

# Missouri Council of Teachers of Mathematics Fall Conference | 2023 |

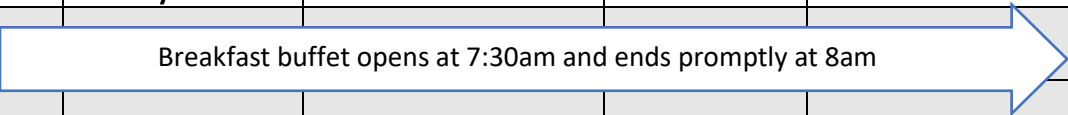
Friday, December 1, 2023

	Windsor III	Windsor IV	Truman	Bradley	Parliament 1	Parliament II	Parliament III	EXPO (Table Talk)
8:30-8:45	Welcome Session for New Attendees (Windsor III)							
<b><u>Session 1</u></b> 9:00-10:00	2. Introduction to Building Thinking Classrooms [General]	3. Intelligent (?) Use of ChatGPT in Mathematics Classrooms (K-12) [General]	4. Multiplication is Multiplication: Examining Student Thinking to See Structure and Make Connections [3-5]	5. Imagine the Possibilities with Students who have "Exceptional Promise" [General]	6. The Power of Grit in the Math Classroom! [General]	7. What's New with the DESE Mathematics Assessment Documents? [General]	8. Counting Counts! [K-2]	9. Difference of Squares - Algebraic, Geometric, and Mental Arithmetic Connections [6-8] [A] 10. Growing a Love for Math in the Secondary Classroom [9-12] [General] [B]
<b><u>Session 2</u></b> 10:15-11:15	11. Thinking Tasks in the High School Classroom [9-12]	12. Imagine Creating and Sustaining Productive Mathematics Learning Environments [General]	13. Teaching Standard Deviation and the Normal Curve through Experiments [9-12]	14. What the Heck is a Non-Dog Poodle? [3-8]	15. A World with No Variability: Imagine the Possibilities [6-8]	16. Student-Centered Coaching in the Math Classroom [General]	17. Playing Games to Strengthen Fluency [General]	
11:30-12:45								18. Lunch & Keynote
12:45-1:15								19. Business Meeting
<b><u>Session 3</u></b> 1:30-2:30	20. Vertical Visions - Viewing different representations through a K-12 lens (they can work for all!) [General]	21. Rethinking Mathematical Reasoning through Math Fluency [3-5]	22. Using Worked Examples and Classroom Resources to Support Student Engagement and Autonomy [9-12]	23. Imagining Possibilities of GIS in Math Class. [6-8]	24. Nudging Toward Student Engagement [General]	25. Catalyzing Change through Proactive Mathematics Coaching [General]	26. Re-Imagining Rational Number Concepts in Creative Ways [6-8]	
<b><u>Session 4</u></b> 2:45-3:45	27. The Power of Base Ten Blocks in Upper Elementary [3-5]	28. Let's Change School Mathematics in Missouri! [General]	29. MOCSM Business Meeting [General]	30. Creating K-2 Mathematicians: Building the Foundation for Confident Problem Solvers [K-2]	31. Building Thinking Classrooms: Assessing Learning [9-12]	32. Placing Problem Solving for Maximum Impact [9-12]	33. The Geometry of Music [General]	34. Envision What Your Students Can Learn from MCTM Contests [4-12] [A] 35. Alternatives to Ability Grouping in the Mathematics Classroom: Considering Underlying Assumptions [3-5] [B]

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	Windsor III	Windsor IV	Truman	Bradley	Parliament 1	Parliament II	Parliament III	EXPO (Table Talk)
<b>Session 5</b> 4:00-5:00	36. Back to the Future: Breaking Down Standards [General]	37. Developing Algebraic Concepts Using Diagrams and Manipulatives [6-8]	38. MAT <sup>2</sup> Business Meeting [General]	39. Give Me A Sine [9-12]	40. Strategies Used to Promote Discourse in Mathematics Classrooms [9-12]	41. Creating Math Love & Improving Number Sense [K-5]	42 Solving the Fractions Problem: From Research to Classroom [3-5]	43. Student Efforts in Math Education: examining student-led initiatives and their impact [General] [A]
								44. Playing with Patterns [General] [B]

