

Thursday 8:00 – 9:00 a.m.

100 Bauer - Beaty (50) **Grades 6 to 8**

Intervention: The Ins, the Outs and in Between

This session will provide the 30,000 foot view as well as the nitty gritty details of a successful, systematic intervention program. Included will be information regarding entrance and exit criteria, time lengths, decision making teams, school meetings, training, organizational systems, and programs in tier 2 and tier 3. In addition, “tier 1.5” will be shared, which involves a systematic approach for students who have exited intervention or who don’t qualify for tier 2, but may need additional support.

Pamela Quirk, Lake Denoon Middle School
Todd Sobczyk

101 Bauer - Boddie (32) **Grades 3 to 5**

Easy Math Workshop Model for Everyday Math

I will show you how to reach all the ability levels in your classroom through an easy to use workshop model. My materials will be from a 5th grade classroom, but can easily be adapted to fit any grade level.

Shannon Korth, Mukwonago School District

102 Bauer - Ladue (30) **Grades PK to 2, 3 to 5**

Using iPads with Osmo

Osmo is an innovative product that combines physical manipulatives with a digital experience that provides engaging activities & additional practice and fluency building in a game-like environment. Experience integrating technology tools with activities correlated to CCSS.

Mora Arnold, Houghton Mifflin Harcourt

103 Bauer - Lightbody (32) **Grades 6 to 8, 9 to 12**

Confessions of a First Year CS Teacher

In this session I will describe my transformation as a math teacher to a computer science teacher, my struggles, my woes, my joys, and my successes. I will describe how the subjects are similar, how they are different and most importantly how my background in math makes me a great computer science teacher.

Eric Meyer, Cuba City High School

104 Bauer - Morehouse A (50) **Grades PK to 2**

Going Beyond Fast Facts: A Balanced Approach to Assessing Mathematical Fluency in Grade K-2

Participants will investigate the limitations of timed tests, and explore formative assessments that can give teachers in grades K-2 useful information about the key aspects of mathematical fluency: efficiency, accuracy, and flexibility.

Danielle Palm, Oak Creek
Kristine Gettelman

105 Bauer - Morehouse B (100) **General Interest**

Becoming a Connected Educator with the #MTBoS

Connected mathematics educators have banded together to form an amazing online community known as the #MTBoS - the Math Twitter Blogosphere. Find out more about this community and how to join them to harness the power of social media and take charge of your professional learning.

Jennifer Lawler, Kenosha Unified School District

KEYNOTE

106 Bauer - Morehouse C (100)

Grades 6 to 12

Your Students' Math Environment – Is it more than facts, rules & procedures?

Let us examine the world of mathematics we create for our students. Do we use math to understand and critique the world around us – real and imagined? Do we provide experiences of wonder, joy and beauty within that world of math? Do we anticipate and address the age old question: “When will I ever use this?” It is our responsibility to help our students create a rich world of mathematics in their head.

Hank Kepner, UW-Milwaukee, NCTM Past President

107 Kern - Boehr (50)

Grades 9 to 12

Early Math Placement Tool (EMPT): Preparing Students for College Level Math

The EMPT is a free program that assists students in planning and preparing for the expectations of college-level math.

Mark Schroeder, Center for Placement Testing
Sonya Sedivy

108 Kern - Brayton Case A (60)

Grades 6 to 8, 9 to 12

Math Week: Celebrating a Week of Problem Solving

What if you could create a homecoming atmosphere for Mathematics in your school? You can. Go on a journey of one Math department's initiative to generate the schools most exciting week of the year, and it revolves around Math.

Jacob Husing, Northland Pines School District
Steve Miller and Amanda Fowler

109 Kern - Brayton Case B (60)

Grades 3 to 5, 6 to 8

“SHAKING” up STEM with Earthquake Technologies

In this interactive hands-on STEM session, you'll become a structural engineer designing an earthquake safe building for the Build Safe Construction Company in this problem-based, real world engineering challenge. You'll get to “play” with K-Nex to model different types of earthquake resistant technologies, all while following the engineering design process of: define the problem, plan a solution, build a model, test the prototype and redesign your building.

Lindsey Petlak, ETA/Hand2Mind
Barbara Jo Evans

110 Kern - Brown (32)

Grades PK to 5

Number Talks Progression

Our group will share examples of how we integrate Number Talks into our weekly math routine in grades 2-5. We will engage the audience in the practice of conducting a Number Talk, and discuss what we look for with our students. Anecdotal evidence will be provided on how Number Talks have affected our students' mental math skills and procedural fluency.

Christy Rousch, Black River Falls Red Creek Elementary School
Jennifer Bolger, Jessica Partlow, Melissa Sharpf, Janelle Tande, and Erick Hofacker

111 Kern - Cary (32)

Grades PK to 5

Exploring Mathematical Concepts with Children's Literature

How to use trade books to support WI State Standards, grades K -5. Explore how math related children's literature can help children make real-world connections. Learn how to use trade books to motivate reluctant math students in an integrated environment.

Jamie Kleiner, New Richmond School District
Vicki Gjovik

112 Kern - Hanson (50)
Grades General Interest

The Beauty and Joy of Computing: The Power of Functions as Data

Functions are taught in 2nd grade mathematics as "function machines", and are certainly at the heart of algebra, and higher-level mathematics. Almost all computer languages allow the ability to author functions. but not all allow the ability to have functions be first class citizens, which means (among other things) that they can be the input and output of other functions. One of the major, and recently resurgent programming paradigms is functional programming, which exploits this idea of "functions as data" to do remarkable things, including easily directing millions of distributed computers to do a task through the MapReduce paradigm. In this talk, we will explain and demonstrate how we are bringing this powerful idea to high school and non-major college students through our Beauty and Joy of Computing course, and the graphical programming language, Snap!.

Daniel Garcia, UC Berkeley

113 Kern - Johnson (50)
Grades 9 to 12

Answering the question 'When am I ever going to use this in the Real World?'

Educators have been trying to answer the question students have asked numerous times on why they need to learn math. In northeast Wisconsin, a group of math teachers and manufacturers worked together to answer that question. The answer to the question is "Get Real Math!" a video series that showcases over 70 Common Core skills and how they are used in the workplace. The math skills featured are from 4th grade to high school skills. Math educators wrote the lesson plans that are part of the video series. The videos and lesson plans are available at no cost. The presentation will include the history of the program, overview of skills showcased in the videos, and how to use the videos to assist with Academic & Career Planning in your school.

Ann Franz, NEW Manufacturing Alliance

Andy Bushmaker

114 Kern - Stansbury (32)
Grades 9 to 12

The Next Step - Everything You Wanted to Know about AP Computer Science A

Teachers will get a quick overview of the AP Computer Science curriculum. From variable declarations all the way to 2D arrays, teachers will come away with the material that needs to be covered so their students are successful on this exam. Teachers will come away with multiple assignments to use during the year as well as a peak into what it is like to be an AP grader.

Bob Getka, Janesville Parker
Janice Bain

115 Lawson - MLK (24)
Grades 9 to 12

Assessing Mathematical Knowledge: A Success Story of the Switch to Standards Based Grading

Seeking math teachers who currently use standards based grading or those who are thinking of making the switch! St. Anthony High School in Milwaukee made the switch to standards based grading in high school math classes. In this session we will share how we approach assessing student understanding and grading. We will share the standards we assess, the grading scale, the process of implementation and some interesting results. Participants will experience how we assess and assign grades of student mathematical knowledge through an interactive activity. There will also be time to discuss your questions and suggestions on how we can improve our process.

Stephanie Bernander, UW Oshkosh
Phillip Schmidt Paige Hermann

KEYNOTE

116 Pillsbury - Staughton (300) **Grades General Interest**

Empowerment through Access and Equity

We have a long-standing and seemingly intractable problem in mathematics education: inequity. Children of certain racial, ethnic, language, gender, ability, and socio-economic backgrounds experience mathematics education in school differently and many are disaffected by their mathematics education experience. This session will address why we teach mathematics and the actions educators can take to challenge structural obstacles and implement equity-based instructional practices. *Matt Larson's appearance is sponsored by Houghton Mifflin Harcourt.*

Matt Larson, NCTM President

117 RWI - Crystal (64) **Grades PK to 2, 3 to 5**

Numeracy Routines K-5

In this session participants will learn a variety of numeracy routines that span the range of elementary grade levels.

Terri Froiland, Waukesha

118 RWI - Mahaney (40) **Grades PK to 2, 3 to 5, 6 to 8**

Using Clothesline Math Activities to Help Build Number Sense and Increase Student Engagement

Clothesline math activities are a new type of routine which help develop number sense ranging from whole numbers, to fractions, square roots, and beyond! This routine can easily be incorporated into any classroom using multiple math concepts. Clothesline math activities are perfect for class warm ups, math centers, intervention groups, and whole group mini lessons. Participants will engage in several clothesline math activities while also incorporating ways to deepen math discourse and student engagement. Join our session for a chance to win a clothesline of your very own! :)

Jennifer Metke, Slinger School District

Eric Kanter

119 RWI - McGarvey (24) **Grades 6 to 8**

Tough, Rigorous Middle School Math Problems

Tired of the same old "tough" problem solving tasks that fall at the end of each of your text book's lessons? I will share with you one of my favorite tough math problems, how to build excitement to solve it, facilitate strategy sharing, teach kids to question each other, and gradually release all those responsibilities to the students. As an added bonus, you will leave with a group of tough, rigorous math problems to take back to your own middle school math classrooms.

Cara Flach, Oak Creek Franklin Joint School District

120 YC - Cummings (96) **Grades 6 to 8, 9 to 12**

In-"formative" Strategies to Guide Instruction & Learning

Participants will be introduced to multiple formative assessment strategies that are used in our classrooms to promote active engagement, collaborative learning, individual accountability. These activities allow students to learn from their mistakes and guide teachers as to how to tailor their instruction by looking at the typical errors noticed throughout each activity. Participants will leave with several tools that can be immediately implemented in the classroom!

Cassandra Schneider, Ashwaubenon School District
Lisa Stomberg

121 YC - Dominguez/Cox (24) **Grades 9 to 12**

Centroid...2:1 Ratio...What's This All About

It seems that whenever a geometry student finds a centroid, it seems to divide some segment in the ratio of 2:1. This hands-on workshop will investigate three such instances, look at some proofs that are usually not found in standard Geometry courses, and hopefully discover some theorems that you might not have seen before. We will use the TI Nspire CX calculator to explore these relationships.

Ray Klein, T3 Teachers Teaching with Technology
122 YC - Fordham/Ballenger (24)
Grades 6 to 8, 9 to 12, College, General Interest

Presumed Guilty

Healthy people are told they are sick. Innocent suspects are judged guilty. Taking advantage of scientific and technological advances, the fields of law and medicine increasingly attempt to establish truth through laboratory testing. Unfortunately the “truth” they uncover is very often wrong. Using only very elementary ideas about probability, we will analyze the misconceptions that lead to these false conclusions.

John Beam, University of Wisconsin Oshkosh

Thursday 8:00 60 minutes
123 YC - Huber/Evans (96)
Grades 6 to 8, 9 to 12

Study Team Strategies to Get Students Talking in your Algebra Classroom

This session will model some study team strategies to promote meaningful mathematical discourse in your classroom. Participants will leave with ideas to integrate into their own classroom.

Holly Walls, West Bend School District

Mary Damkot

124 YC - NG/Jones (24)
Grades 6 to 8

Meeting Environmental Challenges with Math

In this STEM-focused workshop, discover hands-on activities that use real-world data to create mathematical models as a way to understand trends in land use, population growth, climate change and more. Build students' environmental I.Q. while developing skills in measurement, data analysis, modeling and problem solving. The presented activities build students' understanding and skills in algebraic patterns and functions, decimals, fractions and ratios, linear measurement, as well as number operations and problem solving. Receive electronic lesson plans matched to state standards.

