

2018  
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**IGNITE: FUELING A PASSION FOR MATH**

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**SESSION #1- 8:00 am – 9:00 am**

**Fueling Fluency (K-2)**

Presented By: Rebecca Johnson (Crossroads Elementary School)

Room: Salon AB

Description: Addition and subtraction fluency is foundational for young learners to be able to move on to more difficult mathematics. I will be sharing activities using bead boards, ten frames and number lines that I have found to be successful with students. I will also be sharing data I used to guide my fluency lessons.

**Math Stories....Mystery Solved (Pre-K, K-2, 3-5)**

Presented By: Belle Rush (KCM)

Room: Salon C

Description: Math stories typically are one of the lowest areas of student achievement, and one of the hardest things to teach and for kids to understand. In this session, find out what types of stories should be taught at each grade level Pre-K-5. We will view videos of student strategies as they think through and solve different math stories while incorporating number talks. These activities work well for MITs and Plus 2 Teachers' collaboration efforts, and are applicable to any classroom setting.

**TNT, Touch-N-Talk (K-2, 3-5)**

Presented By: Rhonda Bell (Bell Elementary), Sasha Chaplin (Bell Elementary), Mindy Bell (Bell Elementary), Megan McCutchen (Bell Elementary)

Room: Salon D

Description: Kathy Richardson's approach to teaching place value, developing viable arguments, critiquing the thinking of others, and demonstration of classroom activities will further develop the classroom teacher's approach to teaching place value as well as implementing math talks throughout daily math lessons. Attendees will be actively engaged in the demonstration of classroom activities. Math talk stem starters and other resources will be provided. The spark of enthusiasm will spread among even reluctant learners, through engaging conversation among peers and the intentional use of materials.

**What Ignites You? What Are You Passionate About? (General/All Grade Levels)**

Presented By: Dee Crescitelli (Kentucky Center for Mathematics)

Room: Salon E

Description: If you had only five minutes to share what you are most passionate

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about in mathematics education, what would you share? Come see five educators share their thoughts on this in a series of Ignite! presentations. Each presenter will get 20 slides, which automatically advance every 15 seconds. The result is a fast and fun presentation which lasts just 5 minutes. The content of the five mini-presentations will range from general math wisdom to best use of data to making connections between grade levels and will be applicable for elementary through college.

Participants will leave with inspiration for how share their own math passions, as well as information about how to use this format as part of their own teaching and professional development.

**3-Act Tasks: Making Math Meaningful For Students and Teachers (K-2, 3-5)**

Presented By: Bindu Sunil (Shelby County Schools), Philip Wakeman (Shelby County Schools)

Room: Salon F

Description: 3-Act Tasks ignite passion for math learning because they engage ALL students in meaningful modeling of math concepts. You will experience the structure of 3-Act Tasks that promote estimation, thinking, and reasoning through mathematical modeling, and through student discourse about their mathematical thinking. In addition, you will analyze student work and learn ways to support various student invented strategies, and consider teacher moves that help scaffold student understanding and efficiency.

**Number Talks...How and Why? (K-2, 3-5)**

Presented By: Jessica Dye (Inez Elementary School), Sherrironica Thomas (Isonville Elementary)

Room: Salon HG

Description: Number talks were developed for teachers to engage students in mental math with interesting math problems. Educator's can use number talks regularly as introductions to the daily mathematical practice, as 'bellringers' leading to other lessons, or as stand alone extended engagements with mathematical concepts. Number Talks are short (approximately 10 minutes), daily exercises aimed at building number sense. Number sense is the ability to play with numbers meaning students can visualize problem solving, perform calculations quickly, and are flexible in their mathematical strategy. Students who have strong number solve problems in more than one way and check that their answers make sense. During a number talk, students are thinking, asking their peers questions, and explaining their own thinking all while the teacher records the thinking.

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After this session on examples and demonstrations of number talks, our goal is that educators have resources and the support to prepare for and design purposeful number talks for their students to ignite a passion for math in their very own classrooms. The speakers will show videos on number talks implemented in their school and discuss how number talks are successful throughout their school at different grade levels. They will interact with the audience to demonstrate number talk examples and provide examples/resources for them to return to their classroom and prepare meaningful number talks for their students.