Saturday, December 2, 2023

	Truman	Bradley	Windsor IV	Parliament I	Parliament II	Parliament III	EXPO
7:30-8:00	Breakfast buffet opens at 7:30am and ends promptly at 8am 						45. Breakfast
8:00-9:00							46. MCTM Outstanding Educator Awards & Door Prizes
<b>Session 6</b> 9:15-10:15	47. MCTM Summer Series [6-8]	48. MCTM Summer Series [9-12]	49. Solving Mathematics Problems Without Using Formulas [General]	50. Making Sense of Problem Solving [3-5]	51. Card Game to Develop Conceptual Understanding of Operations with Integers [6-8]	52. Geometry Word Play [3-5]	
	Come join our summer participants and get a taste of what the MCTM Summer Series has to offer! Content shared during these sessions is NEW.						
<b>Session 7</b> 10:25-11:25	53. MCTM Summer Series [K-2]	54. MCTM Summer Series [3-5]	55. Empowering Learning: Strategies to Cultivate Student Flexibility [6-8]	56. Summative Assessment Alternatives [9-12]	57. Teaching Math with Robots [6-8]	58. 360 Degree Math: Equity, Engagement, Achievement for ALL [General]	59. I have to teach THAT (Statistics) in Algebra?! [9-12] [A]
							60. Measurement Olympics [3-5] [B]
<b>Session 8</b> 11:35-12:35	61. Questioning Students' Mathematical Thinking [3-5]	62. Re-Thinking Real World Projects [6-8]	63. Making Sense of Math through Modeling: The Concrete-Pictorial-Abstract Method [General]	64. Where are they at? Making sense of student progress [General]	65. Building Thinking Classroom [General]	66. Let's Code [9-12]	67. The Math Machine-- A Simple Box Makes Finding Patterns is Fun [General] [A]
							68. Two Instructional Strategies That Initiate Student Thinking [6-8] [B]

SEATING CAPACITY (approximate): Parliament I, II, III – 50      Bradley – 20      Truman – 25      Windsor III, IV – 100

## Session 0 – Friday 8:30-8:45am

### 1. Welcome Sessions for New Attendees [General]

Brian Swink, MCTM President | [bswink@nwmissouri.edu](mailto:bswink@nwmissouri.edu)

## Session 1 – Friday 9:00-10:00am

### 2. Introduction to the Building Thinking Classroom [MoCSM—Missouri Council of Supervisors of Mathematics]

Angela Dorsey & Madeline Smith

Northwest Missouri State University | [adorsey@nwmissouri.edu](mailto:adorsey@nwmissouri.edu)

Are your students actively engaged in thinking about math? What practices need to be incorporated to initiate students are thinking about math? Join us to immerse yourself in Peter Liljedahl's first three research-based practices.

### 3. Intelligent (?) Use of ChatGPT in Mathematics Classrooms (K-12) [General]

John Lannin & Tiffany LaCroix

University of Missouri | [LanninJ@missouri.edu](mailto:LanninJ@missouri.edu)

In this session we will examine some of the strengths and limitations of how we can use ChatGPT to engage students in mathematical reasoning. Background on ChatGPT and specific examples will be provided for various grade levels.

### 4. Multiplication is Multiplication: Examining Student Thinking to See Structure and Make Connections [3-5]

Corey Webel, University of Missouri | [webelcm@missouri.edu](mailto:webelcm@missouri.edu)

Participants will analyze and discuss solutions for a fifth-grade multi-digit multiplication task. Some solutions attend explicitly to multiplicative structure, creating opportunities for connections to multiplication with fractions, expressions, etc.

### Session Evaluations



### 5. Imagine the Possibilities with Students who have “Exceptional Promise” [General]

Christine Nobbe, Department of Elementary and Secondary Education | [Christine.Nobbe@dese.mo.gov](mailto:Christine.Nobbe@dese.mo.gov)

“Students with exceptional mathematical promise must be engaged in enriching learning opportunities...” Using prime numbers as an example, we will explore techniques, including enrichment & acceleration, to develop and nurture math talent & engagement.

### 6. The Power of Grit in the Math Classroom! [General]

Dr. India White, Big Ideas Learning | [iwhite@larsontexts.com](mailto:iwhite@larsontexts.com)

This session discusses effective implementation of grit in the math classroom. As students see themselves as capable learners, they will demonstrate proficiency in their learning while observing the SMPs.

