

62<sup>nd</sup> Annual  
Georgia Mathematics Conference  
Part 2

**Bridging the Past and the Future**



Virtual Conference Program  
February 5, 2022

# The Georgia Council of Teachers of Mathematics

## 62<sup>nd</sup> Annual Georgia Mathematics Conference Part 2

Welcome to part two of the virtual Georgia Mathematics Conference! We are using a platform called **Hopin** to make our virtual conference as simple as possible.

To **log in**, click the link in your e-mail and create a Hopin account. Alternatively, if you have already created an account, you can go to [www.hopin.com](http://www.hopin.com) and click sign-in. Once signed in, click into the **Georgia Mathematics Conference Part 2**. On the left side of the screen, you will see the **navigation bar**.

- To attend opening and closing remarks, click on **Stages**.
- The **Sessions** section will house **ALL** our virtual synchronous sessions.
- Be sure to visit the **Expo** where you will find our sponsor booths.
- If you miss a session, it will be available in the **Replay** section.
- Look for our **pre-recorded sessions** via the **On Demand** button.

On the right-hand side of the page, you will find the **chat** for both the event and the session you are currently in. Switch between the two via the tabs at the top. Looked for **pinned messages** for important updates from the organizers.

Thank you so much for joining and we look forward to seeing you virtually!

## 2021 Virtual Conference Part 2 Overview

Saturday, February 5 <sup>th</sup>		
8:00 – 8:10 AM	Opening Remarks	Stages
8:10 – 9:00 AM	Concurrent Sessions	Sessions
9:10 – 10:00 AM	Concurrent Sessions	Sessions
10:10 – 11:00 AM	Concurrent Sessions	Sessions
11:10 – 11:50 AM	Concurrent Sessions	Sessions
<b>12:00 – 12:50 PM</b>	<b>Expo Time (GA DOE has a live Q &amp; A Session)</b>	Expo
1:00 – 1:50 PM	Concurrent Sessions	Sessions
2:00 – 2:50 PM	Concurrent Sessions	Sessions
3:00 – 3:50 PM	Concurrent Sessions	Sessions
4:00 – 4:50 PM	Concurrent Sessions	Sessions
4:50 – 5:00 PM	Concluding Remarks	Stages

Welcome to the continuation of our 2021 Georgia Mathematics Conference!

Our theme for the 2021 conference is **Bridging the Past and Future for Georgia Mathematics**. This theme captures our desire to build on the work we have explicitly advocated the last few years with respect to equity and access for *all* students as we transition into new standards. New standards require us to revisit how and what we teach but they do not require us to “throw the baby out with the bath water.” Finally, these past years have made the public more aware of inequities in what students learn in a typical school year, and we feel even more pressure to support our students and our colleagues in maximizing learning in the current school year.

We are committed to providing Georgia mathematics teachers opportunities to hear nationally known speakers, to interact with other Georgia teachers, and to see demonstrations from and meet with our sponsors--all while being conscientious of teachers’ limited time for attending conferences. To accommodate teachers’ workloads and time constraints, we developed a two-part conference.

Highlights of part one of the conference, held October 14-16, 2021, include

- An informative keynote from Dr. Lya Snell, Georgia Department of Education Mathematics Program Manager,
- A thoughtful look at how we can build bridges for our students with Dr. Trena Wilkerson, NCTM President,
- Speed trivia with the creative Zach Veal, and
- An entertaining perspective on moving forward from Dr. Bernard Frost, Executive Director of Curriculum and Instruction with Spartanburg School District 7.

An amazing selection of On Demand sessions became available during part one and will remain available through the end of part two of the conference. Even if you were unable to attend part one live, your conference registration provides you with access to all recordings of the keynotes and On Demand sessions.

Now, we enter the final phase of the conference: concurrent sessions on Saturday, February 5, 2022. We recognize that there will be many sessions you wish to attend with limited time; therefore, we are recording all sessions and will make them available throughout February. Our featured speakers--Dr. Pamela Seda, Dr. Jean Lee, and our own Georgia’s own Billy Singletary -- are spaced out throughout the day to allow you to interact with all three. We also have a wide variety of sessions to cater to the great diversity of our membership.

We hope you will have time to engage with all of the sessions, perhaps even more than you might be able to do in a traditional in-person conference and take advantage of the opportunities to learn with and from your colleagues.



Kelly Edenfield, PhD  
Program Chair  
Georgia Mathematics Conference 2021

Welcome back for Part 2 of the 2021 Georgia Mathematics Conference!

This is so exciting as we get to experience the GMC twice in one year. Adding this to the positive column in the pandemic adventure. I do hope you find a take away whether it is an activity, an inspirational comment, or a new contact/friend. I know I am ready for a little inspiration to get me through the home stretch!

I do want to send a HUGE SHOUTOUT to our Conference Board! They have been working so hard to find a schedule that would meet the needs of our Georgia Mathematics Educators. Putting on a conference takes a lot of planning but a virtual conference is another animal all together. I appreciate the extra hours and rolling with the punches as they have. You are the BEST!!!!

I also want to say thank you to vendors and sponsors. Without you, we would not be able to do what we do. The partnerships that we have created to promote and improve mathematics education in Georgia are priceless. Thank you!

Now to our members, thank you for what you do on a daily basis for our students and to support our colleagues. We are all in this together. We are in a constantly evolving profession, but we all have a common goal - student success! If at any time you think of something that GCTM can do to support this goal, please do not hesitate to reach out. Contacts can be found on our website: [www.gctm.org](http://www.gctm.org)

I hope you enjoy the conference!

Kim Conley  
GCTM President

## Featured Speakers



Jean Lee is an associate professor in the School of Education at the University of Indianapolis. She currently teaches undergraduate and graduate mathematics education and curriculum courses. Jean is a PBL-certified and a licensed secondary mathematics teacher. Her recent NCTM publications include *Rigor, Relevance, and Relationships: Making Mathematics Come Alive with Project-Based Learning* (2018) and *Project-Based Learning in Elementary Classrooms: Making Mathematics Come Alive* (2021). She also continues to work in urban and rural classrooms to support K–12 preservice teachers, as well as novice and veteran mathematics teachers. Jean has been involved in leading various professional development projects working with teachers at the state and international levels. Her research interests include project-based learning and the preparation of teachers for high-need, urban school settings.



Pamela Seda is a veteran math educator with over 30 years of experience. She is a wife, a mother of 4 adult children, the owner of Seda Educational Consulting, creator of The VANG Game math card game, and co-author of the book, *Choosing to See: A Framework for Equity in the Math Classroom*. She has held various positions in math education including math teacher, instructional coach, college math instructor, and district math supervisor. She is currently the mathematics coordinator for Griffin-Spalding County Schools in Georgia. Pamela is passionate about changing how students experience mathematics, especially those from marginalized groups, and advocates for mathematics instruction that develops all students as mathematical thinkers and problem-solvers.



