in instructional routines that promote deep thinking and conceptual understanding, and make connections with the world around them and prior learning. You will walk away having experienced specific instructional practices that you can implement in your classroom tomorrow! You will also receive a math classroom needs assessment tool that can help you assess your current teaching practices, identifying strengths and areas for improvement.

***Sandy Finocchi**, Carnegie Learning*

Making Connections: Numeracy & NC History

8:30 AM - 9:15 AM Biltmore B
2129, Grades: 6-8

Motivate math using interesting stories from NC's rich history. Hear about NC's gold rush, the war with Georgia, the state of Franklin, and more.

***Robert Kimball**, Retired - Wake Technical C C*

New Homes Coming Soon! An Engineering and Mathematics PBL

8:30 AM - 9:15 AM Arrowhead B
2130, Grades: 6-8

Participants will gain an understanding of systems thinking based mathematics Project Based Learning (PBL) and also strategies to incorporate them in their middle grade classroom settings.

***Premkumar Pugalenthi**, UNC Charlotte*
***Shelley Widenhouse,** JN Fries Magnet*
***Alexis James**, JN Fries Magnet*
***Dr. David Pugalee**, UNC Charlotte*

FRIDAY WORKSHOPS & SESSIONS

Web 2.0 Teaching Tools

8:30 AM - 9:15 AM Cedar C
2131, Grades: 6-12

There are tons of web 2.0 tools available for teachers and students but how can we incorporate them in the classroom? In this presentation, web 2.0 tools will be highighted and demonstrated for how to use in the classroom. Teachers will see how to use in their teaching and how students can incorporate them into projects and other assignments.

***Danielle Flores**, North Carolina Virtual Public Schools*

Engage. Elevate. Enhance. It's as Easy as 1-2-3!

8:30 AM - 9:15 AM Turnberry
2132, Grades: 6-12

Looking for engaging and mobile-friendly resources? Come see a demonstration of high-quality, interactive resources that promote student autonomy and support graphing, solving, and statistical literacy.

***Staci Lyon**,SAS Institute Inc.*

That Dreaded Parent Conference Ins & Outs

8:30 AM - 9:15 AM Biltmore A
2133, Grades: 6-12

An insight for beginning teachers into both sides of a parent conference, whether it's for academics or behavior.

***John Pritchett**, Athens Drive Magnet HS, Wake County*

It's in the cards

8:30 AM - 9:15 AM Oak C
2134, Grades: 9-12

The development and use of notecards and other study tools to keep students engaged in today's learning environment. No social media required!

***Deb Butler**, Currituck County High School*

College Math

8:30 AM - 9:15 AM Augusta A
2135, Grades: 9-12

Let's talk about the hard and soft skills high school students need in preparation for college mathematics.

***Susan Howard**, Pitt Community College/East Carolina University/NCMATYC*

The Extra-Sensory Perception Gap

8:30 AM - 9:15 AM Pinehurst
2136, Grades: 9-12

Your students can't read your mind! Some lessons in communicating effectively and getting your students to learn the language of mathematics.

***Seth McElvaney**, Wake Technical Community College*

Friday 9:30 Sessions

Making Thinking Visible in Mathematics

9:30 AM - 11:00 AM Auditorium IV
2200, **Keynote Speaker, K-12**

With freely available Web 2.0 tools and mobile apps students can be empowered to provide evidence of their thinking and demonstrate their understanding of math content in multiple ways (text, images, audio, video, presentations, artwork, manipulatives, and more). Lessons and activities that integrate the Visible Thinking routines with math often simultaneously incorporate 21st century skills. Thus, Making Thinking Visible with Math provides opportunities to embed students in rich learning opportunities that weave together many of the tenants and best practices for which educational innovations and reform measures call.

***Clif Mims**, University of Memphis and Project Zero Fellow*

Getting the Facts about Fluency

9:30 AM - 10:15 AM Auditorium I
2201, Workshop, Grades: PreK-2

Looking for concrete research-based strategies for building basic fact fluency that are developmentally appropriate for our youngest students? Come ready to discuss the steps for building fact fluency and leave with exciting and meaningful activities to use with your K-2 students.

***Amy Scrinzi**, Meredith College/Independent Consultant*

Curriculum Pathways ® Crio: Imagine. Create. Inspire

9:30 AM - 10:15 AM Turnberry
2202, Grades: K-12

Design, create, and share lessons that inspire students' natural curiosity! Using Crio's drag-and-drop editor, transform your static, paper-based lessons into interactive, online resources. For free!

***Staci Lyon**, SAS Institute Inc.*

Unlocking Literature in the K-2 Mathematics Classroom

9:30 AM - 10:15 AM Pinehurst
2203, Grades: PreK-2

Learn how to use Children's Literature to enhance your math instruction while engaging students in their learning. Add relevance to your instruction by reading a book!

***Donna Manning**, Martin County Schools*

Taking the "Problem" Out of Word Problems

9:30 AM - 10:15 AM Oak C
2204, Grades: PreK-5

This presentation explores why problem solving seems problematic for our students. We will offer innovative ways to approach this issue focusing on whole group instruction.

***Katy Ham**, Durham Public Schools- CC Spaulding*
***Angela Howell,** Durham Public Schools-Pearsontown*

FRIDAY WORKSHOPS & SESSIONS

An Afrocentric Approach to Elementary Mathematics

9:30 AM - 10:15 AM Cedar B
2205, Grades: 3-5

Discover culturally relevant pedagogy and teaching strategies for third-fifth grade mathematics that address the rationality of instructing students from an Afrocentric perspective.

***Tanya Hudson**, Fayetteville State University*
***Dawne Coker,** Morganton Road Elementary/ Cumberland County Schools*

Total Participation Techniques: Making Every Child an Active Learner

9:30 AM - 10:15 AM Colony C
2206, Grades: 6-8

Participants will learn how to implement field-tested techniques they can use on the spot with Hold-Up cards, with movement, and to guide note-taking and concept analysis.

***Candice Brucke**, West-Oak Middle School/School District of Oconee County*

Anchors & Bridges: Teaching Math with Contexts

9:30 AM - 10:15 AM Cedar C
2207, Grades: 6-8

Many teachers use real-world problems to make math engaging. But that's only half the story! Learn how real-world problems strengthen students' conceptual understanding.

***Amanda Casto**, UNC Charlotte*
***Luke Reinke,** UNC Charlotte*
***Michelle Stephan**, UNC Charlotte*
***Rukiye Ayan**, Middle East Technical University*

Making Connections: Numeracy & NC History

9:30 AM - 10:15 AM Biltmore B
2208, Grades: 6-8

Motivate math using interesting stories from NC's rich history. Hear about NC's gold rush, the war with Georgia, the state of Franklin, and more.

***Robert Kimball**, Retired - Wake Technical Community College*

MATH Walk Activities at AppState

9:30 AM - 10:15 AM Arrowhead A
2209, Grades: 6-12

This presentation will provide details on a set of activities that are created in the Department of Mathematical Sciences at ASU based on the landmarks, natural resources, buildings, and statutes located on the university campus.

***Sharareh (Sherry) Nikbakht**, Appalachian State University*

Watch your language!

9:30 AM - 10:15 AM Biltmore A
2210, Grades: 6-12

Discuss examples of math concepts and processes where choice of language can contribute to a need to "un-learn", or to a richer understanding and support of new learning.

***John Pritchett**, Athens Drive Magnet HS*

Deepening Conceptual Understanding and Making Connections Across Grade Levels (9-12)

9:30 AM - 10:15 AM Blue Ash
2211, Grades: 9-12

Experience a math classroom where learners get excited about solving problems, engage in instructional routines that promote deep thinking and conceptual understanding, and make connections with the world around them and prior learning. You will walk away having experienced specific instructional practices that you can implement in your classroom tomorrow! You will also receive a math classroom needs assessment tool that can help you assess your current teaching practices, identifying strengths and areas for improvement.

