

# Thursday, October 19, 2017

8 – 9 AM

## 1 Welcome First-Time Participants to the Georgia Mathematics Conference

*Kaycie Maddox, GCTM President & Bonnie Angel, President-Elect*

GCTM would like to welcome first time conference attendees with suggestions for how to get the most out of the conference, introduce you to GCTM, and answer your questions. This is an optional session, geared for first-time attendees, new teachers and pre-service teachers.

## 2 Facing Math in 3-D (Grades 6 – 9)

*Dora Brown, Palmer Middle*

Are you using any of the commercially prepared Facing Math books? Most of the time my students like using these materials to review and practice skills, but not this past year. They did not like drawing or coloring, so I created my own version and made it 3-D with a selfie. Come learn how you can create your classroom version of Facing Math in 3-D.

## 3 Growth Mindset and High School Math (Grades 9 – 12)

*Marilyn Ellis, Sandy Creek High School*

This session will examine the importance of having a growth mindset in the high school math classroom. It will also discuss specific ways the math teacher can help students move from a fixed mindset to the growth mindset. It is time for all our students to understand the truth behind the quote, "There is a difference between not knowing and not knowing yet.---Shelia Tobias".

## 4 Google Not the Enemy (Grades 3 – 5)

*Alicia Hinson, Sterling Elementary School*

Give innovative ways to use Google in math elementary class for instruction and communication. Using G Suite for everyday use in the classroom.

## 5 Roller Coasters and Algebra (Grades 7 – 9)

*Basil Lee, Langston Hughes High School*

How can we shift from performing sequences of mathematical procedures and memorizing facts and formulas to applying math concepts critically for the purpose of solving problems in the real world? We will create linear equations in two variables by investigating and solving a relevant real world problem involving Six Flags roller coasters.

## 6 Dive into Engaging Math (Grades 2 – 5)

*Jenny Lockwood, Springdale Park Elementary (Atlanta Public Schools)*

In this session, we will delve into student-centered math tasks that are aligned to Georgia Standards of Excellence and incorporate children's literature. Tasks will help students build their conceptual understanding and procedural fluency. Attendees will participate in games and create hands-on activities to use in their classrooms.

## 7 Making Guided Math Work for You and Your Students (Grades K – 5)

Location: Bankers

*Jesse Michmerhuizen, ETA hand2mind (Repeat Session on Friday)*

Guided math provides a structure for best practices: differentiation, formative assessment, hands-on learning, small group and whole group, spiral review, etc... but it isn't easy. Whether you are just learning about guided math or have been using it for years, this session is designed to make guided math work for you and your students. You will leave with resources and ideas to put into your classroom immediately.

### **8 Thinking Outside (and Inside) the Box (Grades 9 -12)**

*Don Slater, Lassiter High School*

Let's explore what one can do with a box -- like how many balls are needed to fill a box, how many faces are painted if we fill slice a solid box into blocks, or determine the maximum volume that can be held by a box formed from a sheet of paper...and what if the sheet of paper isn't rectangular?

### **9 The Breakdown of Breakout EDU (Grades 9 -12)**

*Sarah Swain, Jeff Davis High School*

Have you heard of the "Escape the Room" craze? Well come hear about the education version, Breakout EDU. Students work together to solve a series of critical thinking puzzles in order to open a locked box. This session will give you a breakdown of what Breakout EDU is, how to use it, and tips on making your own breakout session affordable and even FREE!

### **10 Cultivating Spatial Sense in 3-D (Grades 5 -7)**

*Sandra Davis Trowell, Valdosta State University*

Participants will experience classroom tried activities that help students develop spatial sense through three dimensional activities. We will explore how these activities can support the development of multiplicative thinking as well as supporting the development of meaning for volume and surface area.

## **8 – 9:30 AM**

### **11 Fostering a Problem Solving Culture with the 3 Read Protocol (Grades K – 12)**

*Lenisera Barnes-Bodison, DeKalb County School District*

Come to this session to learn how to help your students engage in meaningful mathematics discussions. We will explore the 3 Read Protocol as a problem-solving process that highlights three of the Mathematics Teaching Practices from NCTM's Principles to Actions: facilitating meaningful mathematical discourse, posing purposeful questions, and supporting productive struggles.

### **12 Encouraging Discourse through Math Tasks (Grades K – 8)**

*Jane Hannon, ETA hand2mind*

Come check out a new product from ETA hand2mind! Math Tasks is a series of books organized by grade bands (K-2, 3-5, 6-8). Each book is centered around a specific manipulative--Base Ten Blocks (K-5 only), Color Tiles, Cuisenaire Rods, Pattern Blocks, Snap Cubes, and Geoboards (6-8 only). Come experience some of the grade level tasks! Free samples will be given away!

### **13 Using Simulation to Prepare High School Students to Reason Statistically (Grades 8 -12, College)**

*Christine Franklin, American Statistical Association (Keynote Speaker)*

"Individuals who aspire to most careers in our data centric society must be statistically literate. This session will focus on using hands-on simulations to be followed by technological simulations and randomization tests. This strategy will provide a learning trajectory enabling our high school students to gain statistical reasoning skills needed for understanding key statistical concepts of sampling distribution, statistical significance, and P-value. Pedagogical strategies that promote discourse fluency will be discussed."

### **14 Math/Science Integration for a Sustainable Planet (Grades 6 – 8)**

*Kenneth Jones, Columbus State University, UTeach*

In this hands-on workshop, participants will participate in innovative activities that illustrate the math behind real-world ecology concepts such as human population growth and natural resource use. Presented strategies include

creating representational models with manipulatives, cooperative group problem-solving challenges, graphing and analysis.

#### **15 They Should Know This - Math Game Remedies for Middle Years (Grades 4 – 8)**

*Carrie Brockway, Box Cars and One-Eyed Jacks*

We've all said it at one time or another when students don't know their basic math concepts. Come prepared to play games that will provide you with strategies and activities that help students fill the gaps in their math. Games will focus on operational fluency including multi-digit work, basic facts, place value concepts including rounding and expanding #'s, comparing numbers, working in base ten, mental math strategies and more. Gameboards, student samples, journal extensions and math talk will be shared throughout. Great for ELL, RTI and regular programs.