Billy Singletary has taught mathematics students at Coahulla Creek High School for the last nine years where he serves as Lead Mathematics Teacher. He spent the previous seven years teaching mathematics students at Winder-Barrow High School and Eastbrook Middle School. As the school's lead mathematics teacher, Billy supports and collaborates with teachers at his school and across the district to implement a rigorous and engaging curriculum to prepare students to be successful in college and careers. He teaches Advanced Placement (AP) Calculus, AP Statistics, and Algebra 1 to grade level and honors students. Demonstrating leadership in mathematics education, Billy has led professional development in content and pedagogy for a Mathematics and Science Partnership grant, supported a summer workshop funded by a U.S. Department of Education "Improving Teacher Quality" grant, and is a regularly invited panelist for a mathematics methods class at a local university. He has been recognized as District Teacher of the Year and District STAR Teacher. In 2017 he was recognized with the Presidential Award for Excellence in Mathematics and Science Teaching.

# Georgia Council of Teachers of Mathematics Annual Awards

<https://gctm.org/awards>

## Gladys M. Thomason Award for Distinguished Service

Selection for this achievement award is based on distinguished service in the field of mathematics education at the local, regional, and state levels. Nominees should have demonstrated significant rendered services, service beyond normal job requirements, and services primarily for the improvement of mathematics instruction. This is GCTM's most prestigious award.

### Previous Recipients of the Gladys M. Thomason Award

2021 Denise Huddleston	2009 Patricia Barrett	1997 Earl Swank	1984 Bill Bompart
2020 Bonnie Angel	2008 James Wilson	1996 Cathy Franklin	1983 Jo Anne Mayberry
2019 Nicole Ice	2007 Barbara Ferguson	1995 Bill Roughead	1982 Peggy Neal
2018 Charles Garner, Jr.	2006 Dan Funsch	1994 Jane Barnard	1981 Doris Dickey
2017 Chris Franklin	2005 Christine Thomas	1993 David Stone	1980 Dora Helen Skypek
2016 Tammy Donalson	2004 Tom Ottinger	1992 John Neff	1979 Lex Buchanan
2015 Cheryl Hughes	2003 Dottie Whitlow	1991 Becky King	1978 Clare Nesmith
2014 Ellice Martin	2002 Barbara Ham	1990 Larry Elbrink	1977 Randall Hicks
2013 Peggy Pool	2001 Margaret Faircloth	1989 J. Norman Wells	1976 Cherry Clements
2012 Debbie Poss	2000 David O'Neil	1988 Mildred Sharkey	1975 Dorothy Simmons
2011 Lynn Stallings	1999 Thomas Cooney	1987 Wanda White	1974 Gwen Shufel
2010 Susan Craig	1998 Wanda Oldfield	1986 Aurelia Hinson	1973 Margaret Edenfield
		1985 Ed Davis	1972 Gladys M. Thomason

## Dwight Love Award

This award is presented to a teacher in Georgia who meets the following criteria:

- Models excellence in the profession and in life,
- Gives much to others beyond the classroom as mentor, teacher, and leader,
- Is a member of GCTM,
- Is a master teacher,
- Is professionally active, and
- Promotes GCTM and its mission.

## **John Neff Award**

This award is presented to a mathematics educator in Georgia who:

- Is a member of GCTM,
- Demonstrates excellence as a full time post-secondary educator and/or district supervisor, and
- Serves as an inspirer, a mentor, and an advocate of mathematics and mathematics education.

## **Awards for Excellence in the Teaching of Mathematics**

Georgia teachers are eligible to receive this award. An elementary teacher (K-5), a middle school teacher (6-8), and a high school teacher (9-12) will be selected as recipients.

A teacher who is nominated should meet the following criteria:

- Be a member of GCTM,
- Have taught mathematics at least 3 years in Georgia,
- Have strong content foundation in mathematics appropriate for their teaching level,
- Show evidence of growth in the teaching of mathematics, and
- Show evidence of professional involvement in GCTM and NCTM, and not have received the Excellence in Teaching Mathematics award in the past 5 years.

## **Teacher of Promise Award**

The Teacher of Promise Award is presented to a new mathematics teacher in Georgia who meets the following criteria:

- Has no more than 3 years' experience at the time of the nomination, and
- Demonstrates qualities of excellence in the teaching of mathematics.

The teacher nominated may or may not be a member of GCTM at the time of nomination.

## **Bill E. Bompert Award**

This award is presented to a Mathematics Support Professional in Georgia who meets the following criteria:

- Is an employee of a school system,
- Serves in a role to support mathematics teachers in instruction and student learning, and
- Serves as an inspirer, a mentor, and a supporter of mathematics and mathematics education is professionally active in education.

# Fall Keynotes



[Click here to view Fall 2021 GMC Keynote](#)

Dr. Lya Snell serves as the Georgia Department of Education's Mathematics Program Manager, where she works to promote equity and access to high-quality mathematics programming throughout Georgia. This includes a focus on making mathematics relevant for students through STEM/STEAM education. Dr. Snell has served in multiple leadership and teaching capacities advocating for equity in mathematics education. She has participated in numerous outreach activities in a variety of settings and serves on a number of boards involving K-12 Mathematics, as well as STEM-STEAM education.

[Click here to view Fall 2021 GMC Keynote](#)



Trena Wilkerson is the current President of the National Council of Teachers of Mathematics and is a mathematics education professor in the Department of Curriculum and Instruction in the School of Education at Baylor University in Waco, Texas where she teaches both graduate and undergraduate mathematics education courses and conducts professional development and research. She taught high school mathematics for 18 years in Louisiana. Over the years she has been active in both her state and local NCTM affiliates in Louisiana and Texas serving in various leadership roles. Trena has been a member of NCTM for 45 years, her entire teaching career. She has published in several of NCTM's journals, *Mathematics Teacher: Learning & Teaching PK-12*, *Mathematics Teaching in the Middle School*, *Mathematics Teacher*, *Teaching Children Mathematics*, and *Journal of Research in Mathematics Education*, chaired the MTMS Editorial Panel and served on the NCTM Board of Directors.

[Click here to view Fall 2021 GMC Keynote](#)



Dr. Bernard E. Frost, a native of Huger, SC has been blessed to work with teachers and students across Spartanburg, Union, Cherokee, and Greenville Counties as a tutor, teacher, trainer, consultant, and educational advisor. He is currently the Executive Director of Curriculum and Instruction for Spartanburg Seven. Dr. Frost also serves as the Southern 1 Regional Director of NCSM: Leadership in Mathematics; Southern 1, NCTM Membership and Affiliate Committee board member; Business Partner with Transforming Learning Cultures, LLC, Master Practitioner for Carnegie Learning, the Past-President of South Carolina Leaders of Mathematics Education, past Director of Teacher Quality and Staff Development for Spartanburg School District Two; and most recently the 2020 recipient of SCCTM Outstanding Contribution to Mathematics Award. With over 16 years of teaching experience and conducting professional developments, Dr. Frost's passion for education is evident in his willingness to put forth 100% in developing professional development opportunities that assist educators in their ongoing process of improving instructional practices that impact student achievement.