### 7. What’s New with the DESE Mathematics Assessment Documents? [MoCSM-General]

Kevin Voepel & Cathy Battles

Missouri Council of Supervisors of Mathematics | [kdvoepel@umkc.edu](mailto:kdvoepel@umkc.edu)

We will take a deep dive into the updated mathematics assessment documents, including the recently updated item specifications, performance level descriptors, blueprints, and math blocks. How can we use these documents on the journey to proficiency?

### 8. Counting Counts! [K-2]

Susan Harp, Carden Park Elementary School | [s.m.harp81@gmail.com](mailto:s.m.harp81@gmail.com)

Do you have a weird break in your class? Do you need to break up your day? Do your students need counting practice? Do your students struggle with number sense? If you answered yes, maybe counting is the answer. Join me for tips, and procedures to help!

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## 9. Difference of Squares – Algebraic, Geometric, and Mental Arithmetic Connections [6-8]

Kurt Killion, retired, Missouri State University | [Kurtkillion@missouristate.edu](mailto:Kurtkillion@missouristate.edu)

Engage in multiple representations related to difference of squares. You and your students will confidently and conceptually deal with mental arithmetic for tasks like  $57 \times 63$  and  $98^2$ .

## 10. Growing a Love for Math in the Secondary Classroom [General]

Sarah Browne, Education Plus – St. Louis | [sbrowne@edplus.org](mailto:sbrowne@edplus.org)

This session will explore cultivating a growth mindset in the secondary math classroom and its impact on student learning. Participants will learn to create a secondary classroom environment that fosters resilience, perseverance, and a love for math!

## Session 2 – Friday 10:15-11:15am

### 11. Thinking Tasks in the High School Classroom [9-12]

Cara Hanlin & Christy Green

Rolla Public Schools | [chanlin@rolla31.org](mailto:chanlin@rolla31.org)

You have defronted your classroom; you have VNPs; you have random groups; how do you take the next step? Join us to hear how we have incorporated thinking tasks, thick and thin slicing, CYU and meaningful notes. Let us inspire you to take that next step

### Do you need funds to implement some good ideas?

Through the Fund for the Advancement of Mathematics Education (FAME) the Missouri Council of Teachers of Mathematics awards up to **\$2000** per teacher to improve classroom instruction. Go to [moctm.org](http://moctm.org) and click on the events tab. Submit by **April 5, 2024**. Any questions contact Joann Barnett ([Joannbarnett@missouristate.edu](mailto:Joannbarnett@missouristate.edu)).

## 12. Imagine Creating and Sustaining Productive Mathematics Learning Environments [MoCSM-General]

Marilyn Cannon, University of Central Missouri | [marilyncannon5@gmail.com](mailto:marilyncannon5@gmail.com)

Mathematics classrooms continue to change in physical space, mathematical discourse, tasks, assessments, and family/community connections. This session will provide an opportunity to imagine the possibilities in each of these mathematics classroom areas.

## 13. Teaching Standard Deviation and the Normal Curve through Experiments [9-12]

Shellie Myers, Glendale High School | [smyers@spsmail.org](mailto:smyers@spsmail.org)

Participants will explore through experiments and discourse standard deviation and the normal curve. They will be able to teach their students with fun experiments and dialogue relying on intuition and thinking.

## 14. What the Heck is a Non-Dog Poodle? [3-5]

Adam Harbaugh and Gay Ragan, Missouri State University |

[aharbaugh@missouristate.edu](mailto:aharbaugh@missouristate.edu)

Dogs are either poodle dogs or non-poodle dogs, but non-dog poodle is nonsensical (all poodles are dogs). In this presentation, we will explore and justify relationships within and between categories of quadrilaterals based on properties and definitions.

### Session Evaluations



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## 15. A World with No Variability: Imagine the Possibilities [6-8]

Bob Glasgow, Southwest Baptist University | [bglasgow@sbuniv.edu](mailto:bglasgow@sbuniv.edu)

To understand the central concept of statistics, variability, it is helpful to imagine a world with no variability. From this starting point, students can build conceptual understanding of variability and ways to measure it (MAD / standard deviation).

## 16. Student-Centered Coaching in the Math Classroom [MoCSM—Missouri Council of Supervisors of Mathematics]

Andrea Pullan and Ashley Nguyen, Republic School District | [andrea.pullan@republicschools.org](mailto:andrea.pullan@republicschools.org)

Student-centered coaching is a highly effective, evidence-based coaching model that shifts the focus from “fixing” teachers to collaborating with them to design instruction that targets student outcomes.