#### **16 Who wants to be a Millionaire? (Grades 3 – 5)**

*Cheryl Sjoquist, Alexander II Magnet School*

Are your students struggling with number sense? Do your students know how many commas and zeros it takes to make a million? Can they tell you the value that represents half of 10,000? Come learn strategies to strengthen number sense and watch the fear of larger numbers dwindle.

#### **17 Exploring Linear Equations Using Various Coordinate Systems (Grades 9 – 12, College)**

*Irma Stevens, University of Georgia*

How do we talk about linear equations when we are no longer looking at straight lines? How does the orientation of numbers on a Cartesian system affect discussions about rate of change? In this session, we will discuss what a constant rate of change between two quantities entails, explore how to visualize and construct linear relationships in alternative coordinate systems (e.g., polar coordinate system), and compare the results to the conventional Cartesian system.

#### **18 Gradually releasing student into math fun! (Grades 4 – 8)**

*Eva Solomon, Gwinnett County Public Schools*

Gradual release should be the goal for all. The method of "I do/Modeling instruction", "We do/Guided Instruction", "You do it together/Cooperative/Productive Group learning", "You do it alone/Independent learning" is challenging but doable and can make math fun. In this session, attendees will participate in a variety of gradual release hands-on strategies for upper elementary/middle school math. Participants will leave with resources that can easily be incorporated into their classrooms.

#### **19 Maintaining Health & Wellness for Math Educators! (Grades K – 12, College)**

*Dr. Dottie Whitlow, MoveMore, LLC (Repeat Session on Friday)*

As Educators, often the last person on our list to take care of & assist is ourselves. This can lead to health issues, pain and stress that effects health, outlook & energy. As a 30+ year educator, Dr. Whitlow experienced these issues & is a certified Movement Re-education Specialist & Ageless Grace Educator to eliminate pain, restore health & energy. All of it is brain & neuroplasticity based & helpful for people of all ages!

### **8 – 10 AM**

#### **20 Ways to Increase Rigor & Student Motivation: Approaching Our Work With a Growth Mindset (Grades 6 – 12)**

*Terry Haney, Northwest Georgia RESA*

This session will focus on ways to re-energize the secondary mathematics classroom by infusing rigorous content with specific growth mindset strategies. Participants will experience a variety of examples about how to better engage students with the Standards for Mathematical Practice. Specific practitioner examples will be presented and shared.

## **21 Unitizing, Partitioning, and Iterating – Bridging whole number reasoning and Fractional Reasoning (Grades 3 – 6)**

*Seyoung Holte, Clarke County School District*

Are your students “allergic” to fraction? Do you dread teaching problems with multiplication, division, and fraction? In this session, we will explore the wonder of mathematical connections between the whole number reasoning and fractional reasoning as we “DO” the math through unitizing, partitioning, and iterating. Throughout the session, we will look for and discuss opportunities where Standards of Mathematical Practices are promoted and NCTM Effective Mathematics Teaching Practices are applied.

## **8:30 – 9:30 AM**

### **22 Using Google Classroom to Promote Mathematical Discourse in the Elementary Classroom (Grades K – 5)**

*Melissa Paris, Whitfield County Schools (Featured Speaker)*

Feeling overwhelmed as you look for meaningful ways to integrate technology into your teaching? Explore how you can use the platform of Google Classroom to develop a culture of rich mathematical discourse. Through active participation, you will leave with a better understanding of activities that can be easily implemented in an elementary classroom, along with many ideas for resources to support you along your journey.

## **8:30 – 10 AM**

### **23 Breakout of Math! (Grades 6 – 12)**

*Ashley Clody, Cobb County Schools*

Do you want your students to take ownership of their learning while being able to problem solve, collaborate, communicate and gain content knowledge? If you answered "Yes!" then this session is for you. Learn how to implement the Breakout EDU game into your own classroom. We will make use of an actual kit and the digital game online while differentiating learning and engaging students.

### **24 SMART Board Workshop for Novices (Grades 8 -12, College)**

*Allen Wolmer, Atlanta Jewish Academy*

“SMART Board Workshop for Novices” In this Workshop, targeted at novice SMART Board users, math teachers will see how to EASILY and EFFICIENTLY use their SMART Board and SMART Notebook software to get started. Bring your laptops loaded with SMART Notebook 11, 14 or 16!

## **9:15 – 10:15 AM**

### **25 Use Math Investigations in Project-Based Learning (Grades 4 – 12)**

*Ron Cox, Mathspace (Repeat Session on Thursday)*

Mathspace’s Math Investigations are open-ended discussions and activities where students are encouraged to come up with their own hypotheses and mental models to compare and critique with their classmates. In this session we will explore how to use these Investigations with Project Based Learning to create a dynamic learning experience for your students.

### **26 Using Nearpod in Elementary Math (Grades K – 2)**

*Christie Holtman, East Fannin Elementary (Repeat Session on Friday)*

Even kindergarten students can present their ideas using Nearpod. This session will show teachers how to create simple student focused lessons and how to use these lessons to encourage math discussions.

### **27 Fun Hands-on Activities To Generate Linear Models (Grades 7 -10)**

*Kathleen Mittag, University of TX at San Antonio, Retired*

Participants will do a “Water Dripping” experiment using a graduated cylinder and foam cup with a hole in the bottom. Time is the independent variable and volume is the dependent. The second activity will use a damp tennis ball rolled on grid easel paper. Participants will draw axes then determine six ordered pairs. A worksheet will be provided for each activity. One additional activity will be given to participants.