**Short and Engaging Activities to Focus Your Students. Let's Have Fun! (6-8, 9-12)**

Presented By: Kelly Lindsey (Boone County High School)

Room: Darby Dan/Calumet

Description: Whether you have 45 minutes or 90 minutes, sometimes your students need a break. In this session, we will engage in short activities that support your student community and your content. First, we will explore 'soft skills'. We will demonstrate activities that develop skills in group work, communication (listening and speaking), problem solving, and time management. These skills are not always math problems but are vital to developing critical thinking skills. The soft skills games will include hands-on cooperative learning, negotiation, and designing a plan to complete a task. Second, we will discuss short games that help review/preview necessary skills. We will also discuss how to adapt the activities to your class and how to build a library of activities to have ready when you need them. All of our discussion is designed to promote mathematical conversation within small groups. The games will include card sorts, board games, number games, and others. Participants will receive some print materials and be able to access some materials on-line. Sometimes a short activity can re-ignite curiosity and a desire to learn. Let's have some fun!

**Fueling a Growth Mindset (K-2, 3-5)**

Presented By: Lisa Pinson (Millbrooke Elementary School)

Room: Dixiana

Description: 'I am not good at math!' 'My Mom wasn't good at math, so I'm not either!' Does this sound familiar? We teach so many students who already have the idea that being successful in math is impossible. However, these mindsets are just beliefs. They are powerful beliefs, but they are just something in our minds, and we can change our mind.

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In this session, participants will discover their mindset while exploring strategies for recognizing the mindset of their students. Strategies and resources will be shared for creating a growth mindset environment in the classroom.

With a Growth Mindset, student effort is increased with no fear of failure. Effort ignites ability and turns into achievement.

**Formative Assessment Lessons and the AfterMaths of the FALS. (6-8)**

Presented By: Erin Kleier (JCPS: Noe Middle School)

Room: Lane's End

Description: This session will be a demonstration of classroom activities and discussion around Formative Assessment Lessons. These lessons are part of the Math Collaborative Design (MDC) that exposes students' mathematical knowledge and reasoning, helping teachers guide them towards improvement, and monitoring progress. Teachers will take away formative assessment lessons (FALs) and aftermaths of the lessons to identify their students' obstacles, misconceptions, and gaps in learning. This session in connection with the conference emphasis will enable teachers to empower their students to turn their aspirations to achieve the Common Core Standards into classroom realities.

**SESSION #2- 9:15 am – 10:15 am**

**FEATURED SESSION: Using Robotics to Engage in Mathematical Practices**

**\*\*2 HOUR PRESENTATION: 9:15 am – 11:15 am\*\***



Presented By: Mr. Michael Flynn (Mount Holyoke College)

Grade Levels: **Pre-K, K-2, 3-5**

Room: Terrace Ballroom

Description: Engaging students in the Standards for Mathematical Practice through robotics is a powerful way to get young students actively collaborating and problem solving. In this hands-on session we will use easily programmable robots and explore the rich mathematical ideas that emerge as we navigate a variety of tasks and challenges with them. We will then discuss how to use robotics and programming in Pre-K-5 classrooms and examine videos of students engaged in this work.

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 **Early Childhood Development: Games, Technology and More! (Pre-K, K-2)**

Presented By: Tina Silvestri Gagliano (DCF Mathematics, Inc), Krissy Klouda (DCF Mathematics, Inc)

Room: Salon AB

Description: Participants will learn how to leverage digital technology and utilize games to enhance playful instruction in development of early number including early counting strategies, 1-1 correspondence and verbal counting. There will be whole group and small group activities as well as a back channel to ensure the participation of all involved in the session. Participants will be asked to bring iPhones and/or iPads. Some iPads will be available for use during the presentation as well.