## 17. Playing Games to Strengthen Fluency [General]

Stacey Maddeaux, Agency for Teaching, Leading, and Learning | [staceymaddeaux@missouristate.edu](mailto:staceymaddeaux@missouristate.edu)

Explore the benefits of offline games to help strengthen fluency! We will provide the opportunity to see how games can be incorporated into the presentation of information and how they can be used to generate discussion.

## Friday 11:30am-12:30pm

### 18. Lunch and Keynote Address: “Touch the Heart, Teach the Mind”

## Friday 12:30-1:00pm

### 19. MCTM Business Meeting

#### Session Evaluations



<https://bit.ly/MCTMF23>

## It is Fun to (Work and) Play at the YMTA!

To address the issue of a secondary mathematics teacher shortage, Missouri State University is recruiting high school sophomores and juniors to participate in the Young Mathematics Teacher Academy (YMTA) in June 2023. Do you have a student who loves math and might be interested in becoming a teacher? Contact Joann Barnett [JoannBarnett@missouristate.edu](mailto:JoannBarnett@missouristate.edu) or visit the YMTA booth in the exhibition hall for more information!

## Session 3 – Friday 1:30-2:30pm

### 20. Vertical Visions – Viewing Different Representations through a K-12 Lens (they can work for all!) [General]

Heather Noe, University of Missouri and Kati Quinn, Education Plus | [heathernoe@missouri.edu](mailto:heathernoe@missouri.edu)

Understanding the path of instruction can help teachers see where students have been and where they are going. We will share how different representations (e.g., area models, number lines) are used in elementary and can be used in MS and HS too.

### 21. Rethinking Mathematical Reasoning through Math Fluency [3-5]

Gretchen Guitard, Hand2Mind | [gretchencoleguitard@gmail.com](mailto:gretchencoleguitard@gmail.com)

Through the use of manipulatives, the participants will be guided through multiple lessons outlining how math can be taught differently.

### 22. Using Worked Examples and Classroom Resources to Support Student Engagement and Autonomy [9-12]

Mitchelle Wambua, University of Missouri-Columbia | [wambuamitchelle@gmail.com](mailto:wambuamitchelle@gmail.com)

In this interactive discussion session, we'll discuss how teachers can re-imagine their use of worked examples and classroom resources to support students' autonomy and engagement while they work independently.

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## 23. Imagining Possibilities of GIS in Math Class [6-8]

Dee Leible, CCLS | [dleible@ccls-stlouis.org](mailto:dleible@ccls-stlouis.org)

This session will focus on data analysis for middle school but can also be applied to secondary classrooms as well. They will locate data on ArcGIS that incorporates real life data.

## 24. Nudging Toward Student Engagement [General]

Amber Candela, University of Missouri – St. Louis | [candelaa@umsl.edu](mailto:candelaa@umsl.edu)

How can we better engage students in our lessons? In this session learn about small instructional practices, such as One Paper or Put a Bow on It, that you can use to support students' mathematical understanding and increase student engagement.

## 25. Catalyzing Change through Proactive Mathematics Coaching [MoCSM—General].

Marilyn Cannon, University of Central Missouri | [marilyncannon5@gmail.com](mailto:marilyncannon5@gmail.com)

The Proactive Coaching Framework can assist all mathematics leaders to elevate their coaching and leadership skills creating intentional, meaningful learning experiences for students and educators.

## 26. Re-Imagining Rational Number Concepts in Creative Ways [6-8]

Gay Ragan, Joann Barnett, & MSU pre-service middle school math students, Missouri State University | [gayragan@missouristate.edu](mailto:gayragan@missouristate.edu)

Come support future teachers and walk away from this session with a variety of creative ideas to engage students and enhance their understanding of rational number concepts.

## Session Evaluations



<https://bit.ly/MCTMF23>

## Session 4 – Friday 2:45-3:45pm

### 27. The Power of Base Ten Blocks in Upper Elementary [3-5]

Meredith Beggs and Gabrielle Byers, University of Central Missouri | [mbeggs@ucmo.edu](mailto:mbeggs@ucmo.edu)

Base ten blocks are a common math tool used in primary grades, but did you know that these manipulatives can also be used for multi-digit computation AND as a way to make sense of decimals? Join us to explore the power of both virtual and concrete blocks!