### **28 The TI-84CE and TI-Nspire CX - Which one is right for your classroom? (Grades 8 – 12, College)**

Location: Bankers

*Beth Smith, Texas Instruments (Repeat Session on Friday)*

Let’s look at a side-by-side comparison of the TI-84CE and TI-Nspire CX to help determine which is best for you and your students. We will learn about and compare the basic calculator and graphing features of both platforms. This session serves as a great introduction to both the TI-84CE and TI-Nspire CX. We will also briefly look at free TI activities and test-taking resources. Door prizes!

## **9:30 – 11 AM**

### **29 Diagnostics Math: A plan to FILL those gaps (Grades K – 6)**

*Michelle Clay, Floyd County*

Participants will be given an overview of a Diagnostic Math program created to pinpoint math weaknesses using the Numeracy Project assessments of the JAM and GLoSS. The program has progress monitoring sheets, data collection sheets and activities to fill the gaps necessary to bring ALL students to success in grade level curriculum. This is a perfect plan for RTI.

### **30 Fearless with Fractions (Grades 3 – 6)**

*Jacqueline Hennings, Rockdale County (Repeat Session on Friday)*

Participants in this session will explore fractions conceptually using fraction towers. We will develop the concepts of equivalency, comparison, and the four operations of fractions.

## **9:30 – 11:30 AM**

### **31 Teaching for Mathematical Understanding in Grades 7-12 (Grades 7 -12)**

*Patricia Baltzley, NCSM (Featured Speaker)*

Bridging mathematical concepts for 7-12 students from concrete to representational to abstract can be challenging, but rewarding. Together we will model this process by using a mathematical task to see how as teachers we can move students across the bridge of mathematical understanding as well as how we can engage students in mathematical discourse.

## **10 – 11:30 AM**

### **32 Student by Student and Standard by Standard (Grades 6 -12)**

*Jake Collins, Statesboro High School*

In this session, we will discuss a variety of strategies to improve student achievement. We will learn how to formatively assess your students quickly and easily, remediate and enrich by standard, and have students facilitate their own learning. Extensive PLC knowledge will be shared. An Enhanced Learning Targets (ELT) template which

enables you to remediate and enrich easily will be shared. Teachers will walk away from this session with concrete strategies to use in their classrooms the very next day.

### **33 What If My Students REALLY Understood the Basics of Algebra? (Grades 6 – 8)**

*Martha Eaves, Retired Georgia Educator; now consulting in mathematics education*

The use of a Concrete-Representational-Abstract (C-R-A) model to introduce integers, absolute value, like terms, and solving equations provides multiple opportunities for successful outcomes in mathematical understanding for middle school students. I will demonstrate the use of Algeblocks® to present these topics in a way that supports students in building a solid foundation of basic concepts instead of relying on memorization of (what students often view as) arbitrary rules. Algeblocks® will be provided by ETA Hand2Mind.

### **34 Piece it Together with Fractions (Grades 3 – 8)**

*Carrie Brockway, Box Cars and One-Eyed Jacks*

All Come prepared to play games that incorporate the use of easily found manipulatives including cards, dice, number lines and fraction pieces. Games and strategies will cover the following concepts: equivalency, common denominators, decimal, percent, operations with fractions. The activities are engaging and will help students move from a concrete understanding to abstract levels. Student samples, gameboards, journal and math talk extensions will be shared.

### **35 In-Class Flip Using Blackboard (Grades 6 – 8)**

*Ashley Ellis, Whitewater High School*

Come learn how I use Blackboard in my classroom, including an in-class flipped model I've implemented in my Algebra 2 class. Students watch instructional videos that I have pre-recorded and follow along with guided notes at their own pace. I am able to give students individual help throughout the entire period while they learn and complete assignments, which has increased student achievement and engagement! My students love it, and you will too!

### **36 Maximizing Your Instruction with High Tech and Low Tech Tools (Grades 2 – 3)**

*Morgan Graiser, Atlanta Jewish Academy (Repeat Session on Friday)*

Do you feel like it is hard to keep up with all the Common Core State Standards? It is like a juggling act especially in the way that you set up your math block. Come to a session where you will walk away with a toolbox of ideas that you can utilize in the classroom to maximize classroom instruction using a variety of high tech and low tech resources.

### **37 Math, Art, Creativity, and Innovation (Grades 8 -10)**

*Renuka Rajasekaran, Luella High School*

Creativity and innovation are the transformational forces of the human kind. There is a hitherto unforeseen demand for both in the present world. Creativity accelerates the mind's ability to unleash possibilities resulting in innovation, which is a valuable change made to conventional systems/arrangements. Given that creativity is ripe and latent in children and pre-adults, experts advocate that creativity and innovation need to be fostered at schools in all learning tasks organized for the students. In this interactive PL Session, participants acquire hands-on practice on art integration into math to foster creativity and innovation in the teaching-learning process of math.

### **38 Visualizing Vectors (Grades 10 – 12)**

*Adam Raymond, Rockdale Magnet School*

How do we allow students to experience and play with vectors? We'll explore different ways to present vectors and why they matter to the students with an emphasis on physics.

### **39 Learning Through Collaboration and Play (Grades 6 – 12)**

*Lorenzo Robinson, Fulton County Schools (Repeat Session on Friday)*

Teachers will be introduced to various collaborative processes that can be used to: increase student engagement and understanding of a concept, and expand students' problem solving capabilities. The games and problems presented will undoubtedly enhance any math educator's toolkit. These strategies are designed to add spice to your math classroom and wake up the learning in your students.

**40 Enriching Number Talks With Number Theory, Puzzles and History (Grades K – 12, College)**

*Sunil Singh, Scolab (Keynote Speaker)*

In order to ensure that students have a deep understanding of number sense/operations, the number talks/conversations that we have with them should invoke intrinsic curiosity and wonder. This is best done by exposing even elementary students to rich number theory, puzzles and even unsolved problems in mathematics! In this workshop, teachers will learn the importance of framing number sense/discourse with engaging context and relevance.