# 15 Minute On-Demand Sessions

## To View an On-Demand Session Click on the Title

### [Crossing the Kindergarten Curriculum While Classifying](#)

Grades K-5

*Rebecca Caldwell, Middle Georgia State University (Student)*

The purpose of this session is to introduce educators to an engaging mathematical student activity while using the multiple intelligence theory that incorporate standards that cross the curriculum with a focal point on mathematics.

### [Classroom Strategy: Number Sense Routines](#)

Grades K-8

*Montana Smithey, Georgia Southern University*

The purpose of this session is to explore a variety of number sense routines to use in the classroom beyond number talks. 5 Number Sense Routines and resources for immediate implementation in the classroom will be shared. Although the number sense routines will be geared toward K-5, each routine can be modified for use in pre-k and middle school grades.

### [Five Tips for First Years: What They DON'T Tell You in Your Program](#)

Grades K-12

*Lindsey Boozer, Dacula High School*

Five of the most important tips for new teachers (0-2 years experience) that might have been missed in your teacher-prep program, curated from other new-ish teachers.

### [Combining Math and Science: Number Lines and Tide Change](#)

Grades 4-8

*Janel Smith, Georgia Southern University*

Participants will explore possibilities for connecting reading of a tide chart to plotting points on a coordinate plane to represent high tide, low tide, and tide change. Questions will be modeled that situate the representations within real world events like protecting sea turtle nests, flooding of homes and neighborhoods with natural disasters, and other environmental concerns.

### [Scientific Notation within Contexts Provides Informed Decision Making](#)

Grades 4-8

*Janel Smith, Georgia Southern University*

Often, scientific notation is taught as a procedure in isolation without the importance of the use of the form to read and understand real world events. In this session, we will explore news articles and tables of data. By using real world events, students can see the importance of understanding scientific notation to understand real events.

### [Exploring Poverty and Privilege with Unit Rates](#)

Grades 4-8

*Janel Smith, Georgia Southern University*

In this session we will explore how a visual documentary can provide factual data in mathematical representations. This allows students to create tables, graphs, and ordered pairs of unit rates. The visual representations in the documentary and of the graphs allow students to explore inequity throughout the world that affects families each day.

### [Exploring Sequences with the TI-84+](#)

Grades K-12

*Debbie Poss, Lassiter High School (Retired)*

Learn features of the TI-84+ that help students recognize patterns more easily.

# 50 Minute On-Demand Sessions

## To View an On-Demand Session Click on the Title

[Fraction Slam: A Dozen Activities to Build Understanding of Fractions](#) **Grades K-8**  
*Heidi Eisenreich, Sam Rhodes, Abigail Lorden, Lauren Akers, Georgia Southern University*  
This session will explore different activities to help support students in understanding fractions. Activities will include number sense routines, hands-on activities, technology-based activities, and problem-solving with fractions. Participants will be given links to engage with many of these activities asynchronously.

[Assessing and Encouraging 3D Drawings and Designs from Research](#) **Grades K-12**  
*Jill Cochran, Cody Gordon, Elizabeth Walrod, & Abbey Lackey, Berry College*  
In the format of a panel, we will share research with over 500 students in 1st - 9th grades and their development of 3D representations. Our findings on learning experiences and gender are relevant to STEM classroom activities incorporating drawing, building and designing on a computer. Free classroom resources incorporating 3D design and printing will also be shared.

[Learning Loss to Learning Recovery!](#) **Grades K-12**  
*Josh Britton, Get More Math!*  
This fall, math teachers will face an intensified version of the same old dilemma: how can students learn grade-level content if they don't have mastery of concepts from prior grades? This session will explore both the importance of promoting and monitoring long-term retention and Get More Math as a tool for this purpose.

[Using Desmos ActivityBuilder for Dynamic Proof Building](#) **Grades 4-8**  
*Eryn Maher & Ha Nguyen, Georgia Southern University*  
We will demonstrate a Desmos Activity used to support proof building for middle grades Geometry concepts. Desmos ActivityBuilder is a user-friendly interactive tool designed for teaching mathematics that integrates scientific calculators, graphing abilities, virtual manipulatives, media, and more. Participants will create a task in Desmos ActivityBuilder to use in their classroom, copying and editing a dynamic proof-building task.

[Using Desmos Post Pandemic](#) **Grades 4-12**  
*Lindsey Boozer, Dacula High School*  
An Intermediate Desmos course focused on expanding educators' knowledge of Desmos and how it can be used in the classroom. The session will cover classroom strategies as well as advanced code and building of Desmos.

[Leveraging Georgia's Tiered System of Supports for Students in the Secondary Mathematics Classroom](#) **Grades 4-12**  
*Becky Wright, Georgia Department of Education*  
This session will focus on how the implementation of high-leverage practices (HLPs) and evidence-based practices (EBPs) in the secondary mathematics classroom is essential to robust Tier 1 instruction within Georgia's MTSS.

**Grades 4-12**

### [Building Your Classroom: Developing Student’s Ability to Justify](#)

*J Vince Kirwan, Kennesaw State University*

It can be challenging to develop a discourse-based mathematics classroom where students can justify their answer’s validity and unpack their reasoning. A task used to help model justification and unpack the associated reasoning will be shared, and aspects of a lesson it might be used within will be decomposed. Attendees will have opportunities to experience this task as a learner, discuss potential implementation into their own classrooms, and anticipate challenges and responses related to implementation.

### [Alternative Pathways for Struggling Students Needing 3-4 Years of Mathematics](#)

**Grades 9-12**

*Robert Gerver, North Shore HS (Retired)*

If the Algebra 2 and precalculus track is setting up your struggling students for failure, consider two full year courses: Advanced Algebra with Financial Applications and Hands-On Statistics. This two-year sequence is designed to engage strugglers, build their confidence and skills, and allow them to experience success.

### [Modeling with Mathematics: Food Deserts in Athens](#)

**Grades 9-12**

*Kristen Meister (Discovery High School), Anna Bloodworth & Sabrina Morales (University of Georgia)*

This session demonstrates how mathematical modeling can be used in the high school classroom to address social injustice. Participants will learn about the modeling process and student engagement with mathematical practices as they explore issues relevant to their communities.

### [Curating AP Calculus](#)

**Grades 9-12**

*Storie Atkins, Columbus High School*

This session is designed to meet the needs of beginning AP Calculus teachers by providing resources for best practices, teaching strategies, course organization, technology resources, and exam preparation.





Session descriptions can be located using the corresponding times.