Steve Krings, Retired, Green Bay Area Public School District

Thursday 9:30 – 10:30 a.m.

125 Bauer - Morehouse B (100) **Grades 9 to 12**

Math Pillars - A Multi-faceted Approach to Creating a Mathematician

Solving a math problem is a dynamic process where students use many skills. When solving a problem students may use their skills of mental math, routines, problem solving, perseverance, and connections between topics. If a student is lacking one of the pillars necessary to solve a problem, they will inevitably fail. This session will look at how we can develop the different facets of becoming a mathematician.

Derek Pertzborn, Lodi School District

126 Bauer - Morehouse C (100) **Grades 9 to 12, College**

Supporting Developmental Students with Number Talks and Concept Mapping

Developmental mathematics students typically struggle with many aspects of basic mathematics. Changing the way the material is presented to the students helps students gain the willingness to try new things and helps students with the conceptual understanding of the connections between topics that ensure their success. This presentation will explore adding number talks and concept mapping into a developmental classroom in order to help students. By using the number talks students start to realize that there are many different ways to approach problems. It also helps develop a space for students to learn to talk mathematics. The use of concept mapping helps students see the connections between topics and thus gain a conceptual understanding of basic mathematics.

Leah Rineck, UW-Milwaukee

127 Kern - Johnson (50) **Grades 9 to 12, College**

High Expectations, High Achievement: The Proficiency Model for Mathematics Courses at UW-Parkside

In January 2012, after years of sporadic reform efforts which did little to alter relatively flat success rates of approximately 50% in developmental and first-credit-bearing mathematics courses, the Associate Provost at the University of Wisconsin-Parkside met with a team of mathematics instructors and issued a simple directive: fix this. The team formulated a proficiency-based model for all developmental mathematics courses and fully implemented it in the Fall 2012 semester. Based upon the fundamental belief that students with appropriate support would rise to meet the challenge of high standards in terms of both content and achievement, this proficiency format had an immediate positive impact and led to a sequence of additional campus mathematics initiatives that continue to this day. This talk will highlight the main components of the proficiency model, its spread to first-credit-bearing courses, its influence upon additional curricular refinements, and its effect upon student success rates in its first five years.

Richard Karwatka, University of Wisconsin-Parkside

128 Kern - Stansbury (32) **Grades 9 to 12**

Using Code to Teach CS A

Explore a computer program written specifically to help teach or reinforce concepts taught in AP Computer Science A.

Janice Bain, Craig HS
Bob Getka

129 Kraft - Mitchell Dining (50)
Grades 3 to 12, General Interest

A Fresh Look at Rubrics: Single Points and Self Assessment

Math is changing. Assessments are changing. The way we score assessments should change also. I propose using a modified single point rubric that delineates the skills a student should be demonstrating. I lead my students through the rubric before an assessment and teach them how to use the rubric to self assess their work. We will look at how to develop the rubric for a task. What is an appropriate answer? What was required to get the answer? Could the answer have been found in multiple ways? Additionally, I will share some student work with rubric for practice with assessing.

Molly Rozga, School District of South Milwaukee
Andy Flater

130 Lawson - MLK (24)
Grades 6 to 8, 9 to 12

CPM (College Preparatory Mathematics) Networking Session

Any teachers who have been using the CPM program or teachers who are interested in learning more about CPM should join this networking session. Come see how the program is being implemented in different districts and schools and get ideas for a variety of topics including differentiation, intervention, assessment, student and teacher collaboration, course sequencing, professional development opportunities....

Bruce Brusoe, CPM Educational Program

131 RWI - Mahaney (40)
Grades 3 to 5

From Multiplication to Multiplicative Comparison: Making Sense of the Story Structure

Developing understanding of multiplicative comparison situations can be challenging for fourth grade students. Come and learn how the structure of multiplication can support students to make sense of the various problem formats. Leave with an understanding of how these problems lay a critical foundation to Ratio and Proportional Reasoning.

Julie McNicoll, School District of South Milwaukee
Beth Schefelker

Thursday 9:30- 11:00 a.m.

132 Bauer - Beaty (50)
Grades PK to 12

Using Formative Assessment to Leverage Learning

Formative assessment is not a new strategy. In fact, John Hattie states that Formative Assessment has a .90 effect size. But are we using the right type of formative assessment to leverage learning? This session will provide attendees with strategies and a process to go from standards to assessment creation to data analysis.

Kurt Krizan, Little Chute Area School District

133 Bauer - Boddie (32)
Grades 9 to 12

Collaboration Among Colleagues

We will explore different strategies for facilitating collaboration among colleagues in both department and course specific teams. From PLCs to assessment planning and student work analysis, this session is geared to math teachers, special educators and principals.

Matthew Richard, Sun Prairie High School
Lisa Hennessey

134 Bauer - Ladue (30)
Grades 6 to 12, General Interest

Physical Computing with the Circuit Playground

This session will provide a hands-on learning experience with Adafruit's new Circuit Playground. These palm-sized, programmable microcontrollers offer an easy and fun on-ramp for learning basic hardware programming. Because the sensors and LEDs are already embedded on the board, students can focus on learning event-driven programming using the standard Arduino IDE or code.org's App Lab coding environment. Participants will leave with an understanding of how physical computing connects with a middle school CS curriculum. No previous knowledge is required, but please bring your own device.

John Quinn, Wausau West High School

135 Bauer - Lightbody (32)
Grades 3 to 12, General Interest

WE STEAM

At Juda school everyone "STEAMS." Learn about the collaboration, curriculum changes, and activities Juda School is using.

Jackie Klar, Juda School District
Jodean Grunow and Barbara Jo Evans

136 Bauer - Morehouse A (50)
Grades PK to 2

Using Culturally Relevant Teaching to Improve Students' Mathematical Identities and Achievement

Access and equity in mathematics are very real issues for all students in particular students of color. Culturally Relevant Teaching (CRT) can help all students develop strong mathematical identities and gain deeper understanding of mathematical concepts. Join us to learn how CRT strategies were used to develop mathematics lessons for elementary students and how the strategies impacted student learning, as well as how students viewed themselves as emerging mathematicians.

Danielle Robinson, Milwaukee Public Schools
Melissa Hedges

137 Kern - Boehr (50)
Grades PK to 8, General Interest

Learners Choice and Voice through Learning Continuums and Conferring!

The key to engagement is learner ownership of their learning. Hear how one rural public district works with students at their academic readiness while utilizing student's voice and choice. After this session, you will be confident to facilitate, lead, or coach learners and teachers on incorporating learners' voice and choice through learning continuums and learner led conferring.

Lisa Krohn, Kern - Johnson (50) Creek School District
Stephanie Roe, Megan Rojemann, and Lisa Krohn

KEYNOTE

138 Kern - Brayton Case A (60)
Grades 3 to 5

Life Doesn't Come with Key Words (Multiplication and Division)

Multiplication is more than "times" and division is more than "guzzinta"! This session will focus on how can we support students in solving word problems through developing operation sense. This session will focus on recognizing multiplication and division situations and using appropriate models to help students make sense of word problems. An instructional framework that engages students in this process will also be shared.

Linda Gojak, NCTM Past President

139 Kern - Brayton Case B (60)
General Interest

The New Professionalism: Empowering Teachers as Researchers, Accomplices, and Agitators

Teaching is a profession under siege. Some legislators and policymakers are devaluing and defunding teacher professional development and collaboration. This session shares sensible ways in which teachers can reclaim the profession through action research collaborations and advocacy. Using data from the Milwaukee Master Teacher Partnership and the book *A Quiet Revolution: One District's Story of Radical Curricular Change*, we consider how mathematics teachers can support meaningful discussions about mathematics teaching and learning both within and outside of their school. I discuss ways to collect more meaningful student assessment data, how to develop a shared vision of mathematics teaching and learning in your school, and how to advocate with parents and community leaders.

Mike Steele, University of Wisconsin Milwaukee

140 Kern - Brown (32)
Grades 6 to 12

Tools to Enrich Learning and Assessment

We will demonstrate how we use various open resources and how we create our own rich tasks customized to the needs and interests of our students. We will also showcase strategies we have used from "Formative 5" and different forms of technology that can be used to aid understanding of what your students understand.

Dean Rousch, Luck Middle and High School
Christy Rousch, Diane Nelson, Hali Tasler, Chelsea Richmond, and Erick Hofacker

141 Kern - Cary (32)
Grades 6 to 8

Mathematical Practices in Team-Teaching

We will discuss our experiences team-teaching in an inclusive classroom for students with special needs in grades 7 and 8. We will describe how we have mindfully integrated the Standards for Mathematical Practice to meet the needs of all our students.

Tammy Briggs, Elk Mound Middle School
Becky Cater and Ashlee LeGear

142 Kern - Hanson (50)
Grades PK to 12

Personalized Learning: How to Personalize Your Math Class so Every Student Learns at Their Pace!!!!

Have you ever given a test knowing some students were going to fail? Have you ever had students fail a test and continued on with your next unit? In this session, you will learn how we turned our classroom, and others in our school, into a personalized system for every student, to move along at their own pace and to not move on until they have mastered what is being taught. Our Personalized Learning system we will present is not the only way to do this, but you will get tremendous information, invaluable suggestions and an overall structure of how to set up a classroom to guarantee that all students are reaching their full potential and no students get left behind by following a pacing guide in your curriculum. Teaching the same thing, the same way, to 20 students who all learn and think individually is a thing of the past, come and learn the future.

Tim Smyth, Luck School District
Paula Anderson

143 Kraft - Tower Dining (50)

Grades 6 to 12

Escape Room

Participants will work as a team to find, relate, and interpret mathematical clues to break the code and “escape” from the room. The clues will incorporate concepts from middle school and high school mathematics with an emphasis on the Standards for Mathematical Practice.

Ashlee LeGear, University of Wisconsin - River Falls

KEYNOTE

144 Pillsbury - Staughton (300)

Grades 9 to 16

The High School Math Program, Past Time for a Do-over

The National Council of Teachers of Mathematics has developed a do-over of the high school mathematics program. This is not a set of minor changes as proposed in the 1989 NCTM Standards, which were considered revolutionary at the time. This do-over is a work in progress and has many implications for all stakeholders. Discussion and evidence of changes will highlight this session.

Johnny Lott, NCTM Past President

145 RWI - Crystal (64)

Grades PK to 2

Early Learning: Cultivating Effective Student Discourse to Enhance Mathematical Understandings

In order to negate misconceptions in our children’s understanding of mathematics, language is a crucial building block. By allowing the children to naturally progress through the developmental understanding of mathematics using language, you will see your children become confident and successful individuals. This interactive and hands-on session will give the participants detailed steps and the confidence necessary to walk into their building tomorrow and begin cultivating the language of mathematics.

Jessica Bobo, ORIGO Education, Inc.

146 RWI - McGarvey (24)

Grades 9 to 12

Making Music with Math

Come and experience an exciting, fun and classroom-ready precalculus activity in modeling with trigonometric functions. Participants will use Vernier Software & Technology™ microphones and the Vernier DataQuest™ application for TI-Nspire™ CX technology to create musical notes that will culminate in a group concert.

Molly Rockstroh, Unified School District of DePere

147 YC - Cummings (96)

Grades 6 to 8, 9 to 12

Modeling, Accuracy, Thinking, Hierarchy: A Look into Grading Practices

This session will introduce you to a new way of thinking about organizing and categorizing your curriculum. This new look has been designed around the Eight Mathematical Principles of the Common Core. We will be exploring a new way to split up your learning objectives into four major standards. These standards can then be used not only to compartmentalize your current curriculum, but to also measure growth not only in the current class, but from class to class. We will be discussing ways for you to create your own personalized objectives within each of these global standards. We will then discuss how you create meaningful assessments. Finally, I will share with you how to take all of this data and turn it into a grade that truly measures the level your students are performing at. Come ready to stretch your thinking and be prepared to have some discussions with fellow colleagues.