**41 Walk the Number Line for Research-Based Results! (Grades K – 5)**

*Kim Sutton, Creative Mathematics*

"Come and experience how many ways a number line can impact your elementary classroom! You will love the meaningful handout, tool kit and motivating ideas that will be shared! Be prepared to sing, dance and leave inspired for teaching alternative algorithms, making change, elapsed time, rounding and more!"

**42 Teaching Mathematics for Social Justice: Discussing Societal Issues Through a Mathematical Lens. (Grades 6 – 12)**

*Cristina Tyriss, Russell Middle School*

This session will include several activities used in a 7th grade mathematics classroom aimed at understanding societal issues through a mathematical lens. In each of these activities, students are encouraged to discuss how we can use mathematics to investigate controversial issues in our world and how mathematics can be used as a tool for advocacy.

**43 MATH TALKS are not just for STUDENTS (Grades 6 – 12)**

*Zacharel Veal, Carver Road Middle School*

Learn how to create Professional Learning Communities that engage teachers to create a culture of high academic expectations. In this session, learn strategies and processes that are used to increase student achievement, including how to create a climate of high expectations and use data driven instruction to develop action steps and progressing monitoring steps to improve your school.

**44 Let's Get Visual (Grades 8 – 12, College)**

*Stephanie Vidrine, Woodstock Middle School*

Ignite the visual region of your student's brain to get their synapses firing. We will discover together how the learning process is enriched when mathematical connections are made through the use of visual models. Student-centered activities will be presented which will engage the participants in discovering connections between the interwoven forms of quadratic equations and their graphs. Also, explore exponential function transformations Mardi Gras style.

**10:30 – 11:30 AM**

**45 Use Math Investigations in Project-Based Learning (Grades 4 – 12)**

*Ron Cox, Mathspace*

Mathspace's Math Investigations are open-ended discussions and activities where students are encouraged to come up with their own hypotheses and mental models to compare and critique with their classmates. In this session we will explore how to use these Investigations with Project Based Learning to create a dynamic learning experience for your students.

**46 Not So Stressful Differentiation Part II (Grades 6 – 8)**

*Alison Fridborg, Cobb County School District*

During this interactive session, teachers will learn how on the spot differentiation can occur with minimal prep work to meet the needs of students during opening, work session and closing. Teachers will add engaging strategies to their “teacher toolbox” that allow students to communicate, justify and explain their understanding of the content at different levels.

**47 Selecting and Sequencing Student Work During the Lesson (Grades K – 8)**

*Lloyd Jones, Curriculum Associates*

This workshop-format session will focus on ways to facilitate & enhance mathematical discussions in the classroom based around major content areas. Simulated lesson components provide opportunities to practice questioning strategies, giving attendees tools & techniques they can immediately use to manage conversations, evaluate student responses & elevate the rigor of discourse to boost college & career readiness. Participants will learn new questioning strategies to help students make conjectures, talk, question, and agree or disagree about problems in order to discover important mathematical concepts.

**48 It's All About Ten (Grades K – 2)**

Location: Bankers

*Lora Keys, Alpharetta Elementary/Fulton Schools*

How many more do we need to make 10?" This question is the basis for our number system, and students often have difficulty with the concept. With an understanding of 10, students will be able to take steps to further their number sense. This session will provide teachers with engaging examples and hands-on activities that can be used in the lower elementary classrooms.

**49 1 to 1 Million: Number Sense Progressions for K-5 (Grades K – 5)**

*Arjan Khalsa, Conceptua Math*

How do we tie together number representations to form consistent and deep understandings in our K-5 students? Come explore step-by-step grade K to 5 progressions from number paths to open number lines, and from counting collections to place value disks. Receive free online links and handouts to support number sense through the elementary years.

**50 Opening "Closed" Questions (Grades 6 – 12)**

*Karen Kline, Kennesaw Mountain High School/Cobb County School System*

Looking for a way to engage students in mathematics conversations? Come learn how to take closed questions in our textbooks into open questions that encourage student dialogue.

**51 Explicit CRA with Fractions (Grades 4 – 5)**

*Joshua Nelson, Cotton Indian Elementary School*

Students often struggle with making a strong connection between concrete models, accurate visual representations, and abstract strategies/algorithms. Certain manipulatives, used in a specific manner, facilitate these connections better than others. In our session, we will explore how to subtract and multiply fractions in such a way that students can easily bridge the gap between the concrete, representation and abstract.

**52 Tangrams: More Than Just A Picture (Grades 3 – 5)**

*Miranda Westbrook, Cobb County School District*

Tangrams are perfect for creating designs, but did you know they can be used to conceptually teach other concepts in Mathematics? Tangrams are an excellent tool for exploring fractions, classifying shapes, and calculating area and perimeter. In this session, participants will use Tangrams to investigate various problem-solving tasks and engage in mathematical discourse to communicate their reasoning. Are you ready to explore all that Tangrams can offer your students?



## 1 – 2 PM

### **53 Visual Literacy: A Picture is Worth Many Questions (Grades K – 12)**

*Michelle Bateman, DeKalb County School District*

Imagine a classroom not starting with the Problem of the Day, Sponge Activity, or Warm-up but a PICTURE. Presenting images is a key to student's success with understanding and making sense of math in the real world. This session will provide teachers with many opportunities to see and experience how pictures can launch understanding and springboard to a rigorous lesson connected to the Georgia Standards of Excellence.

### **54 Learn to Love Math Facts! (Grades K – 8)**

*Richard Buchner, Innovative MATH Solutions Inc. (Repeat Session on Friday)*

This session will present ways to enhance math fact fluency with a good blend of strategy and practice. Methods discussed demonstrate ways to eliminate/reduce math reluctance while building problem solving skills while encouraging student resilience. This session will present data from piloted programs and demonstrate how easy, effective and important the fact fluency foundation impacts longitudinal success.