**Supporting All Learners in Accessing Grade-Level Math Content by Examining Student Work (K-2, 3-5)**

Presented By: Jana Bryant (Daviness County Public Schools)

Room: Salon C

Description: In this interactive session, the presenter will share examples of student work and explore strategies to address students' "unfinished" learning within grade level contexts. We will examine the developmental math progressions in the areas of addition and subtraction, multiplication and division, and fractions. Participants will apply strategies to strengthen their math practice in order to meet the needs of all students. Additionally, they will leave with sample student work to enhance conversations within their math PLCs. Recommendations will be given for addressing gaps in student understanding to prevent common pitfalls schools fall encounter. Be ready to roll up your sleeves for this exciting and passionate math conversation about student work! Target audience is K-5 teachers, interventionists, coaches, and/or specialists.

**Building a Growth Mindset in the Math Classroom using Self-Assessment, Discussion, and Feedback. (General/All Grade Levels)**

Presented By: Amber Stacy (Lee County Middle School), Serita McCoy (Lee County Middle School)

Room: Salon D

Description: Cultivate a growth-mindset in your classroom to help your students realize their true potential and believe math is possible! Learn high-yield strategies

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used by two middle-school National Board Candidates that help build mathematics confidence. See demonstrations of these research-based strategies that develop student self-assessment, discussion, and feedback. These activities and strategies can be adapted to fit any grade level. Every resource presented will be available to you digitally or in print.

**Leverage Effective Teaching Practices By Engaging in Complex Tasks in Mathematics (K-2, 3-5)**

Presented By: Erin Chavez (Kentucky Department of Education)

Room: Salon E

Description: Are you ready to bring the fun back into the mathematics classroom where ALL learners engage in solving a complex task that promotes problem solving and reasoning? Then this session is built and designed for you as we ignite your passion for mathematics by leveraging effective teaching practices from Principles to Actions (NCTM 2014) and Taking Action (NCTM 2017) to ensure that ALL students are given the opportunity to access the mathematics and move their learning forward.

Objectives:

We will engage in solving mathematical tasks that promote problem solving and reasoning.

We will learn to leverage the 5 practices for orchestrating productive discourse in order to reflect on effective teaching practices in mathematics.

**Escape from Algebrar Island (6-8, 9-12)**

Presented By: Lisa Conn (Kentucky Christian University)

Room: Salon F

Description: Based on the highly popular 'Breakout' Escape Rooms, attendees will participate in an Algebra based, one hour adventure. This high participation activity will provide a template for other escape room ideas and an opportunity to brainstorm with other creative teachers on how to increase student engagement.

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**Mathematical Modeling: What Is It and What Does It Look Like Grades 4-8? (3-5, 6-8)**

Presented By: Jo Ann Mosier (Collaborative for Teaching and Learning), Rita Messer (Collaborative for Teaching and Learning)

Room: Salon HG

Description: Grades 4-8 mathematics teachers will share what they have learned about mathematical modeling in the last two years of a KDE Math Science Partnership Grant entitled Mathematical Modeling. Shifts in instructional practices that connect content to mathematical practices to context will be discussed. Additionally, participants will experience mathematical modeling tasks at each of G4-G8, with student work and prior instructional experiences.

**From Gaps to Growth: A School-Wide Approach (K-2, 3-5)**

Presented By: Ryan Dierson (Southside Elementary)

Room: Darby Dan/Calumet

Description: Do you have students who struggle to learn mathematics, but you don't know why? Join us to learn how one school is using the Assessing Math Concepts diagnostic in conjunction with the Developing Number Concepts series, both authored by Kathy Richardson, to systematically fill gaps in the mathematical understandings of its students. In this session, participants will learn about the systematic approach that the school has implemented as well as have the opportunity to explore various activities from the Developing Number Concepts series firsthand.

**Uncomplicated Remediation for Mathematical Thinking (K-2)**

Presented By: Katie Jacobs (Paris Elementary School)

Room: Dixiana

Description: Join us as we discuss how remediation can be a rewarding learning experience in the math classroom! Attend this session to learn about seamless approaches for remediation as we discuss several strategies that compliment any core math program. We will also provide effective tools for remediation planning as well as explore student friendly resources that support mathematical thinking.