	AP Statistics Room	AP Calculus Room
9:00 – 9:50	<p><b>So You're Telling Me There's a Chance: Student Difficulties with Probability and a Few Suggested Strategies</b></p> <p><i>Ross Brooks, Tallahassee Community College &amp; Billy Esra, Bishop Hall Charter School</i></p>	<p><b>Curating AP Calculus</b></p> <p><i>Storie Atkins, Columbus High School</i></p>
10:00 – 10:50	<p><b>Popular Activities for New AP Statistics Teachers</b></p> <p><i>David Custer &amp; Lisa Stevenson, Decatur High School</i></p>	<p><b>Modeling COVID-19 Data with Differential Equations</b></p> <p><i>Lina Ellis, The Westminster Schools</i></p>
11:00 – 11:50	<p><b>GA²PMT Business Meeting</b> <b>AP Mathematics Updates and Information</b></p> <p><i>GA²PMT board, members, and guests</i></p>	<p><b>Members Attend Business Meeting in AP Statistics Room</b></p>
12:00 – 12:50	<p><b>Expo Time (GA DOE has a live Q &amp; A Session)</b></p>	
1:00 – 1:50	<p><b>Report from the AP Statistics Reading with Lisa Stevenson and other AP Readers</b></p> <p><i>Lisa Stevenson, City Schools of Decatur</i></p>	<p><b>Report from the AP Calculus Reading with Marshall Ransom and other AP Readers</b></p> <p><i>Marshall Ransom, Georgia Southern University, Chuck Garner, Rockdale Magnet School &amp; Dennis Wilson, Landmark Christian School</i></p>
2:00 – 2:50	<p><b>Report from the AP Statistics Reading with Lisa Stevenson and other AP Readers – Part 2</b></p>	<p><b>Report from the AP Calculus Reading with Marshall Ransom and other AP Readers – Part 2</b></p>

Annual GA²PMT membership is \$10.

# ***Saturday, February 5, 2022***

## **8:00 – 8:10 AM Opening Remarks (Click [Stages](#) to Attend)**

- Kelly Edenfield, 2021 GMC Program Chair
- Kim Conley, GCTM President

## **8:10 - 9:00 AM (Sessions)**

### **1 Just the Facts! (Grades K-5)**

*Thom O'Brien, ExploreLearning*

For students to be successful in mathematics, it's paramount that students can add, subtract, multiply and divide with ease and accuracy. Traditional methods of teaching fluency in the classroom have involved flash cards, mad minutes and parental help. These methods have varying levels of success and can be extremely time consuming for the classroom teacher. Is there a better way?

### **2 Size Matters: Making Sense of Same Numerator and Same Denominator Comparison Reasoning Strategies (Grades K-5)**

*Brooke Armesto, Bryan County Elementary School & Heidi Eisenreich, Georgia Southern University*

Participants will compare fractions using same numerator and denominator reasoning strategies. Participants will use virtual manipulatives to model these comparisons and draw representations of those models to make a connection between the concrete and representation in the CRA process. Participants will identify ways to help students develop a conceptual understanding of comparing fractions using these strategies and share lessons learned.

### **3 Making Mathematics Stick: Instructional Strategies to Support Long-Term Understanding of Mathematics (Grades K-8)**

*David Costello, Costello Mathematics*

Have you ever heard students say "I forget doing that"? Far too often, instruction prioritizes short-term performance at the expense of learning. Making mathematics stick is about instructional and learning strategies that support students in recalling and applying previous learning to solve novel situations.

### **4 Developing Mathematical Discourse through Classroom Routines (Grades K-12)**

*Renee Owen & Joshua Nelson, Henry County Schools*

Participants will engage in classroom routines to discover how they can develop mathematical discourse with their students. Best practices for questioning and implementing routines will be discussed. Participants will be provided with resources they can use immediately in their classrooms.

### **5 The Backwards Design on Paper (Assessment Blueprints For Mathematics) (Grades K-12)**

*Priscilla Alexander, Richmond County School System*

The purpose of this session is for teachers to see how to backwards design through an assessment blueprint. **Teachers will need a computer with a word processor.**

## **6 Creating Collaborative Classrooms (Grades 4-12)**

*Joel Miller, CPM Educational Program*

Participants will experience a team building activity, team roles, and study team strategies that particularly deal with collaboration in a virtual and in-person classroom. Participants will work middle school mathematics problems using study team strategies and see how the Standards for Mathematical Practice are tied into and highlighted by these strategies.

## **7 Doing "THE MOST" with DESMOS: Enhancing Your Lessons Using the Activity Builder (Grades 9-12)**

*Christian Kendrick, Woodland High School*

Learn to enhance your lessons using Desmos Activity Builder. During this session, you will learn about the multiple interactive components that can be used to increase engagement and rigor in your lesson, as well as, view the lesson as both teacher and student. **You will need a FREE teacher account to engage and interact during the session.**

## **8 Grades 9 – 12 Mathematics Standards Update (Grades 9-12)**

*Georgia Department of Education Mathematics Team*

On August 26, 2021, the Georgia State Board of Education unanimously adopted new Mathematics standards to be implemented in classrooms in Fall 2023. This session will provide details related to the new standards and information to support teachers and teacher leaders as they prepare to make the transition to Georgia's 9-12 Mathematics Standards.

# **9:00 - 9:50 AM (Sessions)**

### **FEATURED SPEAKER**

## **9 Representation Matters! A Process Approach to Creating Culturally Relevant Math Tasks (Grades K-12)**

**Featured Speaker Sponsors:** hand2mind, Edgenuity

*Pamela Seda, Seda Educational Consulting, LLC*

*All students should have the opportunity to see themselves represented in the curriculum materials they use. Teachers who use culturally relevant mathematics tasks challenge the negative stereotypes in society about who is mathematically smart. In this session, participants will learn the process of creating culturally relevant tasks for the students in their mathematics classrooms.*

## **10 Connecting the Dots - Domino Mathematics Games for Differentiated Learning Centers (Grades K-5)**

*Jane Felling, Box Cars and One Eyed Jacks*

Come prepared to play our favorite Box Cars domino games that teach the following concepts: subitizing, operations, including multi-digit + and -, place value, graphing, fractions, problem solving and more. Dominoes are a favorite for students to use, easy to socially distance, manage and sanitize. Gameboards provided, concept skill checklists and ideas for integrating into your learning centers or whole class instruction. Games make an ideal family mathematics night too! Rebuild the gaps with the games included in this session.

### **11 Mathematics Building Blocks - Stacking Skills to Fill the Gaps and Grow! (Grades K-5)**

*Gretchen Torbert, Teachers Across the World*

This session will show how instructors are able to pave the way to help students with huge gaps in their learning of basic skills. The creation of the foundation is key in helping students and teachers develop, learn, and grow to close the gaps.

### **12 Using Desmos to Support Visualizing and Interpreting Mean (Grades K-8)**

*Ha Nguyen & Eryn Maher, Georgia Southern University*

We use Desmos to focus on conceptual meanings of mean, to enact a set of interactive tasks from Beckmann (2018), and then to support participants in creating and revising their own related tasks using Desmos ActivityBuilder. Desmos ActivityBuilder is a free user-friendly interactive tool designed for teaching mathematics that integrates scientific calculators, graphing abilities, virtual manipulatives, media, and more.

### **13 Productive Struggle + Manipulatives = Success (Grades 4-8)**

*Jane Hannon & Angie Meredith, hand2mind*

How do we help students find meaning in mathematics? How do we help them develop their own understanding? Using easy-to-follow standards-based lessons from Hands-On Standards, participants will learn how to use manipulatives to help students grapple with and make sense of mathematics as well as move them forward to success! **A free trial license for e-resources will be included.**

### **14 Modeling Garbage and Recycling (Grades 4-12)**

*Debbie Poss & Don Slater, Lassiter High School (Retired)*

Finding good topics for modeling is difficult, but garbage is a problem everywhere. We will mathematically investigate the problem of how garbage increases and how clean-up and/or recycling can help solve it.