### **55 More Than Meets the Line (Grades 8 – 9)**

*Kelly Edenfield, University of Georgia (Repeat Session on Friday)*

Finding the equation for the line of best fit is just the beginning. Why do we always stop working on a best fit problem when we find an equation? Should we care about the slope, y-intercept, and making predictions? What are some misconceptions and pitfalls when teaching and learning lines of best fit? Let's explore developing understanding of lines of best fit!

### **56 AMP Ratio and Proportions: STEM Integration through Mathematics Practice Standards (Grade 7)**

*Douglas Edwards, Georgia Institute of Technology/CEISM*

Students model scientific investigation data of blue crab mating and predator events.

### **57 Building Coherence Through Area Concepts (Grades 5 – 8)**

*Heidi Eisenreich, Georgia Southern University*

Engage in experiences designed to develop a deeper understanding of teaching area with coherence. Make sense of the progression of area through elementary and middle grades by exploring hands-on tasks as learners. Area formulas for quadrilaterals and the circle will be of focus. Ideas to differentiate these tasks for use in your classroom will be shared.

### **58 Results from a Workshop for Math Team Sponsors (Grades 9 – 12, College)**

*Mo Hendon, University of Georgia*

In this session we give a report on the outcome of two workshops for Math Team sponsors. The workshops were funded by a GCTM Special Projects Grant.

### **59 Trash Those Timed Tests (Grades K – 5)**

*Sandra Hogan, Canongate Elementary School*

Trash the timed tests and math anxiety by helping your students build number sense and fact fluency through authentic learning opportunities. Come prepared to discover better ways to help your students develop number sense and fluency with facts through hands-on tools, discussions, games, and story problems.

**60 Let's get those kids talking and improve Math Discourse (Grades K – 5)**

*Lloyd Jones, Curriculum Associates*

In this session, participants will experience instructional K-5 strategies that support the development of positive attitudes toward math. Attendees will explore and practice ways of sharing feedback and recognizing multiple ways of approaching a problem that help equip learners with a growth mindset toward mathematics learning. Attendees will learn strategies for nurturing and strengthening students' disposition, walking away with ideas for structuring lesson plans, asking questions, and facilitating classroom discourse.

**61 Think Outside the Content Standards! Critical Thinking Math for ALL (Grades K – 8)**

*Brian Lack, Forsyth County Schools*

"School mathematics" turns many students off because it seems esoteric, irrelevant, and boring. In this session, participants will solve challenging and fun math tasks while learning to apply generalizable instructional principles that promote critical thinking, understanding, and keys to unlocking the richness of mathematical patterns and relationships.

**62 Combining Coding with Curriculum: Using Blue Bots to Teach Code and Curriculum (Grades K – 4)**

*Melissa Madsen, W.C. Britt Elementary School*

In today's classrooms, time is of the essence and finding the time to teach anything extra can be difficult. BlueBots help join curriculum with coding. These robots and their free associated app allow students to practice curricular skills while simultaneously writing and debugging code. Students move from concrete turn by turn coding to more abstract coding. Students also learn soft skills like turn taking, grit, and perseverance while problem solving with BlueBots or the BlueBot app.

**63 Communicating Mathematically through Math Centers (Grades 1 – 5)**

Location: Bankers

*Angie Meredith, ETA hand2mind*

Come check out a new product from ETA hand2mind! Differentiated Math Centers integrate leveled hands-on support for the essential content where teachers spend a majority of instructional time. These kits are available for grades 1-5 and are all-inclusive with leveled task cards as well as manipulatives. Free samples will be given away!

**64 Parent Academy: What's That? (Grades K – 5)**

*Polly Roe, Alexander II Math & Science Magnet School*

Are your students struggling with conceptual learning? Are parents hampering the learning process? Do students return homework more confused than ever? Come to this session to learn how to actively engage parents to use the methods used in class. Often parents want to help but don't know how. Parent Academies are the key to greater success!

**65 I See You Care: Reengaging Reluctant Learners (Grades 6 – 9)**

*Pamela Seda, Southwest Dekalb High School (Repeat Session on Friday)*

For too many students, the cost of learning mathematics is too high for them. Unlike failed learners, who at least try, intentional non-learners believe that if they don't try, they can't fail. In this interactive session, participants will learn to use strategies from an equity framework to re-engage reluctant learners.

**66 Numbersville a STEM Village (Grades K – 5)**

*Kathy Spruiell, Gwinnett County - Norton ES*

Join us to learn how to incorporate guided math, project-based learning, the engineering process, and STEM/STEAM. The Numbersville project is a unique and innovative way to engage your students' number sense with real world

connections during your guided math workshop time. Teachers will leave with a tool kit of resources to support next steps in implementing these strategies in their classrooms.

## 1 – 2:30 PM

### 67 Learn Expected Value by Playing the Game of Pig! (Grades 11 – 12)

*Brian R. Lawler, Kennesaw State University*

Much of the mathematics content of the fourth-year mathematics courses created by the GA Department of Education is both unusual and interesting. In the "Advanced Mathematical Decision Making" course, students use probability and expected value to inform everyday decision making. In this workshop, you will have the opportunity to revisit probability and expected value by analyzing a game, and learn from teachers about successful classroom teaching strategies for this topic.

### 68 Using Literature to Teach Mathematics (Grades K – 8)

*Dr. Jacquelyn L. Mesco, Dalton State College (Repeat Session on Friday)*

This session will discuss using literature to increase mathematics instruction and understanding. The presenters will provide a variety of reading and writing activities that provide cross-curricular connections with mathematics. Handouts and demonstrations will be provided as well as a list of resources.

### 69 Place Value With Pizzazz! (Grades 2 – 4)

*Kim Sutton, Creative Mathematics*

Children love these important place value strategies! Come and feel the motivation for place value understanding with games, songs, dances and meaningful activities. You will receive a powerful handout along with student-generated tools and dice to make these strategies easy to implement in your classroom on Monday!