Jeff Harding, Mundelein High School

148 YC - Dominguez/Cox (24)

Grades 9 to 12

Using Sampling Distributions in the Classroom

Need an activity to illustrate sampling distributions? Learn about activities you can use in your classroom for sampling distributions for proportions and means. Applicable for AP and/or non-AP stats teachers.

Jason Dahl, Oconomowoc
Allison Hopkins, Bill Fehrenbach, Todd Brahm, and Steve Sollom

149 YC - Fordham/Ballenger (24)

Grades 6 to 8, 9 to 12

Analyzing Non-Linear Relationships When Filling Three-Dimensional Letters

In this session, we will explore lessons and a performance task in which students explore linear and non-linear relationships when filling various three-dimensional letters with water. Participants will have the opportunity to explore the tasks, examine examples of student work, and discuss the understandings that the tasks develop and modifications that can be made to the task to make it accessible to various grade levels. We will also discuss the steps we take to create effective performance tasks as well as how we use rubrics to assess student understanding and provide appropriate feedback.

Matthew Chedister, University Wisconsin La Crosse
Rick Stuart

150 YC - Huber/Evans (96)

Grades 6 to 8, 9 to 12

Building a Box to Revisit Geometry

Participants will transform greeting cards into boxes useful for small item storage, and more importantly for delivering a better understanding of the relationships among perimeter, area and volume. A major goal is to give students a better understanding of geometry terms and the nuances of definitions involved with polygons with a special emphasis on families of quadrilaterals. Ratio and proportion are discussed as they relate to sizing the boxes.

Nicholas Restivo, MOEMS

151 YC - NG/Jones (24)

Grades 9 to 12, College, General Interest

Project Ideas with Mathematica

This presentation cover ideas of applications of Algebra, Geometry, and calculus in real life situations. Emphasis on connecting all the three subjects together in one single display as well as creating varieties of outputs for many assignments.

Abraham Gadalla, Breck School

Thursday 11:30 a.m. – 12:30 p.m.

152 Bauer - Beaty (50)
Grades 6 to 8

Why? Exploring the Reasons Behind 7th Grade Math Topics and Rewriting Assessments to Include Them

Is it a rule or a reason? The question of "why" should be asked and contemplated every day. In this session, we look at a few of the 7th grade standards, how to infuse the "why" and how to rethink our assessments to empower students to have greater understanding of the mathematical reasoning process.

Christine Lucas, University of Wisconsin Milwaukee, and Greenfield School District
Aaron Buran and Bailey Schmitt

153 Bauer - Boddie (32)
Grades PK to 2

Math Discourse in the Primary Classroom

Teachers will explore a variety of types of discourse and brainstorm ways to improve questioning in the math classroom.

Jillian Miller, Waukesha

154 Bauer - Ladue (30)
Grades 9 to 12

How to Engage Your Reluctant Learners: The Power of Using Desmos in a Mathematics Classroom!

Dive into unique mathematical lessons that present engaging, high-interest activities powered by desmos, a graphing software. Unlike traditional examples, interactives powered by desmos present students with exploration experiences through technology that builds deep conceptual understanding. Imagine having set lessons you can implement in your classroom tomorrow that encourage students to understand math on a deeper level!

Bryan Wilson, Pearson

155 Bauer - Lightbody (32)
Grades 9 to 12, College

Game Programming in Java

Moderate and advanced Java programming which involve designing games using a basic game engine. The session will focus on two discrete points in learning - class design and post-AP exam and/or college level content. Bonus topic will include Turtle programming in Java.

Aaron Chamberlain, New Berlin

156 Bauer - Morehouse A (50)
Grades PK to 8

Access & Equity in Math:

Dos and Don'ts of Supporting All Learners

In this interactive session, an approach and recommendations for targeted math support and intervention will be shared. Participants will explore an example of how to address students' unfinished learning to provide access to grade level content and discuss solutions to common challenges schools and teachers face when supporting students with gaps. Be ready to roll up your sleeves for this exciting and productive session that will prepare you to support all students within your role.

Astrid Fossum, Student Achievement Partners

157 Bauer - Morehouse B (100)
Grades 9 to 12

AVID Interactive Notebooks & Mathematics

Learn about a powerful organization tool to use in your classroom. The interactive notebook will streamline your classroom, get your students doing more mathematics and provide a common organization for all student work. We will learn about the notebook, do some math and create actual notebook pages.

Kent Wedemeyer, Sun Prairie Area School District

KEYNOTE

158 Bauer - Morehouse C (100)

Grades General Interest

Why Math Teachers are the Silver Bullet for "CS for All"

Ruthe Farmer, CSforAll Consortium

159 Kern - Boehr (50)

Grades General Interest

Designing High Quality Professional Development for Your Colleagues

If you are a math coach/leader, it may be your responsibility to design and facilitate professional development for your colleagues. Time is valuable - make it count! Walk away with ideas to create professional development that builds on teacher's expertise.

Paige Richards, Mathematics Institute of Wisconsin

160 Kern - Brayton Case A (60)

Grades PK to 5

Making Guided Math Work for You and Your Students (Grades K - 5)

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

Lindsey Petlak, ETA/hand2mind

161 Kern - Brayton Case B (60)

Grades 9 to 12

5 for 5 in Co-Teaching

Meet the A team. Five math co-teachers from Brookfield East High School will share 5 instructional strategies for the co-taught math classroom. Come see how we meet the needs of all learners in our full inclusion math classrooms of Algebra, Geometry and Algebra II. You will leave this session with resources and guidance on how to effectively utilize your planning time and equally balance the roles of all adults.

Jennifer Toth, Elmbrook School District
Samantha Ziebart, Ryan Koch, Lauren Conlin, and Rachel Skinner

162 Kern - Brown (32)

Grades 6 to 8

Mathematics Progressions in Middle School

This session will immerse participants in algebraic tasks through active exploration of the progression and coherence of mathematics within the middle school (grades 6-8). Participants will walk away with concrete tasks and tools that can be leveraged to meet the needs of all learners.

Michelle DuPree, Menomonie School District
Brian Daniel, Lindsey Dombrowski, and Kathy Forster

163 Kern - Cary (32)

Grades 3 to 5

Open Tasks to Open Minds

We will engage you in open-ended tasks that we have created for 4th and 5th grade students that promote reasoning and problem-solving. We will discuss how our tasks emphasize the Standards for Mathematical Practice and encourage our students to use them when solving.

Tristan Kittleson, Glenwood City Elementary School
Matt Whitemarsh and Ashlee LeGear

164 Kern - Hanson (50)**Grades 9 to 12****Creating Your Own YouTube Math Channel and More!**

Do you struggle with students being absent due to field trips, sports, illness? I record all of my lessons using a document camera and then upload them to YouTube. It literally only takes minutes a day and the students really use it! Students who are absent are able to still get what we did in class and struggling students can watch the video to review the material.

I also will share some of my other favorite tech tips, including using Flipgrid for students to verbalize math, Canvas (LMS) to share info, recording PowerPoint, screencasts, I promise to show tools that are quick, easy, AND useful!

Janet Holba, Ripon Area School District

165 Kern - Johnson (50)**Grades 9 to 12****Individual Learning Plans with Standards Based Grading**

In this session we will discuss the creation and implementation of standards based grading and individualized learning plans for all students at the high school level. We will discuss the process of writing and implementing standards based grading and how it transformed the learning process and how individualized learning plans has personalized each and every student's learning in the classroom at PHS. We will share data on how standards and individualized learning plans has improved understanding in mathematics and where it will drive our focus in continued improvement.

Nathan Leu, Poynette School District
Leah Preiss and Stephanie Thompson

166 Kern - Stansbury (32)**Grades 3 to 8****Focus on Numeracy and Mathematical Practices Ten-Minutes at a Time! Number Talks for Grades 4 - 8**

Do you want to increase your focus on CCSS for Mathematical Practice? Number Talks provide a wonderful way to engage students in quantitative and abstract reasoning and the study of patterns and structure. These short problem-solving discussions give students opportunities to think creativity, speak precisely, and listen to and critique the reasoning of others - ten minutes at a time! In this session, we will engage in a variety of Number Talks designed for your upper elementary and middle grades students. Content will include integer arithmetic, arithmetic structure, algebraic thinking, and geometric thinking. We will also discuss effective strategies and tips for leading a Number Talk.

Jennifer Szydlak, University of WI Oshkosh

167 Lawson - MLK (24)**Grades 6 to 12****Managing Homework, Retakes, and Resources**

Teachers make thousands of decisions every day, and some of the more impactful ones involve how we manage all of the information we need to give and to get during the school year. I do not feel I have a perfect system, but I do have a manageable one. I will share my decisions and techniques, and I would like to hear yours as well. Our mutual goal should be that everything we do supports learning in the classroom.

Mike Weidner, Nicolet High School

KEYNOTE

168 Pillsbury - Staughton (300) Grades PK to 5

Building conceptual depth and procedural fluency by developing pacing guides with a conceptual flow

Ever wonder why you teach fractions after time when fractions are needed to talk about half and quarter past? Why do we focus on the place value of decimal fractions before we've done units on common and decimal fractions? Join this interactive session as we examine pacing guides that have a conceptual flow. Specific examples will be shared.

Sandy Atkins, Creating AHAs

169 RWI - Crystal (64) Grades 6 to 8

Using Manipulatives to Develop Conceptual Understanding in the Middle School

Manipulatives are not just for early elementary classrooms. Manipulatives can be used at all grade levels to allow students to investigate and develop conceptual understanding of concepts, formulas, and algorithms. The use of manipulatives can also provide an opportunity for your students to participate in math conversations with their peers in your classroom. Through the use of manipulatives students will justify their thought process and using multiple representations to problem solve and explain their thinking and reasoning with discourse. Join me to learn how you can use manipulatives in your math classroom.

Lynn Schaal, New London Middle School

170 RWI - Mahaney (40) Grades 6 to 8

7 Simple Solutions to Engage and Differentiate

Learn 7 strategies that are easy to implement yet have a high impact on student success at all levels. The focus will be on ideas for spiraled review, voice and choice, formative assessment, and how to move students to the next level. Resources and video clips will be shared.

Pamela Quirk, Lake Denoon Middle School
Nikki Kamperschroer, Katie Kruk, and Nikki Kamperschroer

171 RWI - McGarvey (24) Grades 3 to 5, 6 to 8, 9 to 12

What are CCR IEP's and Why Are They Important for My Students?

Did you know that yesterday's typical IEP's are now today's College and Career Ready IEP's or CCR IEP's? How does this change what you do in the classroom for students with IEP's? What does this IEP process now look like and why is it important for you to be aware and involved? We will explore and answer these questions and share resources to help you obtain better outcomes for your students with IEP's.

Tim Borud, CESA 6

Thursday 1:00 – 2:00 p.m.

172 Bauer - Beaty (50)

Grades 3 to to 12, College, General Interest

Exploding Dots (from the Global Math Project)

If you missed out on experiencing the hour and a half video of James Tanton explaining Exploding Dots, come see Mike try his hand at it. It is a way of looking at math and unifying some major concepts from place value, addition, subtraction, multiplying and dividing numbers all the way up to algebra 2 and calculus...all based on exploding dots.

Michael Tamblyn, Whitewater Unified School District

173 Bauer - Boddie (32)

Grades 3 to 5

Consecutive Conundrum

In a popular tale, Carl Fredrick Gauss stunned his elementary teacher by finding the sum of the numbers 1 to 100 very quickly. Variations of this problem provide opportunities to engage students in the Standards of Mathematical Practice. Participants will learn how to create several extensions for this task that are grounded in the Standard for Mathematical Practice and strengthen students' number sense.