**Designing Rigorous Instruction Using Quality Resources (K-2, 3-5)**

Presented By: Cara Osborne (Christian County Public Schools)

Room: Lane's End

Description: Eureka Math (curriculum) can be overwhelming when first being

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implemented. With this session participants will confidently walk away being able to dissect a Eureka Lesson. Participants will also learn how to incorporate other quality supplemental resources for differentiation into their Eureka lessons. Presenters will model and provide example lessons ready to use in the classroom.

 **Multiplication My Way: Igniting passion and understanding of basic multiplication facts. (3-5)**

Presented By: Craig Willmore (ORIGO Education)

Room: Bluegrass Pavilion

Description: Teachers will be treated to a variety of fun and engaging games and strategies that focus attention on basic facts for multiplication and division. Participants will work in pairs to play games and justify their thinking strategies. Participants will be provided with handouts of games that can be used in classrooms to reinforce basic facts.

**SESSION #3- 10:30 am – 11:30 am**

**Place Value: Beyond The Blocks (K-2)**

Presented By: Neysa Puckett (Waco Elementary School), Cecily Hall (Waco Elementary School), Cindy Gross (Waco Elementary School)

Room: Salon AB

Description: Find out how to take place value beyond the blocks in your primary classroom! Participants will leave with ways to develop math lessons that help their students understand the importance of grouping, ways to build and compare numbers across multiple settings, and how to use place value as part of their everyday conversations about numbers. After this session, you can apply these experiences into your classroom tomorrow so that your students will have a deeper understanding of numbers.

**Squirreling It Away: A Lesson Study on Planning and Facilitating a Rich Task (3-5, 6-8)**

Presented By: Angela Keene (SESC Educational Cooperative), Jennifer McDaniel (SESC Educational Cooperative), Samantha Cox (West Irvive Intermediate), Liz Renner (West Irvive Intermediate)

Room: Salon HG

Description: Rich mathematical tasks are essential for engaging learners and creating dynamic classroom cultures that encourage creativity, mathematical sense making, and productive struggle.



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Through an interactive lesson study, including authentic video clips and student work samples, participants will experience the facilitation of a differentiated task, make explicit connections to the NCTM Mathematics Teaching Practices, and explore the importance of thoughtful planning.

**Focus on Meaning: The Role of Models in Number Talks (K-2)**

Presented By: Sue Dolphin (Math Perspectives Teacher Development Center)

Room: Darby Dan/Calumet

Description: How can we best use models during Number Talks? We will examine four stages of using models as tools for thinking that help increase the effectiveness of Number Talks and support students in developing number relationships and structure of numbers and ultimately computational fluency.

**Math Routines: Developing Number Fluency (Pre-K, K-2)**

Presented By: Andrea Wheatcraft (Westridge Elementary School)

Room: Dixiana

Description: In this session, teachers will learn 10 quick math routines that are easy to implement and enjoyable for students. Math routines presented will target number fluency skills for early childhood students in grades Pre - 2. Participants will receive ready to use materials for several math routines.

**Igniting Mathematics Passion Through Mathematical Modeling (6-8, 9-12, General/All Grade Levels)**

Presented By: Tim Truitt (EdReports.org)

Room: Lane's End

Description: Mathematical Modeling will be examined through multiple examples in order to have an interactive discussion of its relevance for students. The examples presented will be resources that participants can take back to their classrooms, schools, and districts to begin using immediately. This session will also discuss how well Mathematical Modeling has been addressed by instructional materials and how teachers and schools can supplement, if needed, the materials they already have with tasks from FREE sources.

 **Re-igniting the Struggling Math Learner (K-2, 3-5)**

Presented By: Melinda Schwartz, Ed.D. (ORIGO Education)

Room: Bluegrass Pavilion

Description: Students who struggle in math often become disconnected from the mathematics classroom. What role does conceptual understanding play in assisting struggling math students? What are the steps to linking effective

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instruction and assessment for these students? Participants will utilize student work and videos to tackle these questions during this interactive workshop.