### 70 Mastering the Flip (Grades 8 – 12)

*Zach Thomaswick, Habersham 9th Grade Academy*

Flipped-Mastery is a self-paced instructional model that combines elements of both a flipped classroom and standards-based assessments. The session will discuss the details of implementing a flipped-mastery model in a ninth-grade algebra with support classroom. We will go over the challenges and the benefits of the model as well as tips and tricks that we have learned through our experience.

### 71 Making "Sense" of Function (Grades 8 -12)

*Dennis Wilson, Landmark Christian School*

Student comprehension of functions is more complete when they are presented with multiple representations. In this session, participants will examine functions outside of the traditional numerical, algebraic, and graphical models. Using the TI-Innovator, numerical input will be transformed into real-world output that students can see and hear. Real-world input will then be used to create numerical and graphical output. Come hear the difference between linear and exponential functions.

### 72 SMART Board Workshop for Intermediate Users (Grades 9 – 12, College)

*Allen Wolmer, Atlanta Jewish Academy*

In this workshop, targeted at experienced but not necessarily expert SMART Board users, math teachers will learn more advanced techniques to make their Algebra, Precalculus, and Calculus lessons even more effective, while at the same time making them more EFFICIENT! Bring your notebooks loaded with Notebook 11, 14 or 16!

## 1 – 3 PM

### 73 What's on the Menu? Using Choice Boards to Engage All Learners (Grades 2 – 5)

*LaTonya Brown, DeKalb County School System (Repeat Session on Friday)*

Are you looking for a way to engage all learners? This is the session for you! Choice boards provide a way to differentiate instruction, support multiple intelligences, and promote student achievement and engagement. This session will provide participants with directions on creating choice boards and sample activities. Participants will participate in a choice board simulation that will leave them wanting more!

**74 Teaching for Mathematical Understanding in Grades K-8 (Grades K – 8)**

*Patricia Baltzley, NCSM (Featured Speaker)*

Bridging mathematical concepts for K-8 students from concrete to representational to abstract can be challenging, but rewarding. Together we will model this process by using a mathematical task to see how as teachers we can move students across the bridge of mathematical understanding as well as how we can engage students in mathematical discourse.

**75 Number Talks: Fractions, Decimals, and Percents (Grades 3 – 8)**

*Kinga Rowell, Rome City Schools - West End Elementary*

This session will focus on the Number Talks: Fraction, Decimal, and Percents text from Sherry Parish. The presenter will focus on implementation of concepts in the book. Other ideas for reinforcing fraction, decimal, and percent concepts through hands-on materials and classroom discussion will be included. The importance of building a foundation in concrete understanding of these concepts will be the focus of the presentation. Having the text will be especially helpful.

**76 The Problems with Problem Solving (Grades K – 5)**

*Kassidy Moore, Chapel Hill Elementary School (Repeat Session on Friday)*

The goal of this session is to provide participants with a toolbox for developing best practices that have been proven to aid students in becoming mathematically proficient problem solvers. Teachers will leave with a clear understanding of how to effectively plan for and engage students in meaningful problem solving activities.

**2:15 – 3:15 PM**

**77 AMP Statistics: STEM Integration through Mathematics Practice Standards (Grades 6 – 9)**

*Douglas Edwards, Georgia Institute of Technology/CEISMC*

Students model packaging procedures hands on to decide on the most consistent effective procedure to make the most packages. Students' reason quantitatively using measures of center and variability to decide on the most effective procedure. The module covers basic GSE concepts in measures of center and spread.

**78 Helping Parents Learn Different Strategies: Whole Numbers (Grades 1 – 5)**

*Heidi Eisenreich, Georgia Southern University*

Do you get emails from parents asking how to use strategies their children are learning because, "That's now how we learned it?" Come and learn how one Parent Workshop, which focused on whole number concepts and operations, was created and share ideas on how to implement a similar workshop.

**79 Math Contests, Competitions, and Tournaments: What's Available? (Grades 6 – 12)**

*Chuck Garner, Rockdale Magnet School for Science and Technology*

If you are just starting a Middle or High School Math Team, or are interested in starting one, this session is for you! There are many opportunities for middle and high school students to enrich their enjoyment and knowledge of mathematics! Competitions and tournaments occur all over the state, and there are many contests you can do at your school! Come find out about all of these opportunities!

### **80 On the Road to Personalized Learning (Grades 6 – 8)**

*Heather Hagood, Luella Middle School*

Personalized Learning is spreading...but how does it work in math class? Come hear about our journey toward Personalized Learning.

### **81 Extended Response through Google (Grades 3 – 12)**

*Meagan Luschen, Odyssey Charter School*

In this session, we will explore how to find and create extended response items including Milestone sample items. Then we will look at how to use these items in the classroom using Google forms and Google classroom. Skills can be used in classrooms in all grade levels.

### **82 How is discourse in math promoted beyond the four walls of your classroom? (Grades K – 12)**

*Michelle Mikes, Cobb County (Featured Speaker)*

We are all stakeholders in the education of our students. Are you a content specialist? a mentor? a coach? a teacher? an administrator? If so, then come join our panel of experts for insight on ways other stakeholders beyond the four walls of your classroom are promoting discourse with our Georgia Standards of Excellence for Mathematics. Learn how to improve the quality of mathematics education for our primary stakeholders, our students.

### **83 Parent Engagement: Empowering Mathematics in the Community (Grades K – 5)**

Location: Bankers

*Vinnie Prasad, Cobb County*

Have you ever wondered how you can get your students' parents more involved in their math? We have your solution! This session will provide hands on activities to enhance parent understanding of the K-5 common core standards. We will focus on engaging hands on math games. Attendees will leave is session with a parents math night kit.

### **84 Engaging Students with Fraction Tasks (Grades 4 – 6)**

*Marnie Phipps, University of North Georgia*

In this session participants will engage in a variety of tasks that stimulate critical thinking and deepen understandings of fractions. The tasks are designed to facilitate student reasoning and problem solving while developing their conceptions of quantity. These tasks can be implemented in the classroom with minimal additional resources.