***Sandy Finocchi**, Carnegie Learning*

A Precalculus/Calculus Teacher Reads the Newspaper

9:30 AM - 10:15 AM Augusta A
2212, Grades: 9-12

In this session, I will share some ways that I use articles and graphs from newspapers to create problems and design activities for my precalculus and calculus students. Current events and math are inseparable!

***Forrest Hinton**, North Carolina School of Science and Mathematics*

Problem Posing in a Developmental Math Classroom

9:30 AM - 10:15 AM Cedar A
2213, Grades: College & Univ.

Problem posing engages students with word problems were lack of interests persists. Utilizing the student interest provides the bridge to engage with problem solving.

***John Sevier**,Appalachian State/ UNC Charlotte*
***Micheal Bosse,** Appalachian State University*

NCDPI: 9-12 Updates

9:30 AM - 10:15 AM Auditorium III
2214, Grades: 9-12

This session will focus on updates in High School Mathematics. This session will also include a focused discussion on the revision process for the 4th math courses, Advanced Functions & Modeling, Discrete Mathematics, and PreCalculus.

***Lisa Ashe**, NC Department of Public Instruction*
Joe Reaper

FRIDAY WORKSHOPS & SESSIONS

Friday 10:30 Workshops

FADS for Math - Facilitating Academic Discourse Strategies for Math

10:30 AM - 12:00 PM Colony A
2301, Workshop, Grades: K-12

Connect the dots between language and math. Join us as we engage in specific strategies, with appropriate scaffolds, to facilitate mathematical discourse for ALL students!

***Carolyn Frye**, Union County Public Schools/NCDPI EL Support Team*

Building a STEM Foundation with Unit Blocks

10:30 AM - 12:00 PM Sandpiper
2302, Workshop, Grades: PreK-2

It's time to dust off those glorious wooden unit blocks and begin to uncover all that block building has to offer your students! Participants will take part in hands-on activities using unit blocks to learn how to set up and facilitate block building experiences that promote problem-solving, discovery, exploratory learning, and capitalize on the mathematics within! Come ready to build and leave with concrete ideas to get you started back in your classroom.

***Amy Scrinzi**, Meredith College/Independent Consultant*
***Eva Phillips,** Eva C Phillips Consulting, LLC*

Math for Makers

10:30 AM - 12:00 PM Colony B
2303, Workshop, PreK-5

This workshop introduces teachers to maker projects that allow students to be hands-on while meeting the standards. Experience new technology and turn "junk" into math tools!

***Logan Breedlove**, UNC-Greensboro*
***UNCG Pre-service teachers,** UNCG*

Math Clubs - Be A Part of the Fun!

10:30 AM - 12:00 PM Tidewater A/B
2304, Workshop, Grades: PreK-5

Math Club! Come learn fun and exciting K - 2 games that use cards and dice. Learn easy ways to organize and implement games that work with multiple ability levels in math clubs. Gameboards and ideas for implementing Monday!

***Lori Triplett**, Central District Oahu*

Walk the Number Line for Research Based Results

10:30 AM - 12:00 PM Imperial A
2305, Workshop, Grades: 3-5

Elementary learners need a number line for powerful math concepts like skip counting, adding on, alternative algorithms for regrouping, making change, elapsed time, rounding, factoring, and fractions. You will experience unique ideas with number lines and be amazed how you can immediately use them with all students including struggling learners.

***Ruth Harbin Miles**, Mary Baldwin University*

What's Your Image? Transformations in the Coordinate Plane

10:30 AM - 12:00 PM Imperial E
2306, Workshop, Grades: 6-8

Come and explore strategies to engage students in generalizing the pattern of sets of ordered pairs under transformations. Transformations may include translations, reflections, and rotations.

***Margaret Bambrick**, Teachers Teaching with Technology*
***Ruth Casey,** Teachers Teaching with Technology*

Building Conceptual Understanding through Algebra Tiles

10:30 AM - 12:00 PM Imperial B
2307, Workshop, Grades: 6-8

Learn strategies for engaging students using Algebra Tiles. Operations with integers, solving equations, polynomials, and more. Leave with tools to implement Algebra Tiles in your classroom.

***Jaime Gilas**, Cumberland County Schools*
***Elwanda McLaurin,** Cumberland County Schools*

Developing Understanding of Ratios & Proportions

10:30 AM - 12:00 PM Augusta B
2308, Workshop, Grades: 6-8

Participants will learn about principles underlying the development of proportional reasoning and engage in hands-on activities designed to promote student understanding of this important topic.

***Erica Slate Young**,Appalachian State University*
***Tonya Scott,** Burke County Schools*

Math/Science Integration for Earth's Sake

10:30 AM - 12:00 PM Imperial H
2309, Workshop, Grades: 6-8

Engage in hands-on activities that applies middle school math skills to broadening awareness on environmental challenges and other global issues.

***Shirley Smith**,Loudoun County Public Schools (VA)*

Improve Your Math with Three Squares A Day

10:30 AM - 12:00 PM Pebble Beach
2310, Workshop, Grades: 6-12

Invite your students to see the patterns within the square numbers and incrementally from square to square.

***Eric M. O'Brien**, Bellmore (Retired)*

FRIDAY WORKSHOPS & SESSIONS

Understanding Teaching Strategies

10:30 AM - 12:00 PM Imperial C
2311, Workshop Grades: 9-12

Bring rich algebra, geometry, and statistics lessons to life with TI-Nspire™. Experience lessons as a student, and learn how to implement them as the teacher.

***Jane Damaske**, Teachers Teaching with Technology*

Engaging Technology-Based Tasks For Your Classroom

10:30 AM - 12:00 PM Tanglewood
2312, Workshop, Grades: 9-12

Come engage with technology-based mathematics tasks using open source tools such as Desmos, Web Sketchpad, and CODAP. Bring a laptop or tablet!

***Karen Hollebrands**, North Carolina State University*
***Brooke Outlaw,** NC State*
***Gemma Mojica**, NC State*

What's the Problem? Designing Cognitively Demanding Tasks

10:30 AM - 12:00 PM Imperial G
2313, Workshop, Grades: 9-12

Educators recognize the importance of task design, but there is variety in the cognitive demand level of tasks. Participants will consider different versions of the same task and investigate the effects of lesson modifications.

***Krista Holstein**, Saint Mary's School*

Make the Ambiguous Case Unambiguous

10:30 AM - 12:00 PM Blandwood
2314, Workshop, Grades: 9-12

A classroom activity that can be done with or without technology to explore the ambiguous case of the Law of Sines.

***Kristi Martin**, North Carolina State University*

The "Why" Behind the Slip-Slide Factoring Method

10:30 AM - 12:00 PM Morehead
2315, Workshop, Grades: 9-12

Factoring trinomials with "a" ≠ 1 is easy using Slip-Slide, but can you justify the method? See how transformational factoring of quadratic functions is the key.

***Jeff Steckroth**, Campbell University*

Using Problem Based Tasks to Build Conceptual Understanding

10:30 AM - 12:00 PM Carolina
2316, Workshop, Grades: 9-12

Participants explore how to use rich problem-based tasks to build engaging lessons with effective online resources, Desmos, scaffolded practice, guided practice and formative assessments.

***Joanne Whitley**, Walch Education*

Friday 10:30 Sessions

Dive into Data

10:30 AM - 12:00 PM Oak A
2317, Grades: 3-5

Explore the 4 components of data-driven instruction essential to maximizing student growth. Leave with samples of each component differentiated by grade level!

***Marla Chaney**, Palisades Park Elementary/Charlotte Mecklenburg Schools*
***Holly Averette,** Palisades Park Elementary/Charlotte Mecklenburg Schools*

Digital Technology: Activities and Ideas for your Math Classroom

10:30 AM - 12:00 PM Imperial F
2318, Grades: 6-12

Come learn about different tool uses for digital technology in your mathematics classroom. Sense making activities, lesson ideas and technology integration frameworks will be provided.