Nicole Muth, Concordia University Wisconsin

174 Bauer - Ladue (30)

Grades 6 to 8, 9 to 12

Exploring Pythagorean Theorem with Paper-Pencil, AngLegs, and GeoGebra Software

Participants will be introduced the best practices for conceptual understanding of Pythagorean Theorem using multiple tools. Using paper-pencil and AngLegs, participants will explore conceptual understanding. Additionally, utilizing Dynamic Geometry Software (DGS), participants will further dig deeper about Pythagorean Theorem in an interactive and dynamic way. Opportunities will be also provided on how to find, explore,

and utilize Pythagorean Theorem-GeoGebra applets to enhance students' conceptual understanding.

Bhesh Mainali, Douglas county

175 Bauer - Lightbody (32)

Grades PK to 5

Using the Bead String to Structure Composite Units and Develop Facile Strategies

The 100 bead string is a powerful tool in helping students envision, make connections, and verbalize number relationships. Our goal is to get students facile with structuring composite units, but how we get them there is the KEY! Come explore the learning trajectories and corresponding bead string activities that will build deeper connections with foundational knowledge needed to develop conceptual place value.

Dina Mendola, US Math Recovery Council

176 Bauer - Morehouse A (50)

Grades 3 to 5

Ready, Set, Math - Learning Through Games (3-5)

Using math games in your classroom can be a great way to get students engaged with math content. They can practice concepts and skills while having fun! In addition, many games can easily be differentiated to meet the needs of the varied ability levels of students in your classroom. Come to this session to play some math games, consider how they can be changed up for your students, and walk away with several games ready to use.

Rose Palmer, School District of Waukesha

177 Bauer - Morehouse B (100)**Grades 6 to 8****Growth Mindset Math Camp**

How many of our middle school age students have a fixed mindset when it comes to their ability to be successful in mathematics classes? Supported by a WMEF professional development grant, I was able to travel to Stanford University to attend Dr. Jo Boaler's Mindset Mathematics workshop. I then implemented the summer math camp curriculum with a group of 5th and 6th graders at an elementary school. Join me to hear my take-aways from teaching Summer Mindset Math Camp.

Lori Williams, Manitowoc Public School Schools

178 Bauer - Morehouse C (100)**Grades 6 to 12****A Realistic Approach to Standards Based Grading**

Another year, another opportunity to learn how we're realistically using standards based grading. We'll show you how we've converted all of our math classes into standards based grading without a complete overhaul of what or how we've been teaching it. Because of our grading style we've created standards that students are responsible for learning it during the current unit, relearning it if they struggled, and retaining it throughout the year. We've presented the past 2 years and have received excellent reviews and feedback, so we're excited for the opportunity to present again.

Paul Frank, Rosholt School District
Brady Huebner

Thursday 1:00 60 minutes**179 Kern - Boehr (50)****Grades 3 to 5****Problem-Solving and Engagement Through 3D Box Sculptures, Based on Consumer Boxes, for 3-6 Grade**

Upper elementary students are asked to become well-versed in geometric concepts. Making these topics relevant and useful to students can be a challenge. By looking at

consumer boxes, and using flat geometric nets, made from one small or large piece of paper, this project allows students to be creative, while at the same time engages them in challenging problem-solving, visual literacy & geometry. Students start by making cubes and pyramids and move on to pentagonal dodecahedrons and much more. This workshop will be a great example of inspiring students with an integration of math, art and problem-solving. Participants in this workshop will obtain a workable guide on implementing this project into their classrooms. The session also includes an interactive discussion, and hands-on experience, to help all participants gain inspiration from others as they brainstorm how this project can be used in their classrooms.

Peter Wilson, University Lake School

**180 Kern - Brayton Case A (60)
General Interest****Principles to Actions: A Common Goal for a Local School District**

Principles to Actions states that, "... the lack of agreement about what constitutes effective mathematics teaching constrains schools and school systems from establishing coherent expectations for high-quality, productive teaching of mathematics." To meet this issue head on the School District of Slinger developed a 5 year plan to focus on each of the Mathematical Teaching Practices laid out by Principles to Actions. The purpose of this was so that students will have a coherent math experience from grade level to grade level, one that promotes understanding, reasoning, problem solving, perseverance, and discourse. This session will share our district's professional development plan to create a coherent mathematical experience for our K-12 students. It will also engage participants in a sample of activities that our teachers have experienced over the past two years which demonstrate several of the Mathematical Teaching Practices.

Jennifer Metke, Slinger School District

181 Kern - Brayton Case B (60)
Grades 6 to 12

Create and Post Recorded Videos using Google Drive and Smart Notebook

With many schools switching to google accounts, learn how to utilize Smart Notebook Recorder and the new "Drive Sync" to instantly post your recorded lessons to a website. We'll walk you through the process to set up your website and drive so you can post videos online as easily as saving a file on your computer.

Brady Huebner, Rosholt School District
Paul Frank

182 Kern - Brown (32)
Grades PK to 5

Making Math Accessible

Within our elementary classrooms, we strive to provide students with rich mathematical tasks where they engage in meaningful thinking. We will share examples of low-floor, high-ceiling tasks that provide all students an entry point, but allow students to dig in deeply to a mathematical concept. A variety of resources will be shared.

Sara Petersen, Durand Caddie Woodlawn Elementary School
Shauna Brion, Kristie Brusoe, Katarina Campbell, Amy Sandberg, and Erick Hofacker

183 Kern - Cary (32)
Grades 6 to 8

Mathematical Modeling in the Middle School Classroom

We will discuss how to engage middle school students in rich mathematical thinking through solving modeling problems with the modeling cycle. We will share examples of modeling-based math problems that we have used with our students.

Miranda Stowell, Eau Claire Northstar Middle School
Lindsey Alger and Ashlee LeGear

184 Kern - Hanson (50)
General Interest

Using Meta-Cognition to Create a Culture of Collaboration and Perseverance in a Math Classroom

No matter what level of mathematics we teach, the classroom culture plays a huge role when it comes to creating a great experience for our students. Using (E)vent + (R)esponse = (O)utcome and the Tribal Leadership paradigm we will explore how getting students to reflect on their thinking might help shape a classroom culture that encourages collaboration, making mistakes and learning from those mistakes together.

Rick Witte, Arrowhead High School

185 Kern - Johnson (50)
General Interest

Formative assessment probes: A website tool for formative assessment

Participants in a Mathematics and Science Partnership grant created formative assessment probes for grades 2-12. A website was created to share these probes with other teachers. This session will give details about the website created and ideas for using and/or creating formative assessment probes.

Christopher Hlas, University of Wisconsin-Eau Claire
Ryan Harrison Michelle Parks Lorna Vazquez

186 Kern - Stansbury (32)

Grades 6 to 12

My Co-Teacher is a Robot: Teaching Computational Thinking Through Stories

Ozobots are tiny robots designed to follow instructions per a series of color-coded commands. We will think about ways to implement computational thinking using Ozobots in the classroom. Keeping in mind the analogy that writing a program is like writing a story we will propose that computational thinking can be taught in all disciplines, and need not be limited to computer science classes. Following a brief tutorial we will design standard-based activities to co-teach a topic with the Ozobots. Participants will experiment with the Ozobots and share their ideas for interactive lessons. Please come with a standard picked out from your content area.

Rachelle Haroldson, UW-River Falls
Dave Ballard

187 Lawson - MLK (24)

Grades 9 to 12, College, General Interest

The Josephus Problem

Background information on the Josephus Problem will be given. Some variations and techniques for solving this type of problem will be presented.

Norbert Kuenzi, UW Oshkosh

KEYNOTE

188 Pillsbury - Staughton (300)

Grades 6 to 12

Using Task and Discourse to Position Each and Every Learner as Mathematically Competent

This session will make connections between task, discourse, identity and agency. Specifically, the session will examine how high cognitively demanding tasks provide opportunities to engage learners in meaning discourse positioning learners as risk-takers and mathematically competent. The session will use mathematical discourse community as a framework for connecting social norms of discourse to identity and agency.

Robert Berry, NCTM President Elect

189 RWI - Crystal (64)

Grades PK to 2, 3 to 5

Fun with Facts! Mastering Facts Through Differentiated Games!

How do I develop and maintain fluency in all students, when I have a wide range of learners? After being immersed in a variety of activities, you will leave with an understanding of fluency progressions and how to embed differentiated games into your daily instruction. Your students will be ecstatic with all the games you will be bringing back!

Becky Ryan, Beloit Turner School District
Kim Woodkey and Josh Thorison

190 RWI - Mahaney (40)

Grades 6 to 8, 9 to 12

Assessment: Why Bother?

With students taking so many high-stakes test, why should we use valuable class time testing what is being done in class? With the right type of assessment, students can actually learn. Participants will understand the difference between assessment for learning and assessment of learning, and learn which of the two promotes learning. Participants will understand the power of giving description, effective feedback, and practice giving it. Participants will learn and practice techniques for providing feedback that are not time consuming.

John Hayes, CPM Educational Company

191 RWI - McGarvey (24)

Grades 9 to 12

The UW System Mathematics Placement Test

Join us for a discussion of the UW System Mathematics Placement Test. This session will cover topics such as how the test is created, the content of the test and sample items, and the reliability and validity evidence for the test. In addition, the presenters will discuss when your students should be taking their placement test and how their test scores will be used on the various UW System campuses.

Sonya Sedivy, UW Center for Placement Testing
Richard Karwatka

192 YC - Cummings (96)**Grades 6 to 8, 9 to 12****Supporting Struggling Algebra and Geometry Students**

How do we support students who are struggling to learn the algebra and geometry skills that are required to pass these courses? This is a question many mathematics departments face every year and the driving force for the creation of Algebra Support and Geometry Support classes at Poynette High School. This session will discuss the development of the philosophy of the Support system, the curriculum and teaching practices implemented, and the successes and struggles teachers and students have faced. Multiple years of standards-based data will be shared to show the impact Support classes have had on measures including Algebra and Geometry grades and work habits, standardized assessments, and students' attitude towards mathematics and their own skills.

Leah Hover-Preiss, Poynette School District
Nate Leu and Stephanie Thompson

193 YC - Dominguez/Cox (24)**Grades 6 to 8****Math and Students with Special Needs**

Students with special needs pose a different challenge in our classrooms. Come learn different strategies for working with students with special needs within the math classroom.

Rebecca Runnells, School District of South Milwaukee

194 YC - Fordham/Ballenger (24)**Grades 6 to 8, 9 to 12****March Math Madness and the Big Loser**

The "March Madness" of the NCAA Men's Basketball Tournament has spawned interest throughout our culture. A similar bracket system has been used for competitions from everything from which is the best restaurant to who is the best supermodel to which is the most faithful saint (see www.lentmadness.org). In these tournaments, everyone cares about who the Big Winner is, but what about the Big

Loser? Predicting the Big Loser, as defined by a Mathematics Teacher article many years ago, is just as challenging as predicting the Big Winner, and allows my not-always-logical students to practice making logical deductions in a fun, relaxed context.

Mike Weidner, Nicolet High School

195 YC - Huber/Evans (96)**Grades 6 to 8, 9 to 12****Vertical Non Permanent Surfaces - Introduction to the SMART Kapp Whiteboard Technology**

In this session you will learn about a new technology, the SMART Kapp Whiteboards and how I am implementing them in my high school math classes as vertical non permanent surfaces. These boards are a way to provide multiple types of formative assessment for students. They help me to personalize learning by giving rapid cycle feedback that is more frequent and timely to help all learners. Come check out a great tool/technology to promote, enhance, and engage student learning!