## **2:30 – 4 PM**

### **85 Tooling Around with Equations (Grades 6 – 8)**

*Kelly Edenfield, University of Georgia (Repeat Session on Friday)*

Come explore how to use common elementary school mathematical tools (i.e, cuisenaire rods, bar models, double number lines) to develop conceptual understanding of solving equations. We will investigate the tools and solve problems that will improve your students' understanding of solving one- and two-step equations. Then we will discuss how this work leads to procedural fluency.

## **2:30 – 4:30 PM**

### **86 An Alternative APPROach to Formative Assessment (Grades 1 – 11)**

*Taquavia Jones, Stephenson High School*

In the age of technology, incorporating engaging apps such as Celly, EdPuzzle, and Recap in addition to traditional formative assessments, can be beneficial for teachers and students. These technological tools provide a quick glimpse into students' mastery of concepts. Recap allows teachers to pose questions and students to respond via creating videos. Celly is used to encourage interaction between students and teachers using higher order questioning. EdPuzzle can be used in a flipped classroom model.

### **87 What's you mood? (Grades 6 – 12)**

*Beth Smith, Texas Instruments*

Learn how to use your calculators, a TI-Innovator hub, and some imagination to get kids excited about coding and engineering. This session will help any coding novice become comfortable with the basics by challenging them to create a Mood Ring using a little imagination, cooperation, and coding on their calculator! Door prizes!

### **88 Classroom Misbehavior Creating a Culture of Discord (Grades 1 – 11)**

*Peter Vajda, Center for Teacher Effectiveness*

Frustrated by students' misbehaviors? Discipline matters taking up valuable teaching time? I'll share some core beliefs and introduce you to theories that help you understand the impact of low level inappropriate behaviors on your students and classroom. 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.

## **3 – 4:30 PM**

### **89 Coaching Circles = Enhancement (Grades 3 -12)**

*Kerry Davis, Eastbrook Middle School*

Do have a lesson, an activity, or an idea that needs to be enhanced or re-designed before implementing it with students? Bring your activity, idea, or a piece of student work to this interactive session and walk away with ideas on how to improve the task to be more engaging for students. You will engage in a "coaching circle" that can be used with colleagues or adapted for student use.

### **90 Creative Writing in the Mathematics Learning Environment (Grades 3 – 8)**

*William Lacefield, Mercer University*

Creative writing can serve as an avenue for learners to examine and portray their understanding of mathematics vocabulary, concepts, and skills. In this session, participants will immerse themselves in opportunities to create prose and poetry inspired by standards-based mathematics learning. Types of writing will include sentence frame completion, definition poetry, memory joggers, concept-infused stories, riddles, and limericks. Participants will be invited to share how they have incorporated writing into mathematics learning opportunities.

### **91 What is the Best Voting Method? (Grades 11 – 12)**

*Brian R. Lawler, Kennesaw State University*

Much of the mathematics content of the fourth-year mathematics courses created by the GA Department of Education is both unusual and interesting. In the "Advanced Mathematical Decision Making" course, students analyze various methods for voting to determine which is best for a particular situation. In this workshop, you will have the opportunity to learn the mathematics of voting, and learn from teachers about successful classroom teaching strategies for this topic.

**92 Talking Math: Questions that Promote Mathematical Discourse (Grades 6 – 8)**

*Angela Leach, Redan Middle School*

Increasing rigor in the classroom has also increased the number of struggling students and teachers. For learning to occur, students must be engaged. This session will allow participants to discover a variety of questioning techniques that lead to a more student engagement and a deeper understanding of mathematics concepts. Participants will be empowered to aid students in developing essential skills that moves beyond simple memorization of concepts. Participants will leave with a list of question techniques with examples that can be immediately used in any mathematics classroom.

**93 Making Math R.E.A.L (Relevant, Experiential, Applicable, Lively) (Grades 3 – 5)**

*Demetrius Nelson, Clay Elementary School/Cobb County School District*

Participants will learn of highly engaging retention activities and approaches to assist 3rd-5th students understand math standards involving multiplication, order of operations, fraction concepts that connect to the classroom and dining.

**94 STEM Bootcamp: Getting into Shape for STEM (Grades 1 – 5)**

*Angela Wright, Dekalb County School District*

Need a crash course in elementary STEM? This is the session for you! You will learn the fundamentals of STEM instruction, explore mathematics integration, and participate in an interactive, hands-on activity that will STEMulate your brain!

**3:30 – 4:30 PM**

**95 Making the Most out of Manipulatives in Math using Cuisenaire Rods (Grades K – 5)**

*Roberta Avery, Richmond County School System*

Using the CRA (Concrete, Representational, and Abstract) model, almost anything students can touch and manipulate helps with problem solving! Focusing on the concrete level or 'doing stage', participants will engage in using Cuisenaire Rods to approach problem solving in the following domains: Numbers and Operations, Fractions, and Algebraic Thinking.

**96 Enjoy, and let the games begin! (Grades 5 – 8)**

*Shelly Bydlinski, Glynn County Schools*

Why practice mathematics skills using games? Games provide the perfect opportunity for student to engage in active learning, take part in social interactions, and have fun! Come prepared to play card, dice, and board games that correlate to the Georgia Performance Standards. Reproducible gameboards and templates will be shared.

**97 GSuite for Education for Math Instruction (Grades 6 – 12)**

*Ge-Anne Bolhuis, Whitfield County Schools (Featured Speaker)*

This session will focus on best practices & resources offered in GSuite for Edu (including Google Classroom) to ensure that resources are at students fingertips. Options to help students explain their thinking and helps that allow teachers to differentiate instruction to meet the needs of all students will be shown. Additionally, add-ons inside Google Docs and Sheets that can also help you teach smarter, not harder will be featured.

**98 Get Up and Get Moving With Math In Middle Grades (Grades 6 – 8)**

*Vickie Bumgardner, Risley Middle School*

In this presentation, teachers will learn how to code. Instruction on coding commands with robots and simple instructions. Participants will need a lap top or smart phone. Have you ever thought of using masking tape as a

manipulative? Using SmartBoard technology to engage students in the lesson with activities, organizational structure of an equation, and illustrations of word problems. Demonstration of how to effectively use instructional videos in the classroom. Blogging for math and more.