### **15 "Smart Cities": Using Mathematical Pedagogy Matched with High School Mathematics Standards to Create ways to Positively Impact the Neighborhood (Grades 4-12)**

*Rashi Kohli, Savannah High & Beth Jones, New Hamstead High School*

Purpose of the session is to "Collaborate with other educators" & to disseminate the importance of SMART CITY (Real time application) that can be incorporated with mathematics standards. The purpose of this session is to show real world application of mathematics standards surrounding data collection and statistics while allowing students to learn how to engage in community involvement and activism. Students will learn how to disaggregate data, create meaningful visual representations of data, compare and contrast information and create a viable hypothesis based on this data. The technologies used to engage and interact with audience is pear deck (content presentation) & Quizizz which we will be using to engage the audience. These are Interactive tools that provides platform to interact with the participants.

### **16 So You are Telling Me There is a Chance: Student Difficulties with Probability and a Few Suggested Strategies (Grades 4-12)**

*Ross Brooks, Tallahassee Community College & Billy Esra, Bishop Hall Charter School*

Probability is one of the most difficult topics for students to comprehend in the AP Statistics curriculum. During this session we will address why students struggle with this topic and look into specific strategies that can be utilized to aid in student understanding.

### **17 Curating AP Calculus (Grades 9 – 12)**

*Storie Atkins, Columbus High School*

This session is designed to meet the needs of beginning AP Calculus teachers by providing resources for best practices, teaching strategies, course organization, technology resources, and exam preparation.

## **10:00 - 10:50 AM (Sessions)**

### **18 Shake Up Your Mathematics Practice (Grades K-5)**

*John Felling, Box Cars and One Eyed Jacks*

Come prepared to play with our favorite Mathematics manipulative, a mathematics shaker. We will start each activity with a short 30 second movement break (great for tired students who need a brain break), then follow it with quick mathematics practice activities. Concepts covered will include: doubles, make 10, 20 decades, operations +, -, x, commutative and associative properties of + and x, place value 10's/one's to millions, decimals, fractions, mental mathematics and more. **This will be a very quick paced active session, come prepared with 8 REGULAR DICE AND BE READY TO SHAKE, RATTLE AND ROLL.** Ideas can be used in small groups, whole class, and will provide engaged practice throughout your day.

### **19 Grades K-5 Mathematics Standards Update (Grades K-5)**

*Georgia Department of Education Mathematics Team*

On August 26, 2021, the Georgia State Board of Education unanimously adopted new Mathematics standards to be implemented in classrooms in Fall 2023. This session will provide details related to the new standards and information to support teachers and teacher leaders as they prepare to make the transition to Georgia's K-5 Mathematics Standards.

### **20 The Seven Bridges of Königsberg and other Mathematical Stories (Grades K-12)**

*Evans Harrell, Georgia Institute of Technology & Jamey Smith, Jasper Country High School*

We plan to put on a performance about The Seven Bridges of Königsberg in the form of a courtroom skit. If possible, the format will allow audience participation. The title refers to a puzzle solved by Leonhard Euler long ago, which became the foundation for the Mathematical study of networks. Our current online life and our digital future owe a lot to the puzzle of The Seven Bridges of Königsberg. For several years Mathematicians and artists in Atlanta have been using theater, music, dance, visual art, circus acts, and even poetry to engage the community with mathematics. We have done this both in public settings at free events like the Atlanta Science Festival and in schools.

After the skit we will share our experiences using the performing arts as well as puzzles and games to help people better understand mathematics and how it impacts our lives.

We will then host a discussion of opportunities and resources with the audience. Depending on the time, we may show additional mathematics-themed performances.

No special technology will be required for this session.

### **21 Teaching About Our World with Mathematical Models and Manipulatives (Grades 4-8)**

*Evelyn Sears, Piedmont University*

In this interdisciplinary workshop discover activities that bring current events and top global challenges into the mathematics classroom. Explore trends in the environment, global population and more using models, manipulatives and lively group work that build middle school mathematics skills while exciting students about mathematics connections to their lives.

### **22 Patterns with a Purpose (Grades 4-8)**

*Ashley Boyd, CPM Educational Program*

Building conceptual understanding of slope and y-intercept... Easier said than done. Join a team in breakout rooms to engage in unique pattern problems as you work to shift between the multiple representations of the linear web. Learn how your students can make connections between a table, graph, rule, and pattern to understand and apply  $y=mx+b$  in multiple contexts.

### **23 Virtual Resources to Enhance Online Mathematics Instruction (Grades 4-12)**

*Lorenzo Robinson, Lovejoy High School*

The purpose of this session is to provide resources to connect and engage students with various learning styles in an online mathematics environment. Participants will get a glimpse into the progression of an actual online mathematics lesson and they will get to interact with the strategies that will be provided. **Technology required - Graphing calculator resource (i.e., Desmos or handheld graphing calculator).**

### **24 Add Some Jam to Your Lesson Plans: Increase Student Engagement with Google Jamboard (Grades 4-12)**

*Gayle Herrington, Woodland High School/Henry County*

Student engagement was a constant concern during hybrid teaching. Google's digital whiteboard, Jamboard, provided new opportunities for students to collaborate, communicate, and demonstrate during lessons. Come learn how to add a little Jam to your lessons to improve student engagement in your blended classroom. **Be sure to have access to [jamboard.google.com](https://jamboard.google.com) when you join the session.**

### **25 A New Algebra II: Promoting Equity and Agency for All Students (Grades 9-12)**

*Rebecca Gammill, Cobb County Schools*

Participants will discuss how accessible technology, collaborative educational goal setting, and evolving content standards can engage students now, foster collaboration, and mathematically prepare students for their future.

### **26 Popular Activities for New AP Statistics Teachers (Grades 9-12)**

*David Custer & Lisa Stevenson, Decatur High School*

Are you new to teaching AP Statistics? Are you looking to beef up your collection of activities that engage your students beyond memorizing formulas? Help your students “see” essential topics like randomization, the Central Limit Theorem, and others. Take advantage of highly vetted, guaranteed-to-inspire activities that veteran AP Stat teachers use to build success with their students!

### **27 Modeling Covid-19 Data with Differential Equations (Grades 9-12)**

*Lina Ellis, The Westminster Schools*

This session will use Mathematics to model and better understand the events of the past year. We will use differential equations to find exponential and logistic functions to model actual Covid-19 data from several states and countries. Bring your TI-84 or TI-Nspire to use the regression capabilities to check your answers. We will also briefly look at the SIR Model as a way to use a system of differential equations to model an epidemic.

## **11:00 - 11:50 AM (Sessions)**

### **FEATURED SPEAKER**

### **28 Project-Based Learning (PBL): Creating Spaces for Secondary Learners to Engage with Rigor, Relevance, and Relationships (Grades 6-12)**

**Featured Speaker Sponsors:** hand2mind, Edgenuity

*Jean Lee, University of Indianapolis*

Learn how project-based learning (PBL) provides opportunities for learners to engage in rigorous mathematics, draw them to authentic and relevant problems and issues, and foster positive relationships among community members. Learn to write Driving Questions, brainstorm project ideas, and leave with a collection of Driving Questions and ideas for future projects to use in your classrooms. Resources will be provided to support you in creating your own projects.