### 28. Let's Change School Mathematics in Missouri! [General]

Charles Munter, University of Missouri-Columbia | [munterc@missouri.edu](mailto:munterc@missouri.edu)

This session will invite participants to imagine new possibilities for the school mathematics experiences of Missouri's children and teachers—a pitch for confronting obstacles in pursuit of something more enjoyable, more equitable, and more empowering.

### 29. MoCSM Business Meeting

### 30. Creating K-2 Mathematicians: Building the Foundation for Confident Problem-Solvers [K-2]

Linda Null, Southeast Missouri State University | [lnull@semo.edu](mailto:lnull@semo.edu)

Using the structure of word problems, K-2 teachers will build a foundation for developing sense-making and perseverance in solving problems. See how problem types can guide students in selecting and using multiple representations to show their thinking.

### 31. Building Thinking Classrooms: Assessing Learning [9-12]

Tonya Davis, West Plains Zizzer Pride Academy | [tonya.davis@zizzers.org](mailto:tonya.davis@zizzers.org)

Methods used to determine learning in a Building Thinking Classroom, especially if your school doesn't use Standards Based Grading. This presentation will detail how I have my classroom grading system set up and how I assess students during class.

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## 32. Placing Problem Solving for Maximum Impact [9-12]

Samuel Otten, University of Missouri-Columbia | [ottensa@missouri.edu](mailto:ottensa@missouri.edu)

Secondary math teachers often teach thoughtful lessons, but a recent meta-analysis of 50+ studies showed that seemingly effective lessons may not involve ideal timing. This session explains how shifting 5-10 minute can make a big difference for learning.

## 33. The Geometry of Music [General]

David Ewing, University of Central Missouri | [mathmanewing@gmail.com](mailto:mathmanewing@gmail.com)

Learn to Discover, Create, and teach Geometric Transformations that occur in Music! Recognize reflections, rotations, translations and dilations that occur in existing music and create your own music using transformations helped by technology (Musescore).

## 34. Envision What your Students Can Learn from MCTM Contests [4-12]

Sonya Land, University of Missouri-St. Louis | [sonya@mathisfun.org](mailto:sonya@mathisfun.org)

This session will provide ways to broaden all students' math knowledge through contest problems as well as look at how students can learn from common mistakes on last year's MCTM contests at all levels.

Don't be a Lone Wolf

*Invite a friend to join MCTM!*

### Benefits:

- FREE Math and Art Contest
- FAME Grants
- Newsletter



## 35. Alternatives to Ability Group in the Mathematics Classroom: Considering Underlying Assumptions [3-5]

Cassandra Kinder, University of Missouri-Kansas City | [c.kinder@umkc.edu](mailto:c.kinder@umkc.edu)

In this presentation, we present two alternatives to ability grouping. In both cases, teachers attend to students' thinking in conceptual ways and promote "mixed" ability grouping, but their approaches differ in the narratives they advance about children.

### Session Evaluations



<https://bit.ly/MCTMF23>

## Session 5 – Friday 4:00-5:00pm

### 36. Back to the Future: Breaking Down Standards [General]

Demicco E Witherspoon, Teachers Like Me | [demiccowitherspoon@gmail.com](mailto:demiccowitherspoon@gmail.com)

Going back to the basics of breaking down math standards to progressively move student learning towards mastery. Learning to break down standards allows educators to make learning culturally relevant for students and reimagining math learning tasks.

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## 37. Developing Algebraic Concepts Using Diagrams and Manipulatives [6-8]

Kevin Voepel and Tammy Voepel, University of Missouri-Kansas City | [kdvoepel@umkc.edu](mailto:kdvoepel@umkc.edu)

Concepts from algebra will be explored using manipulatives and diagrams to create a concrete understanding before applying these ideas in abstract settings, thus enhancing student learning. We will look at several activities that support the MLS.

## 38. MAT<sup>2</sup> Business Meeting [General]

### 39. Give me a Sine [9-12]

William McNeary, Southeast Missouri State University | [wwmcneary@semo.edu](mailto:wwmcneary@semo.edu)

I've been teaching Trigonometry wrong for 20 years, how about you? What exactly is the "sine" of an angle? What are the 3 "primary" trig functions? Come to this session to "see" trig in a whole different way.

## 40. Strategies Used to Promote Discourse in Mathematics Classrooms [9-12]

Gerry Long, CPM Educational Program | [gerrylong@cpm.org](mailto:gerrylong@cpm.org)

Activities will be modeled that encourage students to talk, write, and share ideas. Participants will actively engage in strategies that deal with discourse while working through a math task and make connections to the 8 Effective Teaching Practices.