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**JOIN US FOR A COMPLIMENTARY LUNCH!**



11:30 am-1:00 pm  
Grand Ballroom

**KEYNOTE ADDRESS**

Dr. Jennifer Bay-Williams  
University of Louisville

*Becoming Fluent in How to Support Students' Procedural Fluency*

**SESSION #4- 1:15 pm – 2:15 pm**

**FEATURED SESSION: Igniting a Math Spark to Fire Up Student Thinking**

**\*\*2 HOUR PRESENTATION: 1:15 pm – 3:15 pm\*\***



Presented By: Dr. Cathy Seeley

Grade Levels: **Pre-K, K-2, 3-5**

Room: Terrace Ballroom

Description: How students think is at least as important as what they know, so focusing on HOW we teach is at least as important as WHAT we teach. Let's think together about what it takes to ignite every student's interest in math and help every one of them become a mathematical thinker and problem solver.

**Ignite a Passion For Math By Eliminating Misconceptions Of the Equal Sign (3-5)**

Presented By: Tolene Pitts (EKU PIMSER), Jamie-Marie Miller (EKU PIMSER)

Room: Salon AB

Description: Participants will learn a few of the misconceptions students hold about the equal sign and how it impacts later mathematical learning in algebraic reasoning. During this session, participants will experience formative probes for

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equality and learn about the research that supports a disconnect in students' understanding of the equal sign. Participants will leave with a better understanding of how to reinforce the meaning and importance of the equal sign with strategies and activities for immediate classroom implementation.

**Engaging Students Using Music in Math Instruction (Pre-K, K-2, 3-5)**

Presented By: Scott Hiner (Russell Cave Elementary)

Room: Salon C

Description: A practical, multi-sensory presentation of classroom activities presented by an AVMR-trained music specialist. Learn classroom-tested activities to practice forward/backward number sequence and skip counting, introduce natural fractions concepts using rhythms, and songs and chants to engage primary students in structuring 5 and 10. Leave with materials like my Pizza Rhythms game!

**Procedural Fluency (K-2, 3-5)**

Presented By: Jenny Bay Williams (University of Louisville) Room: Salon D

Description: TBD

**Seriously Fun Mathematics with Dice (3-5, 6-8)**

Presented By: Kim P. Loucks (Teaching and Learning Connected)

Room: Salon E

Description: Of ALL the manipulatives available to use in Mathematics classroom, a simple pair of game cubes (or dice as they are more commonly known), can be one of the best tools to open the world of learning to your students. Join us as we explore a number of different concepts (operations, probability, and more!) by engaging attendees in a variety of seriously fun activities. Come roll with us!

 **Making Add+VantageMR Data Work for You (K-2, 3-5)**

Presented By: Petey MacCarty (US Math Recovery Council)

Room: Salon F

Description: We all feel the passion and need for Add+VantageMR data to inform our instruction, when we complete the course. Unfortunately, it can be difficult to find the time in our busy schedules to gather and use the data. In this session we will examine a variety of ways to develop routine practices of gathering, analyzing and applying Add+VantageMR data to inform and ignite our day-to-day teaching.

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**Math Conversations Matter! (6-8)**

Presented By: Johnathan Rogers (Henry County Middle School), Emily Edwards (Henry County Public Schools)

Room: Salon HG

Description: Regardless of subject area, middle school students love to talk in class. However, the conversations that teachers hear are not always productive and/or on topic. Math Conversations Matter looks at how educators can use conceptual building blocks and the workshop model to ensure middle school math students can have those needed mathematical conversations to enhance their learning. This presentation will be an interactive discussion that shows how "talking in class" can be a powerful tool in helping your students understand mathematics while collaborating with peers. The focus of this presentation is to give middle school math educators some strategies on how to plan lessons with an instructional coach and ignite purposeful, mathematical conversations among students within their classroom.

**Everything Is Awesome! Especially Math! (K-2, 3-5)**

Presented By: Kristie Manley (Kenwood Elementary)

Room: Darby Dan/Calumet

Description: Need a way to make math awesome for your students? Come play and learn how to ignite the passion with activities that make math possible, relevant and awesome. Students can become master builders of their own learning, and that is what makes math awesome!