Melissa Leister, Elmbrook School District

Thursday 1:00 60 minutes**196 YC - NG/Jones (24)****Grades 6 to 8, 9 to 12, College, General Interest****Tools for Tackling Word Problems**

This session will start with an algebra word problem, move to common misconceptions on students' understanding and solving that word problem, and introduce static and dynamic representations of the problem. A Geogebra applet will be used to improve students' understanding the problem in a dynamic environment. We will also discuss suggestions on how to use the dynamic mathematics software for problem solving, and I will share different applets for a variety of word problems and explain how to use these applets in the classroom.

SirinBudak, University of Wisconsin-Stevens Point

Thursday 2:30-3:30 p.m.

197 Bauer - Beaty (50) **Grades 9 to 12**

Personalized Learning in Secondary Mathematics

Each student learns at their own pace in their own way. How do you personalize a learning schedule, create high levels of engagement, have students take ownership of their learning in Mathematics AND keep content standards and have the student be CCR ready?

Competency-based curriculum, interdisciplinary learning, and more will be explored during this session. Models and methodologies (and supporting data) will be shared from KM Perform School for Arts & Performance (public charter) out dealing with competency-based learning, inter-disciplinary curriculum, contextual assessments and gamification that will be relevant / scale-able to all classrooms. My hope is give every participant at least one idea that will impact their Mathematics classroom.

Eric Anderson, Kettle Moraine School District

198 Bauer - Boddie (32) **Grades 3 to 5, 6 to 8, 9 to 12**

Building Understanding through Technology

Come view math from a different perspective as we explore how students build conceptual understanding from the elementary grades through high school. Participants will explore various technology tools that get students to manipulate representations Please bring a technology device (computer, iPad, Smart Phone). Elementary and Secondary math teachers would benefit from this presentation.

Dan Pochinski, School District of Waukesha

199 Bauer - Morehouse C (100) **Grades 9 to 12**

People Count! (And the Data Stories About Them)

Every country has a unique shape reflected by its population pyramid graph. Unpacking a country's graph reveals real stories about its people. A mathematical model will be developed that analyzes these shapes and stories by exploring "What if...?" Lessons for high school students will be presented that demonstrate a modeling continuum resulting in students creating their own analysis of a fictitious population distribution.

Henry Kranendonk, Marquette University

200 Kern - Johnson (50) **Grades 6 to 8, 9 to 12**

Flipping with EdPuzzle or Adding Accountability to Student Video Watching

Flipping a classroom is a great way to make the student learning space and active learning space. But how do we know if students are actually watching the videos, and how can we do formative assessments when delivering direct instruction via video? EdPuzzle to the rescue. Learn about how to use this free resource and even more about flipping your math course!

Michael Dorn, Milton

201 Kraft - Mitchell Dining (50) **Grades 3 to 5, 6 to 8, 9 to 12**

The Review Poster: Increasing Retention of Learning Targets

Students retain more when given the opportunity to illustrate and demonstrate the learning targets they are asked to learn. From basic arithmetic to limits and derivatives, students use their creativity creating posters to share with the class as a formative assessment for individual and class review in preparation for the summative unit assessment.

Richard Melcher, Colby

202 Lawson - MLK (24)
Grades 9 to 12

Factoring Quadratics: An Alternative Approach

Factor quadratics (i.e., $ax^2+bx+c=0$, when $a \neq 0$) is an important method for solving quadratic equations. Students need this knowledge for many courses in mathematics, such as algebra and calculus. However, students may feel difficult to use the guess and revise method or quadratic formula method. In this talk, we will propose an alternative approach to factor some quadratics.

Tongtong Zhang, Little Wolf Jr./Sr. High School;
UW-Stevens Point

203 RWI - Crystal (64)
Grades PK to 2, 3 to 5

What Do I Do Now?

Are you someone who assess and finds out what your student or students are missing but don't know what to do next? Its ok, we have all been there. Come to this hands on session to learn and try new activities to help your students strive in mathematics. We will be sharing activities to use for intervention, small group, and/or whole group.

Sara Swearingen, Wittenberg-Birnamwood School
Laura Klescewski

204 YC - Cummings (96)
Grades 6 to 8

Supporting Students who Struggle: Strategies for all Students

All students struggle. Productive struggle is encouraged and expected, yet some students struggle unproductively more than others. How can you support the students who require intervention without removing the productive struggle? In this session, you will experience activities, investigations, and teaching strategies to support all your students.

Mark Ray, CPM Educational Program
Karen Wootton

205 YC - Dominguez/Cox (24)
Grades 9 to 12, College

Ignite Math with Trades Applications

Northeast Wisconsin Technical College has been working with Bonduel, Oconto Falls, and Kewaunee high schools in order to increase collaboration between technical education and math teachers at the high school and technical college level. Contextualized math curriculum was developed by this group to implement in math classes and apply to welding classes. Hands-on activities and videos made in industry were developed in order show students aspects of manufacturing careers and how they relate to their current classes. Increased high school articulation with the technical college has also been a positive outcome. This project has been spread throughout Northeast Wisconsin.

Rachel Kern - Johnson (50), Northeast Wisconsin Technical College
Doug Schneckloth, Greg Boehmer, and Pam Coshun

206 YC - Fordham/Ballenger (24)
Grades 6 to 8, 9 to 12

Beyond the Exit Ticket - Using Data to Guide Instruction

We are called to elicit & gather evidence of student understanding at strategic points during instruction and to make in-the-moment decisions on how to respond with questions & prompts that probe, scaffold, & extend. This workshop will show teachers how to do this with middle & high school students - various forms of formative assessments (verbal, print, digital) will be shared.

Tricia Chmill, Houghton Mifflin Harcourt

207 YC - Huber/Evans (96)
Grades 6 to 8, 9 to 12, College

Solving the Homework Problem?

The age old question for math teachers, "How do you handle homework?" seems never to have a satisfactory answer. If you don't collect homework, then students don't do it. If you do collect homework, then you will burn out trying to assess it. Then there's the hybrid, just "checking to see that they did it". That creates a meaningless paper trail where copied or careless work is calculated into a student's grade. Then, how is homework graded? Should it count? If so, how much? Shouldn't kids make mistakes on the homework and not be punished for it? In this session I will share how I have handled the homework problem using Doctopus and a smartphone. Since I have started this strategy, I have seen improvement in the quality and quantity of student work. And as a bonus, this system helps deflect scorn from the "angry parent" by providing a record of hard evidence about student work. The strategy works best in 1:1 or BYOD schools, but modifications can be made for low-tech alternatives.

Douglas Guyette, Notre Dame Academy

208 YC - NG/Jones (24)
Grades General Interest

Your Toolbox for Success: Classroom Management for Success

Teachers are working so very hard to effectively teach mandated curriculum. In this jam-packed session, teachers will learn research-based, time-tested strategies and techniques for early intervention of disruptive behaviors. Office referrals will decrease, student achievement will increase, and teachers will have more time to teach!

Susan Hammack, js Educational Consulting

Thursday 2:30 – 4:00 p.m.

209 Bauer - Ladue (30)

Grades 6 to 12, College, General Interest

Processing: An Engaging Introduction to Text-Based Coding

Come learn to code using Processing, a free environment where graphics and user input can be quickly coded. One of the challenges for teachers of text-based languages is that beginning student projects are necessarily simple and lack interactivity. With Processing, students will create engaging games and animations using Java with much greater ease. Student projects can then be exported to be run as stand-alone programs. Teachers can use Processing as the main environment for learning Java or as a supplement to a more traditional environment. I use Processing with my AP CSA class following the AP exam as well as in an introductory coding class. This session might also be of interest to a middle or elementary teacher looking for enrichment activities for students.

Mike Cullen, Cedarburg School District

210 Bauer - Lightbody (32)

Grades PK to 5

Making Math Interventions Work in a Rural setting

In this session, learn how a small rural district developed and implemented a RTI program that meets the needs of all students. Utilizing teachers, interventionists, specialists, and coordinators, the district developed a unique vision. We will present the journey we went through to create our successful RTI system; share the website we created, the math handbook that we developed, and a math walk-through checklist; inform participants on how we collect, analyze, and report data; and review our schedule and discuss how data drives our decisions. Participants will view our district assessments, become familiar on how we triangulate data, and learn about the criteria for qualifying for a math intervention.

Karen Hover, Adams-Friendship Area Schools
Dawn Clark

211 Bauer - Morehouse A (50)

Grades 6 to 12

Building Procedural Fluency from Conceptual Understanding: Implications for Lesson and Unit Design

Building procedural fluency from conceptual understanding, one of the eight research-based effective mathematics teaching practices in NCTM's Principles to Actions, suggests that teachers move away from the traditional instructional sequence of skills first, application later. Breaking this cycle requires both changes in beliefs and changes to lessons and units within courses. This session will unpack what we mean by building procedural fluency from conceptual understanding, provide teachers with opportunities to consider how task sequencing within a unit can support students in building enduring conceptual understanding, and engage teachers in a discussion of what they can do to strengthen lesson and unit sequences to support understanding-first learning.

Mike Steele, University of Wisconsin Milwaukee

212 Bauer - Morehouse B (100)

Grades PK to 12, College, General Interest

Looking at Math Education Through the Lense of Access and Equity

Description: We will explore state-wide data, language from professional resources, personal experiences and specific strategies such as culturally responsive teaching for a focus on access and equity in mathematics classrooms. We will acknowledge personal and system wide inequities and bias, look at actions teachers and schools can take, and discuss accountability for this important work. Let's keep working on the goal of each and every student in Wisconsin having success in mathematics.

Kenneth Frank, Math Instructional Coach
Tracy Frank

213 Kern - Boehr (50)

Grades PK to 12

The Power and Purpose of Math Logs

The benefits of writing about math help students to think deeply. The use of the math journal is a powerful resource for students and a tool for sharing their strategies and learning. Come learn about the different components and how to organize the journal to best meet the needs of your learners.

Michelle Tranchita, School District of Waukesha
Maria Klassy

KEYNOTE

214 Kern - Brayton Case A (60)

Grades PK to 8

The Practices: A Recipe for Successful Teaching and Learning

The Standards for Mathematical Practice describe what students should be doing as they learn mathematics so they have the opportunity to think, do and make sense of mathematics at a level beyond computing and applying rules. NCTM's Principles to Actions includes eight Effective Teaching Practices that provide a framework of research based, high leverage practices for teachers in planning and implementing mathematics lessons that ensure deep mathematics learning for all students. Let's experience like what these practices look like in action.

Linda Gojak, NCTM Past President

215 Kern - Brayton Case B (60)

Grades 9 to 12

Critical Math for the ACT

High school math teachers face continued pressure to raise ACT scores, which play a critical role in the assessment of both students and schools. How do you balance the expectations between developing conceptual understanding and reaching proficiency? A closer look at the ACT College and Career Readiness Standards and the Wisconsin Standards for Mathematics reveals critical connections. In this session, you will compare these sets of standards and consider

implications for your classroom instruction. How do the Standards for Mathematical Practice come into play? Collaborate with colleagues around ways to address student achievement on this assessment.

Sara Brown, Mathematics Institute of Wisconsin

216 Kern - Brown (32)

Grades PK to 5

Informed Instruction – Enhancing Math Fluency

Over the last year, we have used Math Running Records with our elementary students to gain a better perspective of their procedural fluency. These records have informed our classroom instruction. We will discuss how we have connected this to implementing the Standards for Mathematical Practice.

Connie Roetzer, River Falls School District
Jayne Hoffman, Sarah L'Allier, Karen Olson, Michelle Smith, Maggie Watson, and Erick Hofacker

217 Kern - Cary (32)

Grades 9 to 12

Enriching Mathematical Modeling with Technology

We will showcase how the use of dynamic technology, such as Desmos and Excel, can be used to enhance modeling-based mathematics problems in the high school classroom and to make the problems more engaging for the students.