***Kwaku Adu-Gyamfi**, East Carolina University*
***Nicolette Aloia,** East Carolina University*
***Michael Bier**, East Carolina University*
***MATE 4001 Students**, East Carolina University*

Do Your Classroom Management Strategies Add Up?

10:30 AM - 12:00 PM Oak B
2319, Grades: 9-12

Learn "8:00 Monday morning" research-based strategies of a fair and simple classroom management system that will eliminate unwanted behaviors by 70% or more. Learn the essential steps of teaching to expected behaviors and discover the benefits and the importance of positive interactions with your students.

***Peter Vajda**, True North Partnering.com*

NCDPI Testing Updates

10:30 AM - 11:15 AM Imperial D
2320, Grades: K-12

NC Testing Updates

***Josh Griffin**, NCDPI*

Unitizing: The Key to Understanding Numbers

10:30 AM - 11:15 AM Auditorium II
2321, Grades: PreK-2

This session will include tasks and discussion about how to support students' work with place value and understanding of number with a focus on unitizing 10 ones as a group of ten.

***Valerie Faulkner**, North Carolina State University*

Early Math in North Carolina

10:30 AM - 11:15 AM Auditorium I
2322, Grades: PreK - 2

The session will discuss the Early Math Education work that is happening at North Carolina's Department of Public Instruction within the Early Education office(Pre-Kindergarten - 3rd grade). The presentation will provide an up-to-date look at where we are, our vision, and an opportunity for audience members to ask questions and provide feedback to the state.

***Pamela Shue**, North Carolina Department of Public Instruction*

Planning Data Driven Instruction with Standards and Assessments

10:30 AM - 11:15 AM Pinehurst
2323,

A look at how to approach standards and assessments when planning Data-Driven Instruction

***Mariana Ponte**, Guilford County Schools*

Using Close Reading Strategies to Solve Multi-Step Math Problems

10:30 AM - 11:15 AM Turnberry
2324, Grades: 3-5

Do your students continue to struggle with multi-step word problems? Then this session is for you! Participants will learn how to teach students to apply their close reading strategies to solve multi-step word problems. Using meaningful rich text and tasks, participants will learn how to use language skills to make sense of mathematics.

***Diane Price**, Gaston County Schools*
***Shannon Hullett,** Gaston County Schools*

Singapore Math for Beginners

10:30 AM - 11:15 AM Arrowhead B
2326, Grades: 3-5

Elementary concepts of Singapore math and how to access materials to allow students to practice this visual approach to arithmetic.

***Dorothy Sulock**, University of North Carolina at Asheville*

Modeling Addition and Subtraction of Integers

10:30 AM - 11:15 AM Auditorium III
2327, Grades: 6-8

The NC revised standards include modeling addition and subtraction of integers in 6th grade. Participants will explore the use of various models to engage students with these concepts.

***Christine Blystad**, Durham Public Schools*
***Robin Barbour,** Math Consultant*

Knowing how to help your students with geometric similarity

10:30 AM - 11:15 AM Cedar A
2328, Grades: 6-8

Frustrated with students' misconceptions around problems involving scale drawings? Learn how to help them by incorporating research-based ideas of congruence and similarity in your instruction.

***Meetal Shah**, North Carolina State University*

The Stock Market Game

10:30 AM - 11:15 AM Arrowhead A
2329, Grades: 6-8

What to do with $100,000? Invest it! Learn tips and tricks to easily implement this simulation in class while your students play the game.

***Amber Thomas**, North Carolina Council on Economic Education*

Number Talks in High School: Gateway to Discourse

10:30 AM - 11:15 AM Blue Ash
2330, Grades: 6-12

Experience Number Talks at the high school level. Learn how to get students of any strength talking, and see how the talk extends into your lessons.

***David Hardt**, Person County Schools*

Math and Music: Sharing Beautiful Connections

10:30 AM - 11:15 AM Oak C
2331, Grades: 6-12

Emphasizing the connections between math and music, we will share activities that connect geometric transformations, music composition and contra dance. No music background is required.

***Maria Hernandez**, The NC School of Science and Mathematics*
***Phillip Riggs,** The NC School of Science and Mathematics*

Statistics and Probability Palooza

10:30 AM - 11:15 AM Cedar B
2332, Grades: 9-12

Probability and Statistics Activities will be presented for use in the Math 1 to AP Statistics classroom. Handouts will be provided.

***Amy Martin**, East Burke High School*

FRIDAY WORKSHOPS & SESSIONS

Beyond Riemann Sums & Euler's Method

10:30 AM - 11:15 AM Augusta A
2333, Grades: 9-12

For Calculus teachers, what's "better" than Riemann & Euler? In this session we learn other techniques for numeric integration and the error associated with those methods.

***Philip Rash**, NC School of Science & Math*

An Approach to Math Readiness for STEM Programs

10:30 AM - 11:15 AM Biltmore B
2334, Grades: College & Univ.

Course and placement modifications, the success of the program, and how institutions and high schools can incorporate a similar model will be discussed and shared.

***Denise Bauer**,Methodist University*
***Kathleen Fick,** Methodist University*
***Jie Zhou**, Methodist University*

PLT Meetings in Preservice Teacher Preparation

10:30 AM - 11:15 AM Biltmore A
2335, Grades: College & Univ.

Learn how we include PLT meetings in a field-based, lesson implementation project for preservice teachers. The meetings are integral in planning and post-lesson analyses.

***Temple Walkowiak**, North Carolina State University*
***Amanda Gosek,** North Carolina State University*

Friday 11:30 Keynotes

Greater than the sum of its parts: STEAM, student/ teacher empowerment, and the Boiling River of the Amazon

11:30 AM - 1:00 PM Grandover
2400, **Keynote**

There is an old jungle proverb that modern science has only recently begun to truly understand: "To kill a tree, cut down its neighbors." Join National Geographic Explorer Andrés Ruzo on a journey to the front lines of Amazonian research and conservation, where unexpected connections between American classrooms and the Peruvian jungle have become a cornerstone in the fight to protect the sacred Boiling River. Solutions exist, but attaining them means cultivating a whole that is greater than the sum of its parts.

***Andres Ruzo**, National Geographic/Cengage Learning*

Supporting Mathematics Interactions in Home Environments, Strategies for Connecting with Families

11:30 AM - 1:00 PM Auditorium I
2401, **Keynote, PreK-5**

This session presents findings from a home-based intervention designed to increase and support mathematical play between parents and preschool/prekindergarten aged children. The intervention, Project MathPack, provided take home packs grounded in play and the mathematical processes for families to engage in mathematical play at home. Participants will learn how to implement strategies for increasing mathematical play through these MathPacks and how to support children by building bridges between classroom and home environments.

***Sandra Linder**, Clemson University*

Friday 11:30 Sessions

EVAAS: The Basics

11:30 AM - 12:15 PM Colony C
2402, Grades: K-12

Educators will become familiar with interpreting EVAAS school-level reports, hosting student growth data conversations, and considering EVAAS data in instructional decision making and planning.

***Sarah Gilbert**, SAS*
***Deanene Deaton,** SAS*

Math Blended Learning

11:30 AM - 12:15 PM Auditorium IV
2403, Grades: K-12

Blended learning in the math classroom using Canvas, Schoolnet, Discovery Education, Desmos, IXL and many other tools to help students explore and learn while improving competencies.

***Wendi Hinson**, Ashley Chapel Educational Center/ Richmond County*
***Chad Osborne,** WED Instructor/Richmond County*

Statistics in Action from 5 to 95!

11:30 AM - 12:15 PM Cedar A
2404, Grades: K-12

Engage students' interests in our data driven world with interactive activities and Google Apps that make Statistics in your daily classroom come alive!

***Jayne Sleasee**, Brunswick County Schools*
***Karen Walker,** Brunswick County Schools*

Vertical Non-permanent Surfaces for the Win

11:30 AM - 12:15 PM Turnberry
2405, Grades: K-12

Increase engagement of learners, improve mathematical conversations, and deepen the level of understanding by tweaking your use of vertical non-permanent surfaces (VNPS).