**Modeling Important Social Issues with Data: Opioid Overdose Deaths in the United States (6-8, 9-12, Postsecondary)**

Presented By: Tom Reardon (Fitch High School / Youngstown State University)

Room: Dixiana

Description: Have your students mathematically model this shocking real data from 2000 on. Make your students aware of these social problems and their consequences, and have them use the math that they are learning to analyze and interpret this real-world data. We will use graphing calculators that have the data preloaded and analyze how to create a function or piece-wise functions (linear and/or quadratic) to model the data for interpolation and extrapolation purposes. We will also discuss how to calculate and interpret per cent change. Works with TI-84, TI-Nspire, and other graphing technologies. Grade 8 through college. We will also show how this activity was created. Obtain all materials: data, student worksheets, teacher notes and solutions, blog.

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MONDAY

**Geoweaving: Igniting Passion for Geometry Through String Art (6-8, 9-12)**

Presented By: Rachel Bishop-Ross (Eastern Kentucky University)

Room: Lane's End

Description: Understanding the terminology and concepts in geometry can be challenging for some students. Even students who feel they have a good grasp on the terminology may still have misconceptions about the subtleties of some definitions. In this presentation, we will share a fun, tactile, visual way for students to use their creativity to discover and cement the concepts related to lines, angles, and polygons. Using Geoboards, we will make string art representations of geometric concepts and engage in activities where we 'find the object' with purpose.

 **Fear Not the Fraction: Igniting understanding with fractions models (3-5)**

Presented By: Craig Willmore (ORIGO Education)

Room: Bluegrass Pavilion

Description: Elementary students need experiences with multiple models of fractions in order to gain a deep understanding of the concept and proficiency with skills such as finding equivalence. This session will explore the benefits of each model to help you transform your teaching of fractions.

**SESSION #5- 2:30 pm – 3:30 pm**

**Math Intervention and the ELL Student (3-5, 6-8)**

Presented By: Sonya Swartz (Bryan Station Middle School in Fayette County)

Room: Salon AB

Description: Is math a universal language? Yes, no, maybe? When dealing with students who are learning English many of the challenges in mathematics are the same as they are for any other student but what do you do to fill in the language gaps? This session will demonstrate and have you practice some practical strategies for all students that will ignite both the students passion to learn and your passion to teach! Let's get fired up about math!!!

**Ignite Success for Math by Eliminating Equality Misconceptions in the Middle School (6-8)**

Presented By: Jamie-Marie Miller (EKU PIMSER), Tolene Pitts (EKU PIMSER)

Room: Salon C

Description: Quite often middle school teachers question why their students have difficulty in learning algebra. The often-overlooked reasoning is middle school students still do not comprehend the meaning of the equal sign. This session will

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help middle school teachers understand the following about the equal sign: its importance, the disconnect in students' understanding and how to reinforce it in the classroom. Participants will leave this session with strategies and activities for immediate classroom implementation on equality and algebraic reasoning.

**Proposed Revisions to the Kentucky Academic Standards and Assessment System for Mathematics (General/All Grade Levels)**

Presented By: Renee' Yates (Kentucky Department of Education), Teresa Emmert (Kentucky Department of Education), Krista Hall (Kentucky Department of Education)

Room: Salon D

Description: This session will focus on the proposed revisions to the Kentucky Academic Standards and assessment system for mathematics. We will share proposed specific standard revisions by grade level and sample assessment items.

**Making Math Teaching Matter (K-2, 3-5)**

Presented By: Amanda Davis (Sorgho Elementary/ Daviess County Public Schools)

Room: Salon E

Description: Ensuring grade level appropriateness is paramount in our math instruction. Trying to close the achievement gap of students who lack prerequisite skills and math fluency is often a topic around our PLC tables. In this session, come and hear about active struggles and adjustments that can be made in the classroom to best meet students' math needs. This session will focus on the "how-to" make your math teaching matter. Target audience is K-5 teachers, coaches, and/or specialists.