Samantha Falkner, Eau Claire Memorial High School
Ashlee LeGear

218 Kern - Hanson (50)

Grades 6 to 8

Inspirational Ideas for Middle School Math Teachers

Are you a new math teacher looking for ideas? An experienced educator who wants to be inspired? This fast-paced session will explore ways to spice up your classroom and increase student engagement! We will discuss new approaches, specific activities and online resources that can have a profound impact on you and your students. Similar to last year's session by the same name, but opportunity will be provided for participants to share their successful classroom ideas with the group so we all walk away enriched.

John Marzion, Oak Creek Franklin Joint School District

219 Kern - Stansbury (32)

Grades 3 to 8

Building a Math Community from the Inside Out

How does building a socio-emotionally safe space contribute to productive, student-led math discourse for ALL students? In this session we will present how shaping mindsets, building relationships and incorporating talk-moves lead to a rich math learning environment where everyone belongs, and everyone's voice is welcome.

Carrie Driscoll, School District of Waukesha
Kathy Ballweg and Leslie Waltz

KEYNOTE

220 Pillsbury - Staughton (300)

Grades 6 to 12

Using Inquiry to Build Thinking Classrooms

What does a thinking classroom look like? What should we consider in making our classrooms spaces where students are actively engaged in thinking about and doing meaningful mathematics? Building from the research literature about active learning and thinking classrooms, participants will do a variety of mathematical problems as they

explore what contributes to an environment dedicated to creating a lesson flow that focuses on students and their learning.

Gail Burrill, NCTM Past President

221 RWI - Mahaney (40)

Grades 3 to 5, 6 to 8

Getting Down to the Nitty GRITty of Formative Assessment

Principles to Action states, "Thinking of assessment as limited to 'testing' student learning rather than as a process that can advance it has been an obstacle to the effective use of assessment processes for decades" (National Council of Teaching Mathematics, 2014, p. 91). Teachers need to view assessment as an itinerary to guide them along their instructional journey. Formative assessment is the control panel that helps teachers monitor student learning and improve their teaching. Teachers can use it as a warning light to identify struggling learners so they can adjust their instruction based on student needs. This session gets down to the Nitty GRITty of formative assessment by providing creative games and approaches to help assess learning. It delves into formative strategies that can navigate the learning terrain and provides many teacher tested activities to map out assessment for learning.

Jane Lewis, Greenfield School District

222 RWI - McGarvey (24)

Grades 9 to 12

AP Statistics Starter Kit - Incorporating Activities into Your Curriculum

This session is for statistics teachers who are looking for some simple activities to implement into their classroom to illustrate key fundamental concepts. Transform your lectures into an activity-based approach, with a half-dozen well designed problems your students will work through in groups.

Steve Sollom, Hudson High School
Bill Fehrenbach, Jason Dahl, and Todd Brahm

Friday 8:00 – 9:00 a.m.

300 Bauer - Beaty (50)

Grades 3 to 5

A Multiple-Embodiment Approach: Beyond the Pizza and Revert then Multiply

In this presentation, preservice elementary teachers will share their findings about common fraction limited understanding and misconceptions that were seen throughout their practicum experience time working with fourth-grade students. Practicums intervention data about students' growth of fraction concept images and a multiple-embodiment approach that emphasizes student involvement, the use of manipulatives, and multiple representations (e.g., linear, discrete, etc) will be discussed. Pre- and post-practicum teaching students written questions will also be shared along with some artifacts. This session unpacks how to develop sound conceptual understandings of fraction and overcome students' misconceptions that can inhibit a high degree of fluency and the ability to apply the math they know to solve problems both inside and outside the classroom.

Holly Olson, University of Wisconsin- Stevens Point
Abby VandenBosch and Sinan Kanbir

301 Bauer - Boddie (32)

General Interest

Facilitating Mathematics-Focused Teacher Action Research

In teacher action research, educators analyze their own practice to address a personally relevant pedagogical question. This work centers teachers as professionals and empowers them to experiment and analyze within their own classrooms. Data sources such as observations, journaling, and student interviews, can give balance and perspective in an era focused on quantitative measures. This session describes how this model was applied in two different settings - a standalone course for early childhood educators and a course for K-8 teachers that is part of a larger certificate program. Session participants will learn about how action research courses integrated in-person and online spaces, how this model

supports teachers' mathematical inquiry, and discuss potential adaptations of this model for different contexts.

Gwyneth Hughes, UW Madison - EOP

302 Bauer - Ladue (30) (computer lab)

Grades 3 to 8

Amazing Websites for Your Math Classroom

Learn about some amazing math websites and how you could incorporate them into your classroom. These websites are geared for math classrooms 3-8.

Caitlin Clausen, Holmen Middle School

303 Bauer - Lightbody (32)

General Interest

Teaching with Endurance: Overcoming the Challenges for the Long Haul

Teaching mathematics is a challenging endeavor and for early service teachers it often feels like "sailing into the wind." The intensity of this challenge continues to escalate with the result being growing attrition rates and increasing discouragement. In a profession that asks teachers to develop perseverance in their students it seems lessons of perseverance need to accompany the growth and development of teachers. This session combines research, experience in the classroom, and lessons from a career of coaching and mentoring to provide some clarity on how to overcome the vast array of challenges faced by teachers of mathematics. If endurance is more than the ability to bear a hard thing, but to turn it into something glorious, then developing the ability to teach with endurance just might be the most important lesson a teacher acquires. Intended to be equal parts information and inspiration, ideas will be presented that will prove valuable to beginning teachers and those providing support to beginning teachers.

Bradley Kahrs, UW - Stevens Point
Jennifer Bowling

304 Bauer - Morehouse A (50)
Grades 3 to 5

Building Problem-Solving Success

When is the last time your students really solved problems? Promote discourse by having your students share their thinking, listen to one another, and contribute to their classmates' learning experiences. By using problems that have multiple paths to a single solution, all students - from gifted to special needs - will be able to make contributions and successfully learn mathematics in their classrooms.

Nicholas Restivo, MOEMS

305 Bauer - Morehouse B (100)
Grades PK to 5

Taking Action with the NCTM Effective Teaching Practices

Gain a deeper understanding of the 8 effective mathematics teaching practices identified in Principles to Actions—goals, tasks, representations, discourse, questions, understanding and fluency, productive struggle, and evidence. Examine how they form a framework for teaching mathematics and how they promote equitable and ambitious teaching. This session will engage participants in a set of activities from the new NCTM Taking Action series.

DeAnn Huinker, University of Wisconsin-Milwaukee

KEYNOTE

306 Bauer - Morehouse C (100)
Grades 9 to 12

Functions: What Makes Them so Difficult?

Students struggle with functions in almost all contexts. How can we restructure our approach so students understand how to connect different representations of functions, think about functions in general terms and develop the functional thinking they will need in as they progress in mathematics? And what is the role of interactive dynamic technology in doing so?

Gail Burrill, NCTM Past President

307 Kern - Boehr (50)
Grades 9 to 12

AP Statistics FRQ's: How to Score like APro

Rubrics are great but clickers are quicker. Learn how to train your students to self-assess their own AP statistics FRQ's (as well as others) using clickers for immediate classroom feedback.

Todd Brahm, West Bend East High School
Bill Fehrenbach Allison Hopkins Jason Dahl Steve Sollow

308 Kern - Brayton Case A (60)
Grades PK to 5

Simple Centers, Seriously?

Preparation, classroom management, and differentiation—all can make using centers a challenge. Come learn new strategies and share ideas to make center learning meaningful for students and realistic for the teacher. See new tools from ETA hand2mind to engage your students. Return to your classroom armed and ready to implement simple, yet effective and engaging centers with your students. Get free manipulatives that you can use now!

Lindsey Petlak, ETA/Hand2Mind
Jesse Michmerhuizen

309 Kern - Brayton Case B (60)
Grades 3 to 5

Partitioning and Iterating: Two Actions as Foundations in Fraction Understanding

How do we help students develop deep and lasting conceptual understanding of fractions? Physical experiences as well as rich, precise language help students to make sense of fractions as numbers. This session will explore important actions, multiple representations, and critical connections between partitioning, iterating and fractions.

Elizabeth Cutter, UW-Milwaukee

310 Kern - Brown (32)
Grades PK to 2

Addressing Numeracy with the Struggling Learner K-2

How do we begin supporting numeracy development? This session focuses on how students learn to compose and decompose whole numbers. We will view student video, discuss how to nudge their thinking towards fluent ways of computing, while focusing on gate-keeping concepts that hold students back.

Paula Muehler, Math Learning Center

311 Kern - Cary (32)
Grades 6 to 12

Mathematical Practices through Rich Tasks

We will engage the audience in meaningful mathematical tasks and discuss various Standards for Mathematical Practice that can be addressed within each, based on various approaches taken to solving the tasks.

Erick Hofacker, University of Wisconsin - River Falls
Amy Rice Zac Weber Austin Wilcox

312 Kern - Hanson (50)
Grades General Interest

WISELearn Grant Opportunity: Leveraging Open Digital Resources

Open Educational Resources (OER) are teaching and learning materials that reside in the public domain or have been released under an open license that may be used free of charge, distributed without restriction, and modified without permission. Now more than ever, districts are considering developing their own openly licensed core instructional materials, implementing OER reviewed by the WISELearn OER Project, or adapting resources reviewed using the same methodology. As a result, there is a great need to collaborate on resource adaptation and development, share ideas, define best practices, and champion effective and efficient distribution and implementation of resources. Come and learn how to apply for a 2018-19 WISELearn OER Innovation Grant (up to \$10,000) open to Wisconsin districts, consortia of districts, CESAs, and state non-

profit professional associations to support the work of authoring and building digital content collections

Jan Wickbolt, CESA #11

313 Kern - Johnson (50)
General Interest

The new WI Computer Science Academic Standards and Cybersecurity

We will examine the Wisconsin Computer Science Standards - the influencing documents, the structure the results and the inclusion of Cybersecurity issues in these standards. Why Cybersecurity? This is one of the hottest and most in demand areas of computer science and of great interest to many businesses and the government

Joseph Kmoch, Milwaukee Public Schools

314 Kern - Stansbury (32)
Grades 9 to 12, College, General Interest

"...But Some are Useful": The Art, Science, and Relevance of Mathematical Modeling

How can we teach students to approach the open-ended, complex, and potentially unanswerable questions of a real world that comes without an answer key? If there's no right answer, is there at least a good one? Or two? Or three? What does mathematics have to offer? Madison East students have been participating in the High School Mathematical Competition in Modeling (HiMCM) for the past nineteen years. Our Math Modeling Team advisor will discuss the modelling process and how our team prepares for competitions, classroom application, and challenges we still face. Audience members will leave with resources and ideas for making Mathematical Practice #4 transparent, non-trivial, and exciting.

Cynthia Chin, Madison Metropolitan School District

315 Lawson - MLK (24)**Grades****Teacher Certification in Wisconsin: From Preparation to Hire**

Mike Steele, WI-AMTE Special Session

KEYNOTE**316 Pillsbury - Staughton (300)****Grades PK to 5****Using Task and Discourse to Position Each and Every Learner as Mathematically Competent (PK-5)**

This session will make connections between task, discourse, identity and agency. Specifically, the session will examine how high cognitively demanding tasks provide opportunities to engage learners in meaning discourse positioning learners as risk-takers and mathematically competent. The session will use mathematical discourse community as a framework for connecting social norms of discourse to identity and agency.

Robert Berry, NCTM President Elect

317 RWI - Crystal (64)**Grades General Interest****Personalized Learning in a High School Math Classroom**

Implementing personalized learning in any classroom, let alone a high school math classroom, is a tall task. This session will be a follow-up to my session at last year's conference where I shared some grading for learning practices I implement in my classroom that allow students to improve their grade if they do not achieve well the first time they take a summative assessment while holding them accountable for their own learning and promoting retention, too. I will be sharing what personalized learning looks like in my classroom, including a few improvements, with whoever is interested in hearing about it and I would love to hear about what others are doing in their classrooms with regards to personalized learning as well.