***Sara Vaughn**, Northwest Guilford Middle School*

FRIDAY WORKSHOPS & SESSIONS

Best Practices That Make You A Better Teacher Tomorrow

11:30 AM - 12:15 PM Cedar B
2406, Grades: 3-5

Interactive Overview of Guided Math Strategies, Number Talks, and Innovative Ways to Build Accountability in your class.

***Brittney Dennis**, Irving Park Elementary*
***Colby Williams,** Guilford County Schools*

The Stock Market Game

11:30 AM - 12:15 PM Arrowhead A
2407, Grades: 3-5

What to do with $100,000? Invest it! Learn tips and tricks to easily implement this simulation in class while your students play the game.

***Amber Thomas**, North Carolina Council on Economic Education*

Measurement Olympics

11:30 AM - 12:15 PM Biltmore B
2408, Grades: 6-8

Exploring Measurement! A Middle School STEM Summer Camp hands-on activity, including measurement modules and classroom extensions, will be shared. Handouts provided.

***Kathleen Fick**, Methodist University*
***Daniel Bennett,** Methodist University*

Take 5: Physical Activity Breaks in Math Classes

11:30 AM - 12:15 PM Cedar C
2409, Grades: 6-8

Are you interested in increasing students' enjoyment, engagement, and performance in math class? Come "Take 5". Learn about the benefits of physical activity breaks.

***Laila Thompson**, North Carolina State University*

NCDPI: 6-8 Updates

11:30 AM - 12:15 PM Auditorium III
2410, Grades: 6-8

This session will focus on updates in MS mathematics. NCDPI consultants will share the tools and resources that were developed for implementation of the 2017 Revised Mathematics Standards for middle school mathematics. This session will also included a focused discussion on the implications of HB 986 and compacted curriculum in middle school math.

***Tammy Lackey**, NCDPI*
***Lisa Ashe,** NCDPI*

Online Treasure Trove of Mathematics Resources

11:30 AM - 12:15 PM Biltmore A
2411, Grades: 6-12

Online resources that are standards aligned and student centered will be explored. Discussions about how to incorporate these resources in daily lessons will be encouraged. Attendees will be given access to a compiled infographic of the presentation.

***Joan Ray**, Winston-Salem Forsyth County Schools*
***Yvette Shore,** Davie County Schools*

Do More With Desmos, Exploring Activity Builder

11:30 AM - 12:15 PM Auditorium II
2412, Grades: 6-12

Come experience Desmos Activity Builder! Learn how to find, use, and edit Desmos Activity Builders, and even create your own engaging activities!

***Julie Reulbach**,Cannon School*

Understanding Probability Literacy of High School Students

11:30 AM - 12:15 PM Oak C
2413, Grades: 9-12

Understanding the probability literacy of high-school students is vital to developing good probability lessons. Pilot study results and tasks used will be shared for teacher insight.

***Fred Coon**, University of North Carolina Charlotte*

Interactive Notebooks for High School Math

11:30 AM - 12:15 PM Blue Ash
2414, Grades: 9-12

See specific examples of how I use interactive notebooks in my classes, and receive strategies and resources to help you implement INB's in your own classes.

***Catherine Slowikowski**, Harnett Central High School*

Engagement for Student Success

11:30 AM - 12:15 PM Augusta A
2415, Grades: College & Univ.

One of the components of AMATYC is ENGAGEMENT. The presenter will share ways she incorporated more hands on activities for her classes that engaged her students in the classroom and across campus. She will also highlight on how it affected the overall vibe of mathematics at her school by working across the curriculum.

***Holly Bass**, Brunswick Community College*

Friday 12:30 Sessions

Making Sense of Numbers Through Models, Discussion, and Discovery

12:30 PM - 2:00 PM Imperial D
2501, **Keynote Speaker, PreK-2**

Do your students understand how numbers work? Do they have a deep understanding of place value and properties? Join us to explore simple classroom investigations that focus on big ideas about numbers. Help your students make sense of important number concepts through literature connections, models, investigations, and lots of math talk! Walk away from this session with a wealth of teaching strategies and engaging tasks to enliven your math classroom and help your students arrive at a deeper understanding of numbers.

***Susan O'Connell**, Quality Teacher Development*

FRIDAY WORKSHOPS & SESSIONS

Friday 12:30 Workshops

Bringing mathematics alive and making it fun.

12:30 PM - 2:00 PM Colony B
2503, Workshop, Grades: K-12

GlobalMathStories.org is a tool that helps teachers write lessons that teach mathematics and expose their students to life in other parts of the world.

***Chadd McGlone**, Teachers2Teachers Global*

Engage, Explore, and Enrich Elementary Mathematics with 3 Act Tasks

12:30 PM - 2:00 PM Morehead
2504, Workshop, Grades: PreK-2

Are your in a rut with basic math tasks?

This workshop will allow participants to engage in an interactive 3 act math tasks. Participants will discuss how to engage, explore, and enrich their mathematical task design to differentiate for the needs of all learners and bring 21st century learning to your classroom.

***Wendy Lewis**, University of North Carolina Charlotte/Rowan Salisbury Schools*

Not Your Average Reteach

12:30 PM - 2:00 PM Sandpiper
2505, Workshop, Grades: PreK-5

What do you do when they don't get it? During this session, participants will learn strategies for addressing targeted misconceptions using an innovative reteach model.

***Robyn Hobson**, Charlotte-Mecklenburg Schools*
***Busola Stackhouse,** Charlotte-Mecklenburg Schools*

Math Without Numbers?! Are You Crazy?!

12:30 PM - 2:00 PM Augusta B
2506, Workshop, Grades: PreK-5

Do your students randomly assign an operation when solving word problems (WP)? Numberless WPs helps students deconstruct the information and use reasoning to construct a solution.

***Stephanie Lachmann**, Wake County Public Schools*
***Jenny Ainslie,** Wake County Public Schools*

Connecting with Math Through Children's Literature

12:30 PM - 2:00 PM Colony A
2507, Workshop, Grades: PreK-5

In this session, you will learn how to integrate children's literature into your math program.

***Erin Moss**, Wake County Public Schools*

Decimals: Combining Place Value and Fractions

12:30 PM - 2:00 PM Imperial C
2508, Workshop, Grades: 3-5

Decimals offer a connection between whole numbers and fractions. Come explore rich tasks emphasizing this relationship, like measuring the thickness of a piece of paper!

***Drew Corley**, Amplify Education, Inc.*

Action, Action We Want Fractions!

12:30 PM - 2:00 PM Carolina
2509, Workshop, Grades: 3-5

Let's explore the ten essential strategies that foster fraction sense. Come ready to dive into activities that support the conceptual understanding of fractions.

***Crystal Williams**, Franklin County Schools*

"It's Frogs, It's Planes, It's Data!"

12:30 PM - 2:00 PM Imperial G
2510, Workshop, Grades: 6-8

" It's Frogs, It's Planes, It's Data!"

***Jessica Black**, Brunswick County Schools*
***Alexis Milner,** Brunswick County Schools*

From Fractions and Cuisenaire Rods to Bar Models and Equations

12:30 PM - 2:00 PM Arrowhead A
2511, Workshop, Grades: 6-8

Students use Cuisenaire rods to understand fraction equivalence and determining the whole when given a fractional piece. Come work with Cuisenaire rods and hands-on bar models to transition from concrete representations of fractions to concrete representations of one-step equations.

***Courtney Lewis**, Carnegie Learning*

The Ice Cream Stand

12:30 PM - 2:00 PM Imperial H
2512, Workshop, Grades: 6-8

How can you successfully run a business without math skills? Participants will own their own ice cream stand by setting their prices and then competing with other stands. The participants will lastly be introduced to EconEdLink providing additional lessons they can use at no cost.

***Amber Thomas**, North Carolina Council on Economic Education*

Pattern Talks: Connecting Visuals to Expressions

12:30 PM - 2:00 PM Tanglewood
2513, Workshop, Grades: 6-12

Help students write expressions given a pattern, and evolve into writing equations of linear functions given block patterns, tables, and graphs using non-traditional methods.