## 41. Creating Math Love & Improving Number Sense [K-5]

Elizabeth Mottaz and Mary Helmuth, Columbia Public School | [Elmottaz@cpsk12.org](mailto:Elmottaz@cpsk12.org)

Do you want to develop math love and improve number sense in your building? At this session, we will share ideas of how to bring students and teachers together with fun, engaging, building-wide activities that promote a positive math culture.

## 42. Solving the Fractions Problem: From Research to Classroom

Patty Low, Explore Learning | [patty.low@explorellearning.com](mailto:patty.low@explorellearning.com)

Review research and discuss the impact of not understanding fractions for students downstream. Throughout the session, I will share 3 tips based on research for teaching fractions and how Frax an online and adaptive program supports all students.

## 43. Student Efforts in Math Education: Examining Student-led Initiatives and their Impact

Shubha Gautam, Rock Bridge High School | [gautam.shubha33@gmail.com](mailto:gautam.shubha33@gmail.com)

Presentation will describe free math-related programs for students across Missouri made by students. Some examples of such initiatives would be math competitions (March Mathness at Rock Bridge, INTEGIRLS etc.) and classes. Impact will be explored.

## 44. Playing with Patterns [General]

Natalie Moon, Raytown Public Schools | [natalie.moon@raytownschools.org](mailto:natalie.moon@raytownschools.org)

To develop algebraic thinking, students must be given the chance to generalize using numbers, operations, and patterns. Algebraic thinking isn't only about using a variable as a placeholder. Join me to discover what it's like to think algebraically. This won't be yo mama's Algebra class.

## Session Evaluations



<https://bit.ly/MCTMF23>



**Saturday 7:30-8:00 am**

45. Breakfast

**Saturday 8:00-9:00 am**

46. MCTM Outstanding Educator Awards & Door Prizes

**Session 6 – Saturday 9:15-10:15 am**

**47. MCTM Summer Series [6-8]**

Come join our summer participants and get a taste of what the MCTM Summer Series has to offer! Content shared during this session is NEW.

**48. MCTM Summer Series [9-12]**

Come join our summer participants and get a taste of what the MCTM Summer Series has to offer! Content shared during this session is NEW.

**49. Solving Mathematics Problems Without Using Formulas [General]**

*Dix Pettey, University of Missouri-Columbia* | [petteyd@missouri.edu](mailto:petteyd@missouri.edu)  
*Liza Cummings, SIU-Edwardsville* | [lcummings@siu.edu](mailto:lcummings@siu.edu)

Students often use mathematics as a mechanical application of arcane formulas and algorithms. But a student who gives thoughtful consideration to a few simple questions can frequently solve interesting problems without appealing to arbitrary rules.

**50. Making Sense of Problem Solving [3-5]**

*Cindy Saltsgaver, Math Consultant with the Northeast RPDC* | [csaltsgaver@truman.edu](mailto:csaltsgaver@truman.edu)

If you are looking for ways to build your students' confidence with word problems, this session is for you. You will learn multiple routines to use in your class that will help your students think about and make sense of word problems.

**51. Card Game to Develop Conceptual Understanding of Operations with Integers [6-8]**

*Jenni Wall, Jaclyn Small, & Stacy Eychaner, Northwest Missouri State University & Maryville Middle School* | [jwall@nwmissouri.edu](mailto:jwall@nwmissouri.edu)

Alien Eggs is a card game that starts as an engaging game and then progresses to students developing conceptual understanding of adding and subtracting positive and negative integers. Let's play the game using manipulatives and improve students' learning!

**52. Geometry Word Play [3-5]**

*Yvonne Hunziker, Republic R3 – Sweeney Elementary* | [yvonne.hunziker@republicschools.org](mailto:yvonne.hunziker@republicschools.org)

I will focus on ideas teachers can use to boost geometry vocabulary to help students learn to attend to precision and construct viable explanations/arguments to support their thinking in shape attribute classification and other geometry activities.

**Session Evaluations**



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## Session 7 – Saturday 10:25-11:25 am

### 53. MCTM Summer Series [K-2]

Come join our summer participants and get a taste of what the MCTM Summer Series has to offer! Content shared during this session is NEW.