### **29 Hands-On Centers: Creating Effective Small Groups (Grades K-5)**

*Angie Meredith & Jane Hannon, hand2mind*

Experience how differentiated, hands-on activities that use manipulatives will help students deepen their understanding of key mathematics concepts with hand2mind's Differentiated mathematics Centers and VersaTiles. Come see how easy it is to manage centers and differentiate essential topics through leveled task cards. **A Google link will be available to participants who wish to sign up for free samples.**

### **30 Mastered and Motivated: Fact Fluency Games (Grades K-5)**

*Kayle Teasley, Lindsey McCord & Breanna Meyers, Norton Elementary*

Has COVID led to a fluency pandemic in your classrooms? Our easy-to-follow and engaging games are the best vaccination to support these students. These elementary-level games will keep your students engaged and motivated to build the fluency that is key to their success. Grab a deck of cards and get ready to play!

### **31 Accelerating Access - Implementing Culturally Responsive Instruction (Grades K-12)**

*Tonya Clarke & Charlene Matthew, Clayton County Schools*

This session will provide practical and powerful practices for implementing instruction that is culturally responsive and content rich. Decades of research provide evidence of traditionally marginalized populations of students and the need to adjust instruction to make mathematics more inclusive and accessible, but how? In this session, we will walk through the process of planning and presenting instruction that is accessible and respectful.

### **32 Tricked into Thinking (Grades K-12)**

*Thom O'Brien, ExploreLearning*

Everyday events make us wonder. Each of these events provides us the opportunity to THINK. How important are the coefficients in a quadratic equation? Can slope be used to help us understand an action? With computer simulations students can create a variety of trials that test limits, change variables, and quickly make adjustments to prove their case.

### **33 I Can't Remember Which Fraction to Keep or Flip: Building Understanding of Fraction Division with the CRA Instructional Model (Grades 4-8)**

*Heidi Eisenreich, Karin Fisher, Kahli Crews & Abigail Lorden, Georgia Southern University, & Andria Disney, Utah Valley University*

Participants will engage in a task to build a deeper understanding of fraction division using concrete, visual, and symbolic representations. Using the CRA Instructional Model, we will examine the process of connecting each stage (virtual manipulatives to drawings and drawings to equations) in order to build from conceptual understanding to procedural fluency with fraction division.

### **34 Topology Tac Toe (Grades 4-12)**

*Bobby Stecher, Stratford Academy*

Fun and mathematical extensions of the game Tic-Tac-Toe. What if the game of Tic-Tac-Toe was played on the surface of a cylinder or a mobius strip? Enjoy an interactive activity that can be used in any classroom to motivate interest in higher mathematics.

### **35 AP Mathematics Updates and Information with GAAPMT (Business Meeting) with Billy Esra, Storie Atkins, and other GAAPMT Members (Grades 9-12)**

*Billy Esra, Bishop Hall Charter School & Storie Atkins, Columbus High School*

Join the Georgia Association of AP Math Teachers (GAAPMT) as we discuss AP Mathematics information and updates. This session will also include upcoming changes to the GAAPMT.

## **Our Mission Statement**



The mission of the Georgia Council of Teachers of Mathematics is to:

- Promote a high quality mathematics education for all students,
- Encourage an active interest in mathematics and in mathematics education,
- Promote ongoing professional development for mathematics education, and
- Promote and reward excellence in the teaching of mathematics in the state of Georgia.

The objectives of the Georgia Council of Teachers of Mathematics are to encourage an active interest in mathematics and to act as an advocate for the improvement of mathematics education at all levels.



## 1:00 - 1:50 PM (Sessions)

### FEATURED SPEAKER

#### **35 Project-Based Learning (PBL): Using Rigor, Relevance, and Relationships to Co-Construct Mathematical Learning Experiences at the Elementary Grades (Grades K-5)**

**Featured Speaker Sponsors:** hand2mind, Edgenuity

*Jean Lee, University of Indianapolis*

Learn how project-based learning (PBL) is used to build spaces where students have equal voice and power to co-construct mathematical experiences. Classroom tested PBL units will be shared. Learn to write Driving Questions, brainstorm project ideas, and leave with a collection of Driving Questions and ideas for future projects to use in your classrooms. Resources will be provided for participants to get additional ideas to incorporate into their own projects.

#### **36 Box Cars Games and Activities for Rebuilding Place Value Concepts (Grades K-5)**

*Jane Felling, Box Cars and One Eyed Jacks*

Come prepared to play our favorite Box Cars games that will help you rebuild place value concepts including: comparing, composing and decomposing #'s, expanding and rounding #'s, patterns and using number lines, identifying powers of 10, and more. Handouts will include gameboards, concept skill checklists and ideas for differentiating the games. Great for centers, small group or whole class instruction. **THIS IS A HANDS-ON SESSION; PLEASE HAVE ON HAND A DECK OF CARDS AND 8 REGULAR DICE.**

#### **37 But What's The Whole? (Grades K-8)**

*Sam Rhodes & Heidi Eisenreich, Georgia Southern University*

Conceptually understanding fraction computation starts with identifying the whole. This interactive session will use BrainingCamp to engage participants in problem-solving as we explore fraction multiplication and division using concrete models. Come ready to engage with colleagues and leave with tools to support your students in learning these critical skills. Participants are encouraged to bring their favorite fraction activities to share!

#### **38 The Mathematics Educator's Guide to the GPB Galaxy (Grades K-12)**

*Tracey Wiley, Georgia Public Broadcasting*

Join GPB Education for an exploratory overview of our comprehensive, **no-cost** digital resources for K-12 mathematics, including GPB's numeracy game *Bubble Build* and some of our favorite PBS content from *Peg + Cat*, *Cyberchase*, *The Odd Squad*, *Math at the Core*, *I <3 Math*, *Math in the Workforce*, and more! Participants will learn about how to meaningfully engage students with the thousands of engaging mathematical resources available through their **free** streaming accounts with PBS LearningMedia.

#### **39 Making Middle School Mathematics Come Alive with Games (Grades 4-8)**

*Ashley Boyd, CPM Educational Program*

Participants will be engaged in working through games and activities around Middle School mathematics topics. Activities that can be used to introduce or practice basic skills. Participants will also do activities around graphing, measures of central tendency, multiplication, operations with integers and probability.

#### **40 Discover Desmos (Grades 4-12)**

*Lindsey Boozer, Dacula High School*

A beginner Desmos course designed for teachers with limited to no interaction with Desmos Classroom Activities. The session will begin with an interactive Desmos showing educators some of its more unique features. Then we will focus on finding pre made Desmos activities and running them in a classroom.