***Tracy Conte**, Wake County Public Schools*

3 Part Task: Informal Inferential Reasoning

12:30 PM - 2:00 PM Blandwood
2514, Workshop, Grades: 6-12

Come experience a 3 part task situated in student understanding of sampling distributions and CLT, including hands-on data collection and applet use.

***Emily Elrod**, NC State University*
***Asli Mutlu,** NC State University*

Planning for Effective Instruction

12:30 PM - 2:00 PM Imperial B
2515, Workshop, Grades: 6-12

Explore a variety of strategies that make efficient use of instructional time, promote differentiated instruction, and actively engage students while developing a growth mindset.

***Melissa Gibbs**, Rockingham County Schools*
***Joy McCormick,** Rockingham County Schools*

The Power of Powers

12:30 PM - 2:00 PM Pebble Beach
2516, Workshop, Grades: 6-12

Invite your students to work with exponents and logarithms quickly and accurately. You'll ask, "Why didn't I learn this way?"

***Eric M. O'Brien**, Bellmore (Retired)*

Using a Virtual World in an Introductory Statistics Class

12:30 PM - 2:00 PM Tidewater A/B
2517, Workshop, Grades: College & Univ.

Participants will experience collecting data and conducting experiments on residents in a virtual online setting called The Islands.

***Lisa Rosenberg**, Elon University*
***Laura Taylor,** Elon University*
***Ryne VanKrevelen**, Elon University*
***Kirstie Doehler**, Elon University*

Friday 12:30 Sessions

African American Male Math Achievement Toolkit

12:30 PM - 2:00 PM Oak A
2518, Grades: K-12

Supporting teachers to use research-based effective instructional strategies, with attention to their bias, that are specifically developed to reach and teach African-American males.

***Rolanda Baldwin**, UnboundEd Learning*

Kinesthetic Strategies to Improve Math Outcomes

12:30 PM - 2:00 PM Biltmore B
2519, Grades: K-12

Do your students struggle with fluency and deep conceptual understanding of math concepts? Learn kinesthetic strategies to skyrocket their learning and their enjoyment of math!

***Suzy Koontz**, Learn Thru Movement/Math & Movement*

Infusing Intellectual Standards for Critical and Creative Thinking into Your Math Classroom

12:30 PM - 2:00 PM Imperial A
2520, Grades: 6-12

In this session, learn how to foster your students' critical and creative thinking, problem solving and risk taking in the math classroom.

***Cyndi Edgington**, North Carolina State University*

Putting the I (Content Teacher) and U (EC Teacher) Back into Inclusion

12:30 PM - 2:00 PM Biltmore A
2522, Grades: 6-12

The implementation of IEP, 504s, and ELL plans within your instruction can be a daunting task. I want to assist you in the navigation of "marrying the two worlds."

***Amanda Thompson**, Charlotte Mecklenburg Schools*

EVAAS: Insightful Uses for Classroom Teachers

12:30 PM - 1:15 PM Colony C
2523, Grades: K-12

Classroom teachers will explore specific EVAAS reports that can inform many aspects of their teaching craft, including differentiated student support, personal professional development, leadership opportunities, and more.

***Sarah Gilbert**, SAS*
***Deanene Deaton,** SAS*

Co-Constructing Statewide K-8 Curriculum Frameworks

12:30 PM - 1:15 PM Auditorium III
2524, Grades: K-12

Come learn about the purposes and goals for the creation of the K-8 instructional frameworks, and the design-based implementation research process behind their development.

***Michelle Stephan**, UNC-Charlotte*
***Katie Schwartz,** ECU*
***Arren Duggan**, UNC-Greensboro*

FRIDAY WORKSHOPS & SESSIONS

Healthy Math
12:30 PM - 1:15 PM Arrowhead B
2525, Grades: PreK-5

Arithmetic worksheets about math of food, especially grams of sugar and calories in foods.

***Dorothy Sulock**, University of North Carolina at Asheville*

Putting the Pieces Together
12:30 PM - 1:15 PM Auditorium IV
2526, Grades: 3-5

Practices that are vital for students to become mathematical thinkers; Sharing strategies that have proven to be effective along with practical ways of implementing them.

***Stephanie Roland**, Pleasant Gardens Elementary; McDowell County Schools*

Statistics and Probability in the Elementary Classroom
12:30 PM - 1:15 PM Cedar A
2527, Grades: 3-5

Are you ready to dig into Statistics and Probability with your students? Join us for hands on exploration and activities directly related to the NCSCOS.

***Elizabeth Schmidt**, Bolivia Elementary, Brunswick County Schools*
***Denotra Franks,** Town Creek Elementary, Brunswick County Schools*
***Allison Wilkins**, Bolivia Elementary, Brunswick County Schools*

Go Team! Cooperative Games and Strategies
12:30 PM - 1:15 PM Turnberry
2528, Grades: 3-5

Explore several games and learning activities that can be adapted for review for many grade levels. Come ready to play and leave with electronic resources.

***Jessalyn Spell**, Charles England Elementary/Lexington City Schools*

Task Design for Statistical Habits of Mind
12:30 PM - 1:15 PM Blue Ash
2529, Grades: 6-12

Bring a laptop to this interactive session and engage with resources to help teachers design, adapt, or select tasks that develop statistical habits of mind.

***Christina Azmy**, North Carolina State University*
***Gemma Mojica,** NC State University*
***Heather Barker**, NC State University*
***Hollylynne Lee**, NC State University*

Going Beyond the Grade
12:30 PM - 1:15 PM Cedar B
2530, Grades: 6-12

Tired of grades that mean nothing to your students? Tired of them asking for points? Join us in a discussion of how to motivate beyond grades and make scores meaningful for your students.

***Ryne Cooper**, West Iredell High School*
***Mike Swinson,** Washington High School*

Lesson Study: Professional Development Within Your Own Department
12:30 PM - 1:15 PM Pinehurst
2531, Grades: 6-12

Lesson Study is professional development that is individualized for teachers and builds strong Professional Learning Teams. We will share how we have overcome barriers, grown professionally by completing Lesson Study cycles, and supported each other in providing insightful lessons for our students.

***Mary Johnson**, South Brunswick High School*
***Keri McKenzie,** West Brunswick High School*

Stories from the History of Math
12:30 PM - 1:15 PM Oak B
2532, Grades: 6-12

(CORRECTED) Stories of funny, dangerous, and thought-provoking moments from mathematical history that can be woven into classroom conversation, increasing student engagement with and appreciation of mathematics.

***Julia Webster**, UNC at Asheville*

Assessment with Desmos!
12:30 PM - 1:15 PM Auditorium II
2533, Grades: 9-12

Come learn how to use create assessments using Desmos Activity Builder! Using Desmos Activity Builder for assessments can reduce student stress while giving teachers deeper insight into their students specific content knowledge. You will learn how to create free-response, multiple choice and graphing slides to accurately assess your students.

***Julie Reulbach**, Cannon School*

Discrete Math and How to Relate it to our students
12:30 PM - 1:15 PM Cedar C
2534, Grades: 9-12

Discrete math is a course that gets overlooked many times in professional development. Looking for resources and ideas to make this course meaningful and relevant to your students? You've come to the right place! We will share activities and projects we have used in our classrooms.

***Wendy Srinivasan**, Corinth Holders High School/ Johnston County Schools*
***Tina Robinson,** Lincoln County Schools*

"Genius and Tragedy: The Life and Mathematics of Évariste Galois"
12:30 PM - 1:15 PM Augusta A
2535, Grades: College & Univ.

We will discuss the historical perspective, the political motivation, the hardships of his life, and the brilliance of his discoveries as they pertain the modern day algebra.

***Daniel Bennett**, Methodist Univeristy*

FRIDAY WORKSHOPS & SESSIONS

Friday 1:30 Sessions

EVAAS Data and Teaching Teams

1:30 PM - 2:15 PM Colony C
2601, Grades: K-12

Educators will explore ways to integrate EVAAS reports into teaching team reflection and planning practices to bolster student growth collaboratively.