**99 Math Lab: DOK level 3 and 4 for all learners! (Grades 6 – 8)**

*Janelle DeCosta, Georgia Cyber Academy*

Learn how we have implemented a weekly Math Lab in our school's online environment. The Math Lab format uses low entry point situations to engage learners in inquiry- and task-based mathematics. Students work in collaborative teams to analyze the situation, apply mathematical reasoning, and justify their thinking. We will share resources for 6th, 7th, and 8th grades and demonstrate the Math Lab format which includes 3-act tasks and more!

**100 AMP Algebra: STEM Integration through Standards of Mathematical Practice (Grades 8 – 9)**

*Douglas Edwards, Georgia Institute of Technology/CEISMC*

Students' hands on simulate a Hotshot firefighters planning team to define extraction logistics using slope. They construct a coordinate graph of different Hotshot team positions and determine each team's pacing so that all teams meet at the helicopter extraction point at the same time.

**101 A Special Content Knowledge Task on Functions and Rate of Change (Grades 8 – 9)**

*Tasova Halil, University of Georgia*

In this session, we will have a task that aims to analyzing student responses to a task to get insights into how the students are reasoning about rates of change, and have discussions about potential ways to respond to their thinking. We will be using a real-world situation to explore how the rate of change is represented in a graph by thinking beyond the mathematics that anyone might try to understand.

**102 ARCs and More (Grades K – 12, College)**

*Denise Huddleston, Metro RESA*

Want to find additional resources to provide rich, relevant, and rigorous learning experiences for all students? This session will focus on accessing the multitude of resources available to NCTM members. In addition to perusing the ARCs (Activities with Rigor and Coherence), come explore other resources available to you as a member of NCTM. This interactive session will include the opportunity for participants to explore the NCTM website on their laptops or devices.

**103 Using Problem Posing to Support and Enhance Mathematics Instruction (Grades 2 – 12, College)**

*Clayton Kitchings, University of North Georgia (Repeat Session on Friday)*

You've heard about problem solving, but what about problem posing? What is problem posing and how might I use it to help 1) differentiate instruction, 2) promote engagement, and 3) assess student understanding? How can problem posing support the Standards for Mathematical Practice? We will share examples and discuss strategies across all grade levels!

**104 Explicit CRA with Division (Grades 3 – 6)**

*Joshua Nelson, Cotton Indian Elementary School*

Students often struggle with making a strong connection between concrete models, accurate visual representations, and abstract strategies/algorithms. Certain manipulatives, used in a specific manner, facilitate these connections better than others. In our session, we will explore how to divide whole numbers in such a way that students can easily bridge the gap between the concrete, representation and abstract.



### **105 FAL - Formative Assessments of Learning (Grades 9 – 12, College)**

*Micheal Nguyen-Quan, Meadowcreek High School*

Using different types of formative assessments to assess students' learning and understanding of the mathematical concepts during and after the explicit instruction. Ranging from true/false statement, justifying answers, think-pair-share, and much more...Ready made templates are available for most of concepts in Algebra 1.

### **106 Using Open Applet Tasks to Support Discussion of Area Measurement (Grade 3)**

*Eryn Stehr, Georgia Southern University*

In this session, I present an open task intended to support 3-5 grade students in their thinking about area, its measurement, and their development of formulas for measurement of area. The task is available as a free online applet. Participants will engage in the task. I present several potential student strategies. Participants will discuss Selecting, Sequencing, and Connecting practices for productive discussion following Stein and Smith's (2011) 5 Practices for Orchestrating Productive Math Discussions.

### **107 Numberless Word Problems: Making Word Problems Attainable for All (Grades 1 – 3)**

Christy Sutton, LCPS

Does teaching word problems make you crazy? Do your students look at a word problem and freeze? Do they just perform all operations with the numbers until it's correct? Numberless word problems provide students with the context of the word problem without focusing on the numbers. Join me to learn how they can work in your room!

### **108 Communication Critical to How People Learn (Grades K – 12, College)**

Location: Bankers

*Dr. Dottie Whitlow, Dot-Math, LLC*

Brain-based research from How People Learn (National Research Council) addresses the critical aspects of helping people engage in & retain learning. Communication is key to the success of learning in that learners (of all ages) should be asked to share pre-conceptions & prior learning and be asked to reflect & share their thoughts about the learning (metacognition). Dr. Whitlow has extensive experience in this field, training students, teachers, coaches & administrators in this important process.

## **4:45 PM**

### **PE at the GMC**

(Down at the lake)

Now you have exercised your brain all day, come exercise your body too! Lots of exercise, fun, and games including a Fun Run/Walk, Math Moves, and 3-on-3 Basketball.

## **Evening Session**

### **7:15 PM**

#### **History, Humanity, and Happiness: Cultivating Compelling Math Classrooms With Storytelling**

Location: Talmadge Auditorium

*Sunil Singh, Scolab*

The true beauty and power of mathematics lie in the fact that imperfect humans created an exquisitely perfect language for the illumination of the machinery and magic of the universe. Math discourse is a critical piece of a larger, human narrative of mathematics that involves courage and resilience. While the triumphs are many, struggle, confusion, and failure are the unspoken paths that almost every mathematician has encountered before any revelation. Referencing his book, *Pi of Life: The Hidden Happiness of Mathematics*, Sunil Singh will talk about the untapped power of math's humanness and why weaving rich dialogue/reflections/storytelling into our teaching empowers us as teachers to communicate not only mathematics in meaningful ways but the embedded values and virtues in learning mathematics together.

Immediately following the keynote address will be the **GCTM Awards Ceremony**. It will conclude with door prizes.

Following the ceremony, you are invited to the EMC Senior Pavilion for refreshments, music, and dancing!

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