**Participants will need a computer with internet access.**

#### **41 Supporting Mathematics Unfinished Learning Through Support Courses (Grades 6-12)**

*Ashley Clody, Cobb County Schools*

Are your students still struggling with their mathematics proficiency? Dive into why acceleration should be the majority focus of a support class. We will also look at a few strategies that can be used in mathematics support or connection courses that could help increase student achievement and unfinished learning from last year.

#### **42 Report from the AP Statistics Reading with Lisa Stevenson and other AP Readers (Grades 9-12)**

*Lisa Stevenson, City Schools of Decatur*

In this session we will discuss relevant information from the AP Statistics Reading. We will provide an overview of the Free Response topics and question format, as well as commonly missed items.

#### **43 Report from the AP Calculus Reading with Marshall Ransom and other AP Readers (Grades 9-12)**

*Marshall Ransom, Georgia Southern University, Chuck Garner, Rockdale Magnet School & Dennis Wilson, Landmark Christian School*

Speakers will discuss 2021 AP Calculus Exam and problems which they scored. Observations and recommendations to teachers will be discussed and are contained in articles written by the speakers, to be made accessible at [gaapmt.org](http://gaapmt.org), the website of the GA Association of AP Math Teachers.

## **2:00 - 2:50 PM (Sessions)**

#### **44 Pushing Mathematical Understanding using this Simple, Versatile Mathematics Manipulative: The Rekenrek (Grades K-5)**

*Amy How, Rekenrek 101*

If you are interested in encouraging mathematic talk, reasoning, deeper understanding and daily practice in a hands-on visual method, then this session is for you. You will get a chance to try it out and learn the basics. You truly have to see it to believe it. Join in on the rekenrek workshop and you too will be singing the praises of this simple tool.

#### **45 Building Fluency Through Number Sense Routines (Grades K-5)**

*Brooke Armesto, Bryan County Elementary & Montana Smithey, Heidi Eisenreich, Georgia Southern University*

In this session, participants will learn how to help students develop and strengthen fluency in addition and subtraction through number talks. Attending teachers will participate in a number talk and discuss potential strategies with the group, share their own experiences developing and facilitating number talks, and receive research-based resources to help them develop number talks in their own classroom.

**46 Equitable Practices in Problem Solving: The Story of Three Teachers and how Their Classroom Discourse Caught on Fire (Grades K-8)**

*Seyoung Holte, Northeast GA RESA*

In this session, we will peak into classrooms where meaningful mathematics experience is happening among students. We will hear from the teachers who participated in professional development course Problem Solving and Effective mathematics Teaching Practices and how their classroom discourse transformed as they implemented 8 Effective mathematics Teaching Practices in their classrooms.

**47 Developing Algebraic Thinking Using the Area Model from Kindergarten to High School (Grades K-12)**

*Renee Owen & Joshua Nelson, Henry County Schools*

Participants will explore the use of the area model to develop student algebraic thinking from Kindergarten through High School. They will explore the connections across the grades. The use of manipulatives will be used to model a variety of area models to represent student thinking.

**48 Pillars & Practices: An Ungrading Framework to Catalyze Change at the Margins (Grades 4-12)**

**SESSION CANCELED**

**49 What PART of Fraction Don't you Understand (Grades K-8)**

*Thom O'Brien, ExploreLearning*

Immersing students in a game based environment to help them conceptually understand fractions is the perfect way to make this difficult topic reachable for students. Students work through 27 missions to complete their understanding of how fractions help us see magnitude in their world. This is not simply solving fraction problems; this is about understanding fractions.

**50 Resources for Picking up STEAM in Mathematics Instruction (Grades K-12)**

*Tracey Wiley, Georgia Public Broadcasting*

Mathematics is the common connector for all STEAM disciplines, from the measurements of science through the patterns and shapes of Art. It is a universal language across all cultures and a major component in all creative endeavors. Join GPB Education for an exploratory overview of our **free** digital STEAM resources with an emphasis on engaging mathematics education and real-world mathematics connections.

**51 Report from the AP Statistics Reading with Lisa Stevenson and other AP Readers – Part 2 (Grades 9-12)**

*Lisa Stevenson, City Schools of Decatur*

In this session we will discuss relevant information from the AP Statistics Reading. We will provide an overview of the Free Response topics and question format, as well as commonly missed items.

**52 Report from the AP Calculus Reading with Marshall Ransom and other AP Readers – Part 2 (Grades 9-12)**

*Marshall Ransom, Georgia Southern University, Chuck Garner, Rockdale Magnet School & Dennis Wilson, Landmark Christian School*

Speakers will discuss 2021 AP Calculus Exam and problems which they scored. Observations and recommendations to teachers will be discussed and are contained in articles written by the speakers, to be made accessible at [gaapmt.org](http://gaapmt.org), the website of the GA Association of AP Math Teachers.

## 3:00 - 3:50 PM (Sessions)

### FEATURED SPEAKER

#### 53 Who Gets to Learn Mathematics? (Grades K-12)

**Featured Speaker Sponsors:** hand2mind, Edgenuity

*Billy Singletary, Coahulla Creek High School, Whitfield County Schools*

In this talk we will take a look at the historical perspectives on learning mathematics in schools to inform our paths forward as we think about Bridging the Past and the Future. We will wrestle with how to create classrooms where all students learn mathematics deeply regardless of background, perceived ability, or career aspirations.

#### 54 A New Personalized Mastery Learning Mathematics Ecosystem for PK-2 Learners ([PK]K-2)

*Shawn Meddock, Age of Learning*

Experience the power and engagement of personalized mastery mathematics! Developed carefully over a period of six years by Age of Learning, the providers of the popular *ABCmouse* program, The **Personalized Mastery Learning Ecosystem™ (PMLE™)** of *My Math Academy* blends learning science, forward-thinking app-based technology, and exciting engagement in a framework that supports the whole child by focusing on individual learning needs to accelerate math achievement against your state standards and national independent benchmark assessments.

#### 55 CRAzy about Multiplication (Grades K-5)

*Wilekia Mayes & Heidi Eisenreich, Georgia Southern University*

The purpose of this session is to show the progression of the CRA process through multiplication of whole numbers. During this session, we will utilize virtual manipulatives and Google Jamboard to show each stage of the concrete, representational, and abstract model and how they are connected.

#### 56 Eco-Mathematics: Calculations for People and the Planet (Grades K-5)

*Kenneth Jones, Columbus State University*

Engage in memorable, hands-on activities that integrate mathematics with age-appropriate geography and ecology to learn more about our human footprint on the Earth and its resources. Build students' skills in working with fractions, ratios, large numbers, growth patterns, measurement, and graphing representing using real-world data. **Receive electronic lesson plans matched to state standards.**

#### 57 Teaching Mathematics at a Distance - Reaching ALL Students (Grades K-8)

*Theresa Wills, George Mason University*

Learn how to harness the strategies of online learning to bridge the needs of ALL students - remote, in-person, and hybrid. This is a highly interactive workshop with templates for 20 different Mathematics routines.