***Sarah Gilbert**, SAS*
***Deanene Deaton,** SAS*

Developing Flexibility in Mathematics: Incorporating Number Talks in the K-12 Classroom

1:30 PM - 2:15 PM Blue Ash
2602, Grades: K-12

In this K-12 session, we will discuss the use of number talks as a means for discourse as well as helping students become flexible with mathematics.

***Ashley Whitehead**, Appalachian State University*

Tools for Teachers: Standards and Resources for Grade 1

1:30 PM - 2:15 PM Auditorium II
2603, Grades: PreK-2

Do you still have questions about the 2017 NC Standard Course of Study for Mathematics and the resources that are available for support? Come meet the writers of the Tools for Teachers project and find out how to use the NC2ML instructional framework, the revised standards, and other resources to help you plan for instruction.

***Laura Baker**, Kannapolis City Schools*
***Danielle Long,** Union County Public Schools*

Are We Making Math Scary?

1:30 PM - 2:15 PM Augusta A
2604, Grades: PreK-5

How do my feelings about math impact my students? Discover what we found about practices you likely are (or aren't) utilizing based on these attitudes.

***Molly Kearns**, Elon University*
***Erin Hone,** Elon University*

K-5 Instructional Frameworks Update

1:30 PM - 2:15 PM Auditorium IV
2605, Grades: PreK-5

In this session, we will share updates about the Instructional Frameworks and preview resources to use during the implementation of the new K-5 mathematics standards.

***Katie Schwartz**, ECU*
***Arren Duggan,** UNC-Greensboro*

Elementary AP?

1:30 PM - 2:15 PM Cedar B
2606, Grades: 3-5

Build on your understanding of vertical alignment to motivate students and offer a challenging enrichment program. Leave with examples of pacing and enrichment activities.

***Holly Averette**, Palisades Park Elementary/Charlotte Mecklenburg Schools*
***Marla Chaney,** Palisades Park Elementary/Charlotte Mecklenburg Schools*

Instructional Coaching and Co-teaching in Elementary Math Classrooms: Cultivating Connections for All

1:30 PM - 2:15 PM Auditorium 1
2607, Grades: 3-5

This session provides recent research about instructional coaching and co-teaching as these two topics intersect in elementary math classroom. Participants will learn how to cultivate a strong relationship between co-teachers so that an optimized learning environment is the result.

***Susan Price-Cole**,Stoney Creek Elementary School/ Caswell County Schools/ University of North Carolina at Chapel Hill*

Ours is to question why: No more keep change flip

1:30 PM - 2:15 PM Oak C
2608, Grades: 6-8

How do we explain that we can divide thirds by fourths and have an answer with ninths to our students? Come learn how to model fraction division and address NC.6.NS.1 using common denominators and then get to the standard algorithm for 7th grade.

Robin Barbour

6-8 Instructional Frameworks Update

1:30 PM - 2:15 PM Auditorium III
2609, Grades: 6-8

In this session, we will share updates about the Instructional Frameworks and preview resources to use during the implementation of the new 6-8 mathematics standards.

***Michelle Stephan**, UNC-Charlotte*
***Melanie Richey,** Randolph County*
***Katie Mahwinney**, Appalachian State University*

Easy Jeopardy Fun

1:30 PM - 2:15 PM Cedar A
2610, Grades: 9-12

You will learn how to easy integrate Jeopardy without too much hassle.

***Malik Richardson**, Charlotte Mecklenburg Schools*

Projects For Discrete Math

1:30 PM - 2:15 PM Cedar C
2611, Grades: 9-12

Looking for projects for discrete math? Come and hear about the various projects I have used successfully in my class. I will have handout, rubrics and sample finished projects.

***Tina Robinson**, Lincoln County Schools*
***Wendy Srinivasan,** Johnston County*

Reality Math

1:30 PM - 2:15 PM Arrowhead B
2612, Grades: 9-12

Useful math units about energy, health, sports, personal finance, population, firearm deaths, etc.

***Dorothy Sulock**, University of North Carolina at Asheville*

Building Math Positive Classrooms

1:30 PM - 2:15 PM Oak B
2613, Grades: 9-12

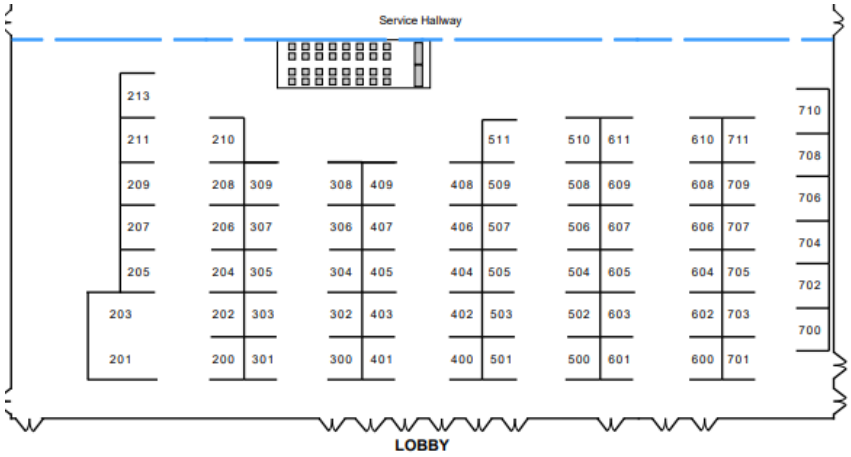
Learn how a student teacher and cooperating teacher designed their classroom to encourage growth mindsets and math positivity

***Christen VanNewkirk**, Cleveland High School*
***Ashley Lawson,** Cleveland High School (and student teacher at NC State University)*

EXHIBITOR INFORMATION

Our exhibits feature the most current mathematics education products, publications, software, services and learning opportunities. We encourage all of our conference attendees to be sure to get by the exhibit area and support our exhibitors. Exhibits are located on the main floor of the Koury Convention Center in the Guilford Ballroom. Entrance is through the main lobby and name badges must be shown for admission. Exhibits are open to registered conference participants during the following times:

Thursday, November 1, 8:00 am - 4:30 pm
Friday, November 2, 8:00 am - 1:30 pm



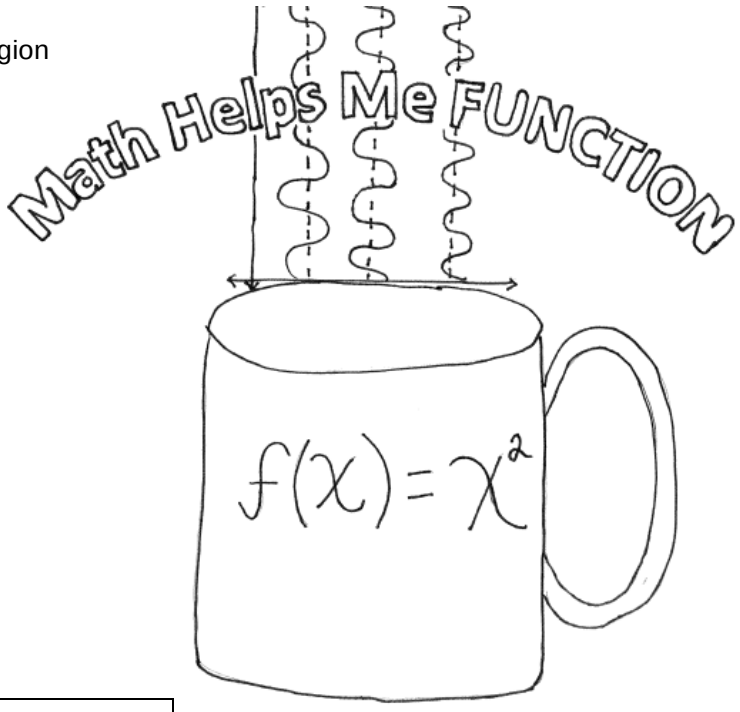
NC Council of Teachers of
Mathematics 2018 Fall Conference
November 1-2, 2018

Vendor Donated Door Prizes

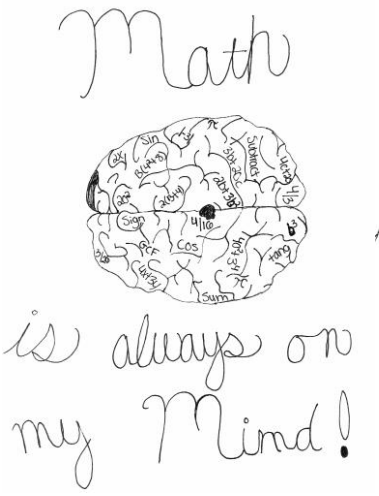
Tickets for door prizes will be distributed on Thursday afternoon at 4:30pm at the Awards Celebration reception. Winners will be drawn at the end of the Awards Ceremony – you must be present to win. Vendor donated door prizes are given to us at vendor check-in. We usually have tons of great door prizes – you don't want to miss out!