Dominic Bauer, Pewaukee School District

318 RWI - Mahaney (40)**Grades 9 to 12****Method Madness**

"Did I do it right?" Who said it was wrong? Bring your opinion. We will share ours. With all the new methods being integrated into our math classrooms, students, parents, and teachers want to know which is best for our students. You will leave with an activity to use in your classroom at any level.

Anne Barber, Wisconsin Rapids Public School
Karen Scarseth

319 RWI - McGarvey (24)**Grades PK to 2****What's in your Numeracy Toolkit?**

"What the heck is a Rekenrek?" "What's the fame of a five- or ten-frame?" "What's the math with a number path?" This session will revisit WHAT the five best math tools are, HOW they impact young brains through problem solving, MODEL moves to increase math talk, and PROVIDE purposeful ways to plan with tools so they can make a good lesson GREAT! This session will also visit subitizing power; a skill that can be nurtured and needed for flexible thinking. Learn engaging ways to encouraging ALL students to utilize "Quick Looks" to learn facts naturally; achieving abstraction needed for fact fluency. Give-Aways!

Toni Osterbuhr, McGraw-Hill School Group

320 YC - Cummings (96)**Grades 9 to 12****Standards-Based Grading for High School Classes**

This session will address a method to assess students based on the Essential Standards for a class. A short discussion of the Essential Standards will be followed by specific examples of how to assess based on the Standards for a high school geometry class. Sample test questions will be shared along with ideas for reassessing and a scale for converting scores to a traditional grade book.

Nicole Esterling, Little Chute High School

321 YC - Dominguez/Cox (24)**Grades 9 to 12****WICOR Strategies in the Math Classroom**

Want to incorporate more college readiness strategies in your classroom?? In this presentation, you'll learn how to use data driven WICOR strategies (writing, inquiry, collaboration, organization, and reading) to improve student success. You'll be provided with specific resources to enhance ALL student learning and be able to implement in your classroom immediately!

Hannah Guth, Elmbrook
Sam Ziebart

322 YC - Fordham/Ballenger (24)**Grades 6 to 8****Rethinking Math Class to Increase Student Engagement**

Come learn about how I've designed math class to be far different from what I experienced. I will be sharing how to use the workshop model to integrate personalized learning, hands-on activities, and higher engagement. This is the same session that was presented last year.

Rachel Grim, Oak Creek-Franklin Joint School District
John Marzion

323 YC - Huber/Evans (96)**Grades 6 to 8, 9 to 12****The Tech Savvy Math Classroom**

How can you effectively integrate technology into a math classroom? Out of all the options, which sites/apps/extensions should you use? Who has time for any of this? We'll tackle these issues and more during this session. I've been integrating web-based technology into my classroom for my entire career. I'll share apps, tips and tricks that are classroom tested and student approved to help your students communicate their thinking, investigate complex topics, collaborate with peers, boost their skills, and stay motivated. Please bring a charged, web enabled device to this session.

Sara Phillips, Oconto Falls

324 YC - NG/Jones (24)**Grades 9 to 12****My Journey to a Standards-Based AP Calculus Class**

Our high school is transitioning to a Standards-Based Grading, or Grading for Learning, philosophy beginning in the 2018-19 school year. I will share our department's journey to prepare for this change as well as what I have implemented in my Advanced Placement (AP) Calculus class THIS school year. Assessments are graded on the spot, and my curriculum map has been totally revamped. Student perceptions will be shared as well.

Damion Beth, Baraboo School District

Friday 9:30 – 10:30 a.m.

325 Bauer - Beaty (50)

**Grades PK to 2, 3 to 5, 6 to 8, 9 to 12, College,
General Interest**

Breaking Out of the Box

Looking for a highly engaging activity to use with your students that require deep thinking, reasoning, and problem solving? Try a Breakout Box! Like an escape room, students are given a set of clues needed to be solved to open a variety of locks. This activity encourages teamwork and thinking "out of the box." Students are engaged in the mathematical practices, in addition to content standards. Participants will work together to try out a breakout box. Learn about resources available to start using this activity with your students and how to write your own, custom breakout.

Kerri Ryan, School District of Wisconsin Dells

326 Bauer - Ladue (30)

Grades 6 to 8, 9 to 12

Using 3D Software to Teach Geometry Concepts

According Common Core State Standards for Mathematics Students are expected to have knowledge of 3D shapes. Considering, 3D printing is becoming more and more common in every life, we can use 3D software to assist students' learning of geometry concept, especially involving 3D shapes. In this talk, we will illustrate how to use a 3D printing software to teach concepts such as cross-sections.

Senfeng Liang, UW-Stevens Point
Tongtong Zhang

327 Kern - Brayton Case A (60)

Grades 3 to 5

Fractions Don't Have to be Frustrating

How can I help my students understand fractions? Come see how using manipulatives, both hands-on and virtual, can help your students better understand fraction concepts. Discover why they can be a powerful tool; ideas will be shared for equivalence, ordering, addition, and subtraction of fractions! Strategies for differentiation will be shared as well.

Kevin Dykema, Mattawan Consolidated Schools

328 Kern - Stansbury (32)

Grades 6 to 8, 9 to 12, College

Choosing Mathematical Tasks for Productive Struggle, Not Frustration

Identifying cognitively demanding real-world tasks is the first step toward promoting productive struggle in mathematics. Participants will explore how to choose worthwhile tasks for productive struggle, how to effectively implement them while keeping frustration in check, and how these experiences can shape students' mathematical dispositions. The participants will be engaged through stories, videos, and active discussion of the mathematical content of three tasks.

Jackie Murawska, Saint Xavier University

Friday 9:30 -11:00 a.m.

329 RWI - Crystal (64) **Grades PK to 2**

Early Geometry Concepts: Building Connections to the Real World

Young children are active investigators of their world. Learning about space and shape helps them make sense of the world around them and lays the foundation for understanding geometry. Children develop this knowledge through experiences in four aspects: movement in space, location and direction, three-dimensional objects, and two-dimensional shapes. Additionally, it is the language children learn through their early geometry years that will set the stage for future success in the mathematics classroom. Come join in on the fun as we make geometry come to life!

Jessica Bobo, ORIGO Education, Inc.

330 Bauer - Boddie (32) **Grades 3 to 12**

Escape to Reflect

Class is about to end, and you look up at the clock. Only seconds remain, and you have no idea if what you just taught has been learned. Reflection is one of the most overlooked pieces to any lesson, but it doesn't need to be. Join us as we explore different methods of reflecting, reviewing, and analyzing the learning process. You will leave with practical strategies that you can use to transform your classroom into a community of reflectors. Topics included are Recap, Breakout, and Error Analysis. Come and learn with us.

Dan Kolesari, Elmbrook Schools
Michelle Pavletich, Shayla Estes, and Adam Jensen

331 Bauer - Lightbody (32) **Grades 6 to 12**

HyperDocs in High School Mathematics

A lot of resources are available for using HyperDocs - a content and lesson plan delivery platform based on Google Docs - in the elementary and middle levels of school. We will investigate the use of the HyperDoc and

check out ways that you can start using this platform in your classroom! Please bring your laptop, as this is a working session.

Blake Burgess, The Prairie School

332 Bauer - Morehouse A (50) **Grades PK to to 12, General Interest**

Harnessing the Power of 3-Act Tasks

Dan Meyer popularized 3-Act tasks in the early to mid 2000's. Now, Robert Kaplinsky, Andrew Stadel, Graham Fletcher and others are taking that and building more. Experience the power of the tasks and find tasks that you can use in your classroom to engage learners. Explore the WHY behind this classroom strategy.

Mark Schommer, D.C. Everest School District

333 Bauer - Morehouse B (100) **Grades PK to 8**

Develop Math Proficiency Through Problem Solving, STEAM Connections, and Formative Assessment

Come see how integrating math topics, using relevant, worthwhile problems, real world STEAM connections, and authentic assessments used in the classroom on a regular basis helps develop mathematically proficient students. Through engaging discussions and activities, participants will actively walk through a systematic approach before, during, and after teaching a concept that illustrates how easily STEAM can be implemented to enrich student learning, help students learn real life applications of math, and develop their positive dispositions towards mathematics. In this session, you will learn an easy to implement, comprehensive assessment plan that combines a traditional approach with innovative, authentic, formative assessment that provides relevant data to inform instruction.

Ellen Edmonds, W.H. Sadlier, Inc.

KEYNOTE**334 Bauer - Morehouse C (100)****Grades PK to 8****Giving Students Mathematical Authority: Strategies for the 21st Century Mathematics Classroom**

Current standards require students to be actively engaged in making sense of and taking ownership of mathematics. We will explore examples of what it feels like to give students mathematical authority in the classroom and examine the characteristics of routines and tasks that support powerful mathematics learning for all students.

Mark Ellis, California State University, Fullerton

335 Kern - Boehr (50)**Grades 3 to 8****Unpacking and Conceptualizing the Standards for Mathematical Practices**

CCSSM (2010) describes eight “standards for mathematical practice” (SMP). The SMP ask teachers to teach in ways which will enable their students to develop their thinking in ways like mathematicians think and provides guidance to maximize students’ learning. In this session, three UW-Stevens Point mathematics educators will share easy-to-use classroom resources to support the SMPs and explore how to use those tasks to support students’ productive struggle. They will examine elementary and middle-grade students’ work and provide practical ideas for the integration of the SMPs in your mathematics classes.

Sinan Kanbir, UW-Stevens Point
Bradley Kahrs and Sirin Budak

KEYNOTE**336 Kern - Brayton Case A (60)****Grades PK to 5****Life Doesn’t Come with Key Words (Addition and Subtraction)**

Addition is more than putting together. Subtraction is more than take away! Let’s look at how can we support students in solving word problems through developing operation sense. This session will focus on recognizing

addition and subtraction situations and using appropriate models to help students make sense of word problems. An instructional framework that engages students in this process will also be shared.

Linda Gojak, NCTM Past President

337 Kern - Brown (32)**Grades 6 to 8, 9 to 12****Coding in the Math Classroom**

Join this session if you are interested in new and intriguing ways to help students gain a deep understanding of mathematical concepts. We will use Texas Instruments Calculators and accessories to advance students understanding of mathematics. Come ready to explore and play!

Jessica Kachur, Indian Trail High School

338 Kern - Cary (32)**Grades 3 to 5****Formative Assessment and Essential Learning**

We will discuss how we have implemented the Formative 5 in an elementary classroom to inform our teaching and enrich the learning experience of our students. Some of the strategies we will focus on include observations, hinge questions, and exit tasks.

Vicki Gjovik, New Richmond School District
Lindy Bergman

339 Kern - Hanson (50)**Grades 3 to 5, College****52: Pick Up Some Number Sense!**

A deck of cards is all you need to play these games. Easy to learn, some can be complicated to master. Games for teams, for individuals, with chance and without, will all be presented. Whole number and fractions are the main focus (some extensions to integers will be discussed). I have used these games both with grades 3-5 and also with preservice teachers.

Linda Uselmann, Marian University

340 Kern - Johnson (50)**Grades 6 to 12****Coaching Teachers Using NCTM's Mathematics Teaching Practices**

The 8 Math Teaching Practices highlighted in NCTM's Principles to Actions have become a huge resource to the math education community. This session will provide tools that will help math coaches support teachers in the implementation of the researched based 8 Mathematics Teaching Practices. Narrowing our focus to these practices allows both coach and teacher to determine if instruction is creating the desired result, based on student actions. Come see how professional development, goal setting, lesson planning, data collecting and coaching conversations can all be influenced through the lenses of the 8 Mathematics Teaching Practices.