### 54. MCTM Summer Series [3-5]

Come join our summer participants and get a taste of what the MCTM Summer Series has to offer! Content shared during this session is NEW.

### 55. Empowering Learning: Strategies to Cultivate Student Flexibility [6-8]

*Shelly Seaton, Northeast RPDC* | [sseaton@truman.edu](mailto:sseaton@truman.edu)

The focus of this session will be to discuss the importance of mathematical fluency and to equip teachers with examples of strategies that enhance students' mathematical flexibility, enabling them to approach mathematics with confidence and adaptability.

### 56. Summative Assessment Alternatives [9-12]

*Christina Behl, Osceola High School* | [Mrs.christinabehl@gmail.com](mailto:Mrs.christinabehl@gmail.com)

You hear a lot about different types of formative assessments, but you rarely hear about what makes a good summative assessment and different ways to create and use summative assessments. This'll be focused on the middle and high school math classroom.

### 57. Teaching Math with Robots [6-8]

*Kirsten Maronde and Kristi Porterfield, Stanberry Middle School* | [kmaronde@stanberryschools.org](mailto:kmaronde@stanberryschools.org)

We will be exploring how to incorporate the use of robots (dot/dash, ozobot, iRoot, and spheros) in the math classroom through exploration, formative and summative assessment, hands-on activities, and projects that can be implemented in your own classroom.

### 58. 360 Degree Math: Equity, Engagement, Achievement for ALL [General]

Sean Kavanaugh, 360 Degree Math | [sean@360degreemath.com](mailto:sean@360degreemath.com)

360° Math enables teachers and instructional leaders to improve Math achievement in their schools and make Math fun again! With 360° Math, students no longer work at their desks in isolation or in dysfunctional groups. Every student works every problem on

### 59. I Have to Teach THAT (Statistics) in Algebra? [9-12]

*Phillip Gegen, KC RPDC* | [pgegen@umkc.edu](mailto:pgegen@umkc.edu)

Using Chief's data to create scatterplots and lines of best fit to predict how many games they'll win in a season. Connecting this to writing linear equations will be a major focus.

### 60. Measurement Olympics [3-5]

*Tammy Voepel and Kevin Voepel, Southern Illinois University-Edwardsville* | [tvoepel@siue.edu](mailto:tvoepel@siue.edu)

Have you considered using stations in your math classroom? Participants will circulate through several stations as they are engaged in measurement activities using standard and nonstandard units of measurement.

## Session Evaluations



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## Session 8 – Saturday 11:35 am-12:35 pm

### 61. Questioning Students' Mathematical Thinking [3-5]

Eric Partridge, University of Missouri | [egpbk6@missouri.edu](mailto:egpbk6@missouri.edu)

This session focuses on developing skills for questioning students' mathematical thinking. After considering different question types and purposes, participants will analyze student work and brainstorm potential questions to ask the student.

### 62. Re-Thinking Real World Projects [6-8]

Sheila Hansen, Mount Vernon Middle School | [hansensheila@mtvernon.k12.mo.us](mailto:hansensheila@mtvernon.k12.mo.us)

Learn how to build your own adaptable classroom projects and lessons around real-world uses of mathematics. Examples of projects I have built will be given. Feel free to use mine and add your own flare. Have fun with teaching!

### 63. Making Sense of Math through Modeling: The Concrete-Pictorial-Abstract Method [General]

Dana Coleman, Kansas City Schools | [coleman.danam@gmail.com](mailto:coleman.danam@gmail.com)

This session introduces the concept of the "Why Before the How" where participants learn a strategy for conceptually introducing math concepts through hands-on manipulatives before moving to pictorial representations and finally abstract concepts.

### 64. Where are they at? Making sense of student progress [General]

Maria Stewart, University of Missouri-Columbia | [mntkd@umsystem.edu](mailto:mntkd@umsystem.edu)

This interactive discussion session will focus on ways to re-imagine making sense of student progress. I will share two tools for understanding student confidence and identifying unique strategies, which will be discussed as a whole group in the session.

### 65. Building Thinking Classrooms [General]

Tara Hutchens, Cassville R-IV School District | [thutchens@cassville.k12.mo.us](mailto:thutchens@cassville.k12.mo.us)

We will be participating in a "Thinking Classroom" and collaborating on best practices. Both seasoned and new "Thinking Classroom" teachers are welcome!