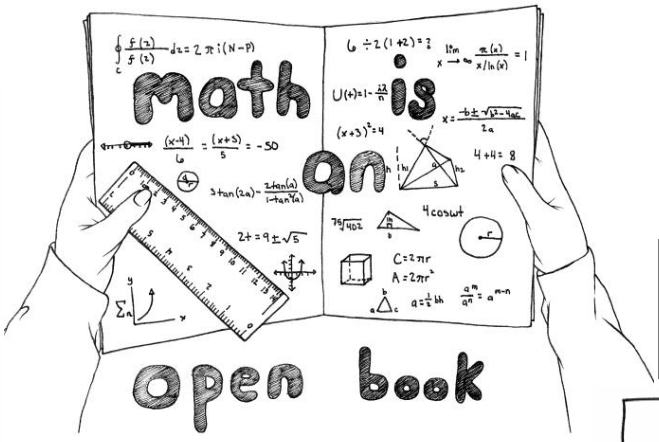
Company/ Organization	Booth #
Agile Mind	308
All Our Favorite Things	610
Alman Educational Associates	301
American Book Company	609, 611
Amplify	703
Appalachian State University Mathematical Sciences	306
ASSIStments	408
Blanchard Educational Services	500, 502
Borenson and Associates, Inc.	605
Box Cars and One-Eyed Jacks	405
Carnegie Learning	707
Casio America Inc.	607
CPM Educational Program	307
Curriculum Associates	200, 202
Didax Inc.	309
DPI	210
Dream Box Learning	508
Eastern Carolina University	701
EasyWorksheet.com	510
ETA hand2mind	507, 509
ExploreLearning	401
FROG PUBLICATIONS	403
Get More Math	504
Great Minds (Eureka Math)	511
Guilford County Schools	700
Hart Inc.	505
Heinemann Publishing	501,503
High Point University	705
Houghton Mifflin Harcourt	601, 603
Imagine Learning	702
IXL Learning	602
Learning Wrap-ups, Inc.	204
Math & Movement	710
Math Celebrations	205,207
Math Fair	209, 211
McGraw Hill Education.com	506
Mentoring Minds	303, 305
National Geographic Learning	400, 402, 404
National Training Network	604
NC State University	704
NCAE	706
NCSS Education Foundation	608
NC Network of Teachers' Circles	406
Pearson	206
PFS Investments	300, 302, 304
Professional Educators of North Carolina (PENC)	709
Proven Learning	509
State Employees' Credit Union	507
Texas Instruments	606
Twitter	711
UNC Charlotte	201, 203
Walch Education	208

Logo Contest Overall Winner: Amelia Miller,
8th Grade, "Math Helps Me Function",
Sampson Middle School, Eastern Region

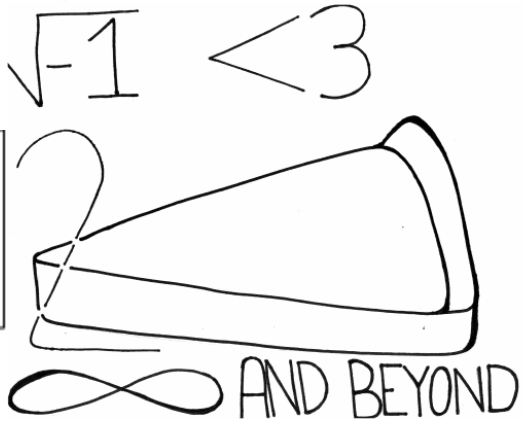


Eastern Region Finalists





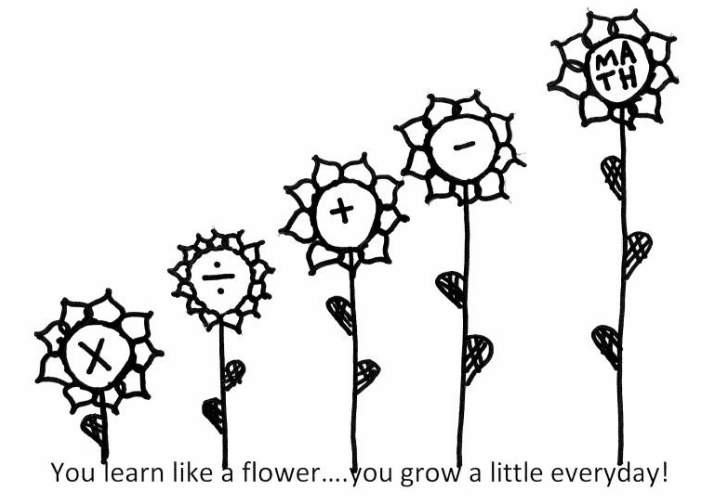
Eastern Finalist: **Jenna Saldana,** 10th Grade, "I Love Pi to Infinity & Beyond", Whiteville High School



Eastern Finalist: **Lilyana Wilson**, 8th grade, "Math is always on my Mind", Sampson Middle School and **Angie Mejia**, 8th grade, "Math is an open book", Sampson Middle School

MATH LOGO CONTEST – WESTERN REGION

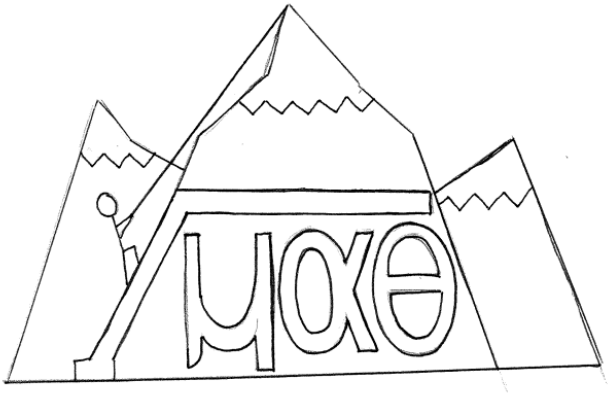
Zoe Brim, 1st grade, "Math can help us learn", Seagrove Elementary
Lacie Cockerham, 6th grade, "You learn like a flower", Elkin Elementary
Daniel Kittrell, 4th grade, "Math", Montelieu Academy of Technology