**Making Math Fun (3-5)**

Presented By: Sarah Burnett (Shopville Elementary)

Room: Salon F

Description: This workshop will explore cooperative activities and games that allow for high engagement, energy, and rigor in an intermediate math classroom. Learning increases when kids are having fun, at the conclusion of this workshop participants will be able to take fun back to their classroom. Each participant will receive a copy of each game, a list of content based websites, and numerous ideas that will work in any math classroom.

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MONDAY

Igniting Mathematical Thinking & Reasoning (**3-5, 6-8, 9-12, Postsecondary, General/All Grade Levels**)

Presented By: Catherine Lane (Baldwin Wallace University), Shelly Harkness (University of Cincinnati)

Room: Salon HG

Description: For students to authentically engage in mathematical thinking and reasoning, they need to be provided with more than just exercises in which they are asked to crunch the numbers. In this session, we will share how we have used various games in our classrooms to spark curiosity in our students, and to promote mathematical discourse. As students investigate, conjecture, and try to defend their strategies to win games such as 'Blokus' or 'Goblet Gobblers' they are likely to also have mounds of fun. We will share a brief synopsis of different games we have used with our own students in addition with teachers as part of a professional development program. Session attendees will have the chance to engage in one of the games we have used and to participate in reasoning their way to a winning strategy. We will conclude the session by sharing examples of student work and the evidence we have that our students are engaged in mathematical reasoning.

**MAPping Out Skills Groups (K-2, 3-5)**

Presented By: Amy Kellem (Bardstown Primary)

Room: Darby Dan/Calumet

Description: Does your school assess students using NWEA MAP? Do you need help translating the Learning Continuum for your students? Join me as I walk you through the process I used to make the Learning Continuum more skills-friendly for your flexible groups. Bring your computer and begin MAPping out your student progress plan! Participants will benefit from having access to the following: a computer, class NWEA account, and a Google account.

**Appealing Problems Placing Fractions in Perspective (9-12, Postsecondary)**

Presented By: Jay L. Schiffman (Rowan University)

Room: Dixiana

Description: Fractions are often studied by students to pass an exam requirement with little passion. In this hands-on workshop, participants will view fractions through the lens of rich problems incorporating history, algebra, geometry, number theory and technology while exploring connections. We will discuss the relationship between the sums of unit fractions with consecutive even (odd) denominators and Pythagoras, the role of Fibonacci in expressing a fraction as the sum of unit fractions and explore and test a conjecture due to Erdos and Straus in the middle of the twentieth century. This conjecture asserts that  $\frac{4}{N}$  can be written

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as the sum of three unit fractions for  $N > 1$ . In addition, we examine the sum of the reciprocals of all the perfect numbers. (A perfect number is any number which is equal to the sum of all its divisors including one but not itself). Finally, we will explore the infinite sum of the reciprocals of the unit fractions known as the harmonic series as well as the harmonic series of primes, which are essential in both calculus and number theory. Please join us to view rich problems that take fractions an additional step. The Mathworld website will be utilized to further immerse the participants in these problems.

**Mathematical Modeling: Content + Mathematical Practices + Context (9-12)**

Presented By: Rita Messer (Collaborative for Teaching and Learning), Jo Ann Mosier (Collaborative for Teaching and Learning)

Room: Lane's End

Description: Mathematical modeling is a process that ignites students' mathematical interest and allows them to apply the mathematics they are learning to answer questions about the world around them. The new Algebra II End of Course assessment's emphasis on mathematical modeling necessitates instructional shifts that create a classroom environment in support of that modeling process. This session will focus on these shifts and how a PLC or vertical team can collaborate, providing these opportunities to students prior to Algebra II. Participants will experience a modeling task and discuss instructional planning that connects content to the mathematical practices making such tasks successful.

 **Begin the Burn: Guiding Our Youngest Learners on the Path to Mathematical Success (Pre-K)**

Presented By: Melinda Schwartz, Ed.D. (ORIGO Education)

Room: Bluegrass Pavilion

Description: Research indicates that math proficiency at a young age is important to future success. Young children's symbolic misconceptions can block students' math proficiency. Participants will explore and engage in utilizing a research-based pathway and developmentally appropriate techniques that negate misconceptions and lead to early numeracy success.