#### 58 Manipulatives in Middle School and Algebra? Absolutely! (Grades 4-8)

*Jane Hannon & Angie Meredith, hand2mind*

Manipulatives are key to accessing deep understanding of algebraic concepts for every Middle Grades student. Participants will experience how working with manipulatives and hands-on authentic problems as well as facilitated discourse will help students "see" how to use algebraic thinking and reasoning at the concrete level. **A free trial license for e-resources will be included.**

### **59 Using GeoGebra for Monitoring Formative Assessment and Facilitating Online Collaboration (Grades 4-12)**

*Monique Zhou & Rob Pontecorvo, GeoGebra Foundation*

In this session, participants will explore the powerful combination of GeoGebra Classroom and open educational resources (OER), to monitor student interaction in real time for formative assessment. Graphic and calculator apps engage students in open ended discovery and advanced whiteboard tools facilitate online and in person collaboration. **Participation requires a computer or mobile device with a browser and internet.**

## **4:00 - 4:50 PM (Sessions)**

### **60 Back to the Base-ics: Using Virtual Base 10 Blocks to Teach Subtraction Conceptually (Grades K-5)**

*Abigail Lorden & Heidi Eisenreich, Georgia Southern University*

Participants will interact with virtual manipulatives to develop an understanding of whole number subtraction. After modeling with virtual Base 10 blocks, we will draw a representation of the model and connect it to the use of a place value chart.

### **61 Hands-On Intervention is Easy with the Right Resources! (Grades K-5)**

*Angie Meredith & Jane Hannon, hand2mind*

Target specific skills with strategies that work for struggling learners. Learn how teachers can reinforce key concepts with lessons that are designed to deepen understanding in mathematics for students at any ability level. Experience systematic and explicit instruction that will successfully move students towards learning goals! **A free trial license for e-resources will be included.**

### **62 Supporting Students in Problem Solving (Grades K-8)**

*Sam Rhodes & Montana Smithey, Georgia Southern University*

This session will engage participants in conversations about how to both teach problem-solving and how to facilitate mathematical discussions that focus on student thinking. Participants will leave with ideas and resources that can immediately be implemented and used in their classrooms.

### **63 Counting and Spatial/Visual Reasoning: The Hidden Backbones for Numeracy (Grades K-12)**

*Seyoung Holte, Northeast GA RESA*

When do you count? What do you count? Why do you count? How do you count? What do you see when you count? Counting is often considered something in the past, something rote, and something primary. In this session, we will explore multiple aspects of counting and how counting, paired with spatial/visual reasoning, can be a powerful tool for building numeracy as we help students understand and use the nuance of numbers in K-5 classrooms.

### **64 Using Algebra Tiles to Build Understanding of Expressions and Equations (Grades 4-8)**

*Astrida Lizins, CPM Educational Program*

Participants will practice a series of problems using electronic tools and supports that they can use with students to build conceptual understanding of simplifying algebraic expressions and solving equations. Algebra tiles are used throughout the session to obtain the lesson objectives of combining like terms, comparing expressions and solving equations. Participants will benefit from practicing the problems in breakout rooms.

### **65 Six Helpful Strategies to Help Students Better Prepare for Standardized Tests (Grades 4-12)**

*Debbie Poss & Don Slater, Lassiter High School (Retired)*

Help level the playing field by sharing these 6 tips with your students to help them perform better on standardized tests. Incorporate these problem-solving strategies throughout the year to give them practice and confidence for these important assessments. Although geared toward the SAT and ACT, these strategies work for most types of tests.

### **66 Grades 6-8 Mathematics Standards Update (Grades 6-8)**

*Georgia Department of Education Mathematics Team*

On August 26, 2021, the Georgia State Board of Education unanimously adopted new Mathematics standards to be implemented in classrooms in Fall 2023. This session will provide details related to the new standards and information to support teachers and teacher leaders as they prepare to make the transition to Georgia's 6-8 Mathematics Standards.

### **67 Taking Your TI-84 Skills to the Next Level: Enhance Instruction and Increase Student Understanding (Grades 9-12)**

*Dennis Wilson, Landmark Christian School*

Whether you are a TI-84 Plus veteran, or are picking up the TI-84 Plus CE for the first time, there are many valuable, often overlooked features that can enhance instruction and increase student understanding. From systems of equations to families of functions (quadratic, trigonometric, polynomial, rational, ...), we will go beyond the basics as we use images, graph databases, APPS, and programs to support student understanding and concept development.

## **4:50 – 5:00 PM Closing Remarks (Click [Stages](#) to Attend)**

- Kelly Edenfield, 2021 GMC Program Chair
- Kim Conley, GCTM President

## 2021 Georgia Mathematics Conference Board

Conference Board Chair	Tashana Howse, Georgia Gwinnett College
2021 Program Chair	Kelly Edenfield, University of Georgia
Director of Exhibits	Benita Brock, Retired Mathematics Educator
Director of Facilities	Lynlee Barrett, Cairo High School
Director of Technology	Jenna Barton, Paulding County Schools
Director of Promotions	Gayle Herrington, Henry County Schools
Director of Records	Nikita Patterson, Georgia State University
Registrar	Tammy Donalson, Retired
Director of Special Events	Zacharel Veal, Bibb County School District
Director of Volunteers	Richard Kilburn, Middle Georgia State University
Information Technology	Bill Shillito, Oglethorpe University
Conference Coordinator	Gregory Chamblee, Georgia Southern University
GCTM President	Kimberly Conley, Lee County Schools
Executive Director	Debbie Poss, Retired
Treasurer	Chuck Garner, Rockdale Magnet School

## 2022 Georgia Council of Teachers of Mathematics Executive Committee

GCTM President	Kimberly Conley, Lee County Schools
GCTM President-Elect	Tammy Donalson, Retired
Vice President for Advocacy	Shelly Allen, Richmond County School District
Vice President for Competitions	Angelique Allen,
Vice President for Constitution & Policy	Don Slater, Retired
Vice President for Honors and Awards	LaTonya Mitchell, Valdosta City Schools
Vice President for Regional Services	Jennifer Donalson, Grady County School District
GMC Chair	Tashana Howse, Georgia Gwinnett College
Secretary	Storie Atkins, Columbus High School
NCTM Representative	Don Brown, Middle Georgia State University
Publications Editor	Rebecca Gammill, Cobb County Schools
Information Technology	Bill Shillito, Oglethorpe University
Membership Director	Susan Craig, Retired
Executive Director	Debbie Poss, Retired
Treasurer	Chuck Garner, Rockdale Magnet School

## Serving as Regional Representatives

Abby Allen	Northwest Region Representative
Katie Warwick	Northeast Region Representative
Jennifer Donalson	Southwest Region Representative
Jamesa Broome	Southeast Region Representative
Mike Wiernicki	Central West Region Representative
Taylor Thompson	Central East Region Representative
Tamara Pearson	Metro West Region Representative
Melanie Williamson	Metro East Region Representative

## 2021 Georgia Mathematics Conference Program Committee

Kelly Edenfield	Chair, University of Georgia
Tashana Howse	Georgia Gwinnett College
Kimberly Conley	Lee County Schools
Cassie Rape	Houston County Schools
Tamera Pearson	Director, Center of Excellence for Minority Women in STEM at Spelman College
Gregory Chamblee	Georgia Southern University

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