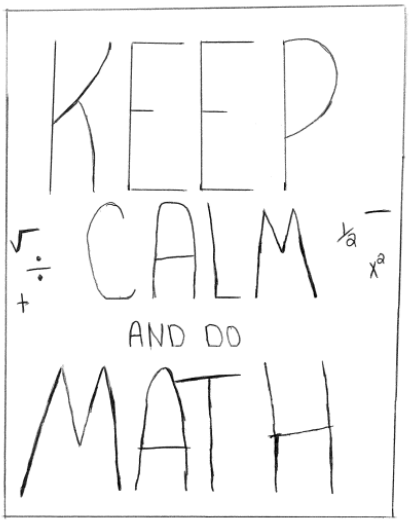


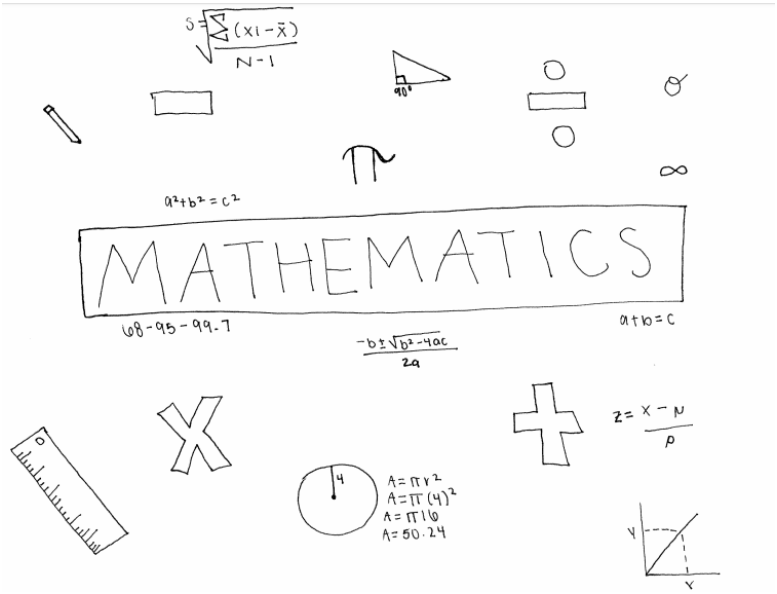
MATH LOGO CONTEST – CENTRAL REGION

Western Region Finalists:

- **Jacob Key**, 12th grade, "μ, α, θ", Ashe County High School
- **Julia Barrett**, 10th grade, "Don't forget to eat your PI", Ashe County High School
- **Lyndsi Holman**, 12th grade, "Keep Calm and Do Math", Ashe County High School
- **Rachel Reynolds,** 10th grade, "Mathematics", Ashe County High School







CPM EDUCATIONAL PROGRAM

Empowering mathematics students and teachers for 28 years through exemplary curriculum, professional development, and leadership

+ Curriculum written by a team of experienced teachers
+ Problem-based lessons for active student engagement
+ Free, comprehensive professional learning progression to support teacher expertise, growth, and leadership
+ Educational nonprofit 501(c)(3)

We are pleased to support the North Carolina Council of Teachers of Mathematics Conference. **Stop by booth 307 to meet with a CPM mentor teacher, see our materials, and request a preview.**

Visit CPM.ORG/cpminfo or scan the QR code to get more information and view our conference sessions for the year.

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Shaping the future.

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hmhco.com/classroom-solutions

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RECORD OF ATTENDANCE

First Name	Last Name	LEA	First Name	Last Name	LEA
Kevin	Scharen	Alamance Burlington	Brooke	McCurdy	Iredell/Statesville
Lindsay	Cox	Alexander	Jessica	Hatley	Kannapolis City
Monica	Davis	Anson	LaKeisha	Snipes	Lee
Heather	Windish	Ashe	Andrea	Hardy	McDowell
Callie	Everett	Asheboro City	Russell	Barnet	Mitchell
Amber	Benfield	Avery	Tabitha	Richardson	Mooresville Graded
Cougar	Caroon	Beaufort	Patrica	Combs	Mount Airy
Sherry	Autry	Bladen	Shauntel	Palmer	New Hanover
Robin	Kelly	Brunswick	Cheryl	Rhea	Newton-Conover
Elliot	Lunsford	Buncombe	Dawn	Guzzi	Orange
Kelly	Baker	Burke	Amanda	Mehering	Pamlico
Julie	Cline	Cabarrus	Bethany	Thomos	Pender
Joy	Philyaw	Caldwell	Kesley	Hagon	Perqimans
Denise	Thomas	Camden	Linda	Lynch	Person
Kim	Hanson	Carteret	Holly	Grisom	Randolph
Molly	Caudill	Chapel Hill-Carrboro	Isalem	Gomez	Richmond
Daniel	Wicks	Charlotte/Mecklenburg	Tracy	Snyder	Roanke Rapids
Karin	Clamann	Chatham	Leinse	Stewart	Robeson
Jennifer	Collins	Columbus	Renne	Gibs	Rockingham
Cindy	Laird	Craven	Jeniffer	Bain	Rowan-Salisbury
Makkeddah	Gilchrist	Cumberland	Amy	Owens	Rutherford
Samuel	DeWitt	Dare	Chrystal	Pope	Sampson
Dawn	Lowery	Davie	Chenese	Palmer	Stantely
Shirley	Lloyed	Edgecomb	Maggie	Mitchell	Surry
Melsia	Sawer	Elizabeth City/Pasquotank	Amanda	Champan	Transylvania
Linda	Stephens	Franklin	Marion	Millican	Union
Deidre	House	Gates	Danilo	Morales	Vance
Maegan	Frederic	Granville	Tonya	Radakovich	Wake
Heather	Davis	Greene	Jennifer	Williams	Watauga
Sarah	Vaughn	Guilford	Andrew	Bass	Wayne
Amy Carter	King	Harnett	Danielle	Yount	Wilkes
Ryan	Brumfield	Haywood	Renee	Pearson	Wilson
Christian	Gonsell	Henderson	Wendy	Bartlett	Winston-Salem/Forsyth
Carie	Kahn	Hickory- City	Angella	Jordan	Yadkin

Presidential Award for Excellence in Elementary Mathematics & Science Teaching

The **Presidential Awards for Excellence in Mathematics and Science Teaching** are the nation's highest honor for mathematics and science teachers. This national award administered for the White House by the National Science Foundation allows outstanding mathematics and science teachers to be recognized for their subject area content knowledge and their ability to motivate students. Each year the program recognizes outstanding mathematics and science teachers from across the United States for their contributions in the classroom and to their profession. In North Carolina, a state selection committee has selected the following K-6 mathematics teachers as finalists:

Rebecca Criste
Cumberland County Schools

Elizabeth Gillikin
Carteret County Public Schools

Sarah Patterson
Lake Norman Charter School

OUTSTANDING SECONDARY MATHEMATICS TEACHERS

NORTH CAROLINA COUNCIL OF TEACHERS OF MATHEMATICS

Promoting Excellence in Mathematics Teaching and Learning for All

Name of Provider: NCCTM

Educator's Name: _____

Professional Development Activity: NCCTM 48th Annual Conference
November 1—2, 2018
Greensboro, NC

Description of Professional Development Activity: This is a two-day annual conference sponsored by NCCTM. Hundreds of sessions and workshops are offered for teachers of pre-kindergarten through college. Topics range from administration to geometry and from pre-calculus to statistics.
**Attention Educator: Professional Development time earned should be the time actually spent in sessions and/or workshops. Attach individual session descriptions to this form when submitting.

Date	Session #	Presentation Title	Presenter	Time	PD Time
				Total Professional Development Hours Accrued:	

I certify that the above named educator accrued the indicated number of Professional Development hours.

_____
Authorized School Administrative Personnel

RECORD OF ATTENDANCE

Thursday Planner	Plan your conference activities here.		
Start Time	Workshop/Session	Session#	Location
8:30			
10:30			
11:30			
12:30			
1:30			
2:30			
3:30			

Awards Celebration
Reception: 4:00pm – 4:30pm Guildford C
Ceremony: 4:30pm – 6:00pm Guilford C

LIGHT Refreshments ~ Door Prize Tickets

Thursday Planner	Plan your conference activities here.		
Start Time	Workshop/Session	Session#	Location
8:30			
10:30			
11:30			
12:30			
1:30			
2:30			
3:30			

This certificate is presented to

_____

in recognition of attendance at the NCCTM 2018 Annual Conference

Greensboro, NC

November 1—2, 2018

NCCTM
NORTH CAROLINA COUNCIL OF TEACHERS OF MATHEMATICS

Julie Kolb
NCCTM President

CERTIFICATE

SPEAKER INDEX

SPEAKER INDEX

NOTES

NOTES