### 66. Let's Code [9-12]

Diane Broberg, Jody Marberry, & Melanie Moody, Mary Institute & St. Louis Country Day School | [diane.broberg@gmail.com](mailto:diane.broberg@gmail.com)

Logical reasoning...we all teach it. Use coding to enhance your class and build reasoning skills with your students. Come prepared to play and have fun!

### 67. The Math Machine – A Simple Box Makes Finding Patterns Fun [General]

Heidi Komorech, Nodaway-Holt R-7 | [hkomorech@nodholt.org](mailto:hkomorech@nodholt.org)

How can using a simple input-output box create authentic, engaging experiences that help students strengthen their pattern recognition? Find out how to use this fun tool K-6 grade!

### 68. Two Instructional Strategies That Initiate Student Thinking [6-8]

Faustina Baah, University of Missouri-Columbia | [fa6nz@umsystem.edu](mailto:fa6nz@umsystem.edu)

I will share the messy idea and super wrong kinda right instructional strategies that are designed to initiate student thinking. Come learn about these two instructional strategies and how to implement them in your classrooms.

### Session Evaluations



<https://bit.ly/MCTMF23>

## Missouri Council of Teachers of Mathematics Fall Conference | 2023 |

“Unconference” During the Fall Conference in the [Executive Board Room!](#)

**Confusing right! An “unconference” is an opportunity for folks to get together and share ideas and thoughts around a common topic. There will be either a guiding question or a topic, but there is no formal presentation. All you do is show up and share your thoughts to help us imagine possibilities. You are welcome to drop in and drop out at your leisure!**

Session	Time	Question/Topic
1	Friday, 9:00-10:00	What are your best classroom management strategies for supporting a <i>Building Thinking Classroom</i> ?
2	Friday, 10:15-11:15	What do you need math stakeholders (e.g., MoCTM, MoCSM, MAT <sup>2</sup> , DESE, legislators, administrators) to hear?
3	Friday, 1:30-2:30	Redesigning the MoCTM website—Help us make it a “go to” place for resources and ideas for you. MoCTM Contests—How can we better support your efforts?
4	Friday, 2:45-3:45	How are you using AI in your classroom?
5	Friday, 4:00-5:00	What are your “go-to” student engagement strategies?
6	Saturday, 9:15-10:15	What are your “go-to” strategies to improve fact fluency?
7	Saturday, 10:25-11:25	How do you use “thin slicing” to support learning in your classroom?
8	Saturday, 11:35-12:35	What is that one topic that you struggle to teach effectively?

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#### Five Practices for Orchestrating Productive Mathematics Discussions, Second Edition

Margaret S. Smith and Mary Kay Stein

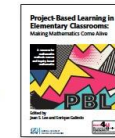
The five manageable practices explained in this book have the power to put teachers in control of productive classroom discussions. The model—anticipating, monitoring, selecting, sequencing, and connecting—focuses on prior planning and limits the amount of improvisation required during the lesson.

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Kathryn B. Chval, Erin Smith, Lina Trigos-Carrillo, and Rachel J. Pinnow



This book presents an overview of the essentials of project-based learning (PBL) and the evidence that supports the use of PBL. It showcases PBL units addressing the CCSS for Math for the purpose of demonstrating how PBL works and the learning that results.

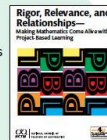
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#### Rigor, Relevance, and Relationships: Making Mathematics Come Alive with Project-Based Learning

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This book supplies teachers with a challenging and rewarding new way to deeply engage their students in secondary mathematics. *Rigor, Relevance, and Relationships* describes the nuts and bolts of designing an effective PBL unit, outlines how this method can help prepare students for future challenges in life and learning, and showcases a number of classroom-tested examples of PBL lessons.

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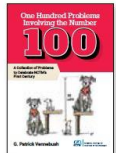
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Julia Aguirre, Karen Mayfield-Ingam, and Danny Martin

This book invites K–8 teachers to reflect on their own and their students’ multiple identities. Rich possibilities for learning result when teachers draw on these identities

to offer high-quality, equity-based teaching to all students. The authors encourage teachers to reframe instruction by using five equity-based mathematics teaching practices.



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NATIONAL COUNCIL OF TEACHERS OF MATHEMATICS

## Missouri Council of Teachers of Mathematics Fall Conference | 2023 |

A huge thank you to the two corporate sponsors who funded meals and manipulatives for our Summer Series participants this past year!



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Patrick McCullough  
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