Tracy Frank, Math Instructional Coach

341 Kraft - Mitchell Dining (50)**Grades 6 to 12****Overhauling Middle School Math Interventions**

Learn how to move beyond pre-teaching and re-teaching in interventions to truly improve student's number sense and problem solving skills. Participants will walk away with assessments, activities, and digital resources to help create student specific intervention plans.

Rachel Kozicke, School District of Waukesha

342 Kraft - Tower Dining (50)**Grades PK to 5****Escape Room**

Participants will work as a team to find, relate, and interpret mathematical clues to break the code and "escape" from the room. The clues will incorporate concepts from elementary mathematics with an emphasis on the Standards for Mathematical Practice.

Ashlee LeGear, University of Wisconsin - River Falls

343 Lawson - MLK (24)**Coaching Forum**

Mike Steele, WI-AMTE Special Session

KEYNOTE**344 Pillsbury - Staughton (300)****Grades General Interest****the M in STEM**

All students need more STEM knowledge than ever, starting with quantitative reasoning and scientific thinking. And many students need to be prepared for STEM careers. K-12 mathematical modeling offers a rich opportunity to integrate math and STEM. Let's help every student learn to think, reason, and solve rich problems in math, STEM, and more.

Cathy Seeley, NCTM Past President

345 RWI - Mahaney (40)**Grades 9 to 12**

Long Division: It's Not Synthetic Any More
Manipulatives in a secondary math classroom? You'll see how successful it can be. Participants will be actively engaged in using algebra tiles and the area model to multiply polynomials. Then we will do factoring and completing the square. Finally we will use the area model to do polynomial long division. The important part is transitioning from the concrete (manipulative) to the abstract (paper and pencil).

Colleen Thompson, Mishicot School District

346 RWI - McGarvey (24)**Grades 3 to 5, 6 to 8****Turn Mistakes into Powerful Tools for Teaching and Learning**

Picture students saying, "I can't leave this mistake until I understand how to fix it!" Engage in learning how to help students embrace mistakes as growth opportunities. See how strategies like "Fix-It Friday", "Five Minute Fix-its", and "Mentor Madness" lead to stronger conceptual understanding, create safety that transforms discourse in teams, shift mindsets from fixed to growth, and change lives! Learn why teachers and students are so excited about mistakes!

Shelly Grothaus, Oconomowoc Area School District

347 YC - Cummings (96)**Grades 6 to 12****Higher Level Thinking and Discussions in the Math Classroom**

Are you looking for tasks that will create thinking in your mathematics classroom? Do you often spend hours looking for good resources? Are you struggling with facilitating productive discourse in your classroom? This session will focus on a lesson to engage students in higher level thinking while learning mathematics. The facilitator will engage participants in a math lesson on graphs of relationships that prepares students to learn about functions and then debrief the key parts of a higher level thinking task. They will provide participants the opportunity to reflect on their own teaching practices while also providing participants with strategies to facilitate higher order thinking in their classrooms. Our goal in education is provide students with a strong knowledge of mathematics and the key is using higher order thinking tasks.

Jill Swissa, Carnegie Learning
Saradhi Saripalli

348 YC - Dominguez/Cox (24)**Grades 9 to 12, College****AP Stats Activity Handbook**

Ever feel as if you have can teach the content impeccably, but are looking for the perfect activities to drive home the lesson? Do you teach AP Stats? This is the course for you! I will be detailing and sharing over 15 different activities to utilize throughout the year that will spruce up the curriculum throughout the year.

Riley Stone, Waukesha North High School

349 YC - Fordham/Ballenger (24)**Grades PK to 12, College, General Interest****Engaging Students by Learning Mathematics with Origami**

From simple to complex come on a mathematical journey while making some fun

and amazing origami together. You will learn how to incorporate origami into math lessons that you are already doing to better engage students. During the session you will be able to take everything you make. We will make simple designs with one piece of paper along with modular origami up to thirty pieces of paper. We will make connections to real-world applications with origami. Many examples of how I have used origami in my classroom will be on display.

Kyle Gregerson, Menomonie School District

350 YC - Huber/Evans (96)**Grades 9 to 12****Get the FACTs: Using Formative Assessment Classroom Techniques**

Join the discussion and participate in this workshop-style presentation to better engage and assess your students. Add to the repertoire of formative assessments you already use and walk away with new ideas.

Crystal Vesperman, The Prairie School

351 YC - NG/Jones (24)**Grades 3 to 12, College, General Interest****Rational Tangles --- A Mathematical Dance**

Math Circles are opportunities for students of all ages to learn what it means to solve problems like a mathematician. During this session, we will lead a Math Circle on Rational Tangles. This topic involves two ropes, two dance moves, and a fascinating problem to solve which motivates students to practice computations with rational numbers. This topic is also intricately related with contemporary research on DNA. In an after-school enrichment setting, this topic is suitable for students in grades 4 through 12. Rational Tangles meets Common Core State Standards for 4th through 9th grade students, though the fit is best for 6th through 8th graders.

Amanda Serenevy, Riverbend Community Math Center
Gabriella Pinter

Friday 11:30 a.m. – 12:30 p.m.

352 Bauer - Beaty (50) **Grades 6 to 12, General Interest**

Learning Math from Students Around the World

Students from Monticello connect with students from Spain and the Czech Republic to share ways to solve math problems. We connect using tools that are readily accessible to all teachers. Learn how to find fellow teachers to collaborate with from around the world and learn how to get started. The world is only a few clicks away.

Chris Collins, Monticello School District

353 Bauer - Boddie (32) **Grades 9 to 12, College**

Shedding Day"light" on Sine and Cosine Functions

This interactive workshop will allow participants a hand-on experience of teaching the meaning of the values in the sine and cosine parent function using a model of the hours of daylight throughout the year. The model will be constructed following the six steps in the modeling cycle in CCSSM. You will leave with a fun and engaging activity that allows for much discussion and interesting conversations ready for you to use in the classroom right away. Please bring a computer or calculator so that you can access a graphing utility as we explore the model.

Stephanie Bernander, UW-Oshkosh
Trenton Coleman Molly Osiecki

354 Bauer - Ladue (30) **Grades 6 to 12, General Interest**

Exploring the Edison: An Affordable Introduction to Robots

Interested in incorporating robots in your classroom but worried about the cost? In this session, participants will have the opportunity to experiment with Edison robots. These small, durable robots feature a number of different sensors, are compatible with Legos, and can be programmed using graphical or text-based

languages. After an initial overview, participants will work on introductory challenges and explore features of the robots. Laptops/ tablets are encouraged!

Josh Hertel, University of Wisconsin-La Crosse

355 Bauer - Lightbody (32) **General Interest**

The Shifts in Assessment

“What does it mean for assessment to be aligned to CCR standards and the shifts?” The Shifts of career- and college- ready (CCR) standards, including the Common Core State Standards, apply not only to classroom practice but also to assessment. In this session, we will review examples of problems to consider what is different about CCR-aligned assessment, and why those differences exist.

Astrid Fossum, Student Achievement Partner

356 Bauer - Morehouse A (50) **Grades PK to 2**

Ready, Set Math - Learning Through Games

Using math games in your classroom can be a great way to get students engaged with math content. They can practice concepts and skills while having fun! In addition, many games can easily be differentiated to meet the needs of the varied ability levels of students in your classroom. Come to this session to play some math games, consider how they can be changed for varying abilities, and walk away with several games ready to use.

Rose Palmer, School District of Waukesha

357 Bauer - Morehouse B (100)
Grades 6 to 16

What does college readiness in mathematics look like to K-12 teachers and UW faculty?

This session offers a panel of K-12 teachers and UW system-wide mathematics faculty, who will discuss college readiness in mathematics.

Specifically, the group will explore the knowledge, skills, and habits of mind required so students have successful experiences in credit-bearing college mathematics courses. The panel will address questions commonly asked questions by both constituents. The panel will also share current efforts underway in both arenas as well as those designed to bridge the two groups.

Jenn Kosiak, UW-La Crosse
Barbara Bales, UW System
Mary Mooney, Department of Public Instruction

KEYNOTE

358 Bauer - Morehouse C (100)
Grades 6 to 12

Reasoning in Math and Art

Mathematics is an interdisciplinary subject in many ways. Art and math can more than peacefully co-exist. Looking at public art in Wisconsin and in other places in the United States, one can begin to consider how the art might be used mathematically. Additionally, non-public art also fits into this picture. Come and think about how you might use it in your classes.

Johnny Lott, NCTM Past President

359 Kern - Boehr (50)
Grades 9 to 12

Improving Student Engagement and Motivation through Practices of Assessment

The presenters designed and implemented action research projects that focused on how practices of assessment influence student engagement. This session will help you answer questions such as, How do I know whether my students are engaged? Which practices of formative assessment are resulting in increased student engagement? What other lesson

elements impact student engagement? How does the classroom culture or choice of lesson task influence engagement? The session will conclude with the presenters' reflections on the effectiveness of their various assessment practices and the implications for future teaching and student learning.

Joan Masek, Milwaukee Public Schools
Mary Zietlow

360 Kern - Brayton Case A (60)
Grades 8 to 16

Modeling Important Social Issues with Data: Opioid Overdose Deaths in the United States

Have your students mathematically model this shocking real data from 2000 on. Make your students aware of this social problem and its consequences, and have them use the math that they are learning to analyze and interpret this real-world data. Discover how to create functions or a piece-wise function to model the data for interpolation and extrapolation purposes. We will also discuss how to calculate and interpret per cent change. Works with all 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.

Tom Reardon,

361 Kern - Brayton Case B (60)
Grades PK to 2

Take the Number Sense Journey

Stop teaching multiple strategies, start teaching SENSE. Participants will identify, experience, assess, and reflect upon the interrelated aspects of early numerical knowledge, the learning trajectory for counting and the number relationships which will establish a strong foundation for number operations through deep understanding not memorization.

Lynn Rule, MathRack

362 Kern - Brown (32)
Grades 6 to 8, College, General Interest

**Misconception Analysis with Students:
Using Technology to Remedy Discontinuity
in Problem Solving**

Most of the literacy in problem-solving involves post problem-solving reflections.

Borrowing from literacy's "miscue analysis", Jo and Leah, both teachers and Ph.D. students from UW Milwaukee Math Curriculum and Instruction department, wanted to record a student's thought DURING problem-solving. In using Seesaw social media, the students were able to post recordings of themselves while they are problem-solving. The recording was followed by a conference with the teacher and the student to analyze any misconceptions and successfully eliminate many of the firmly held discontinuities which then led to successful problem-solving strategies.

Johanna Groene, UW Milwaukee PhD Urban Curriculum and Instruction
Leah Rineck

363 Kern - Cary (32)
Grades 9 to 12

Creating Modeling Problems to Engage Students

Our presentation will focus on how you can address the mathematical modeling content standards in the high school curriculum. We will show how you can transform naked math problems into word problems, and then into modeling-based problems.

Paige Jones, Hudson High School
Laura Christenson, Samantha Falkner, Rebecca Lamb, and Ashlee LeGear

364 Kern - Hanson (50)
Grades 9 to 12

Self-Paced Learning in Secondary Mathematics : Year 2 Reflections

We will discuss our second year of implementing a self-paced learning model in our secondary math program. We will talk about how we implemented it, the changes we made for year two, reflect on what we have

learned, and talk about the things we are thinking about moving forward.

Joe Schneider, Marshall High School
Mike Rush

365 Kern - Johnson (50)
Grades General Interest

Trauma Informed Math Instruction

Students come into our classrooms with a host of outside issues that impact their learning. Poverty, police contact, AODA, mental illness, home life--these issues and others feel too large to tackle, but they limit our students ability to learn at high levels. In this session, we will discuss how and why toxic stress and adverse childhood experiences affect learning and cover practical methods for ameliorating those issues in the classroom.

Sara Phillips, Oconto Falls School District

366 Kern - Stansbury (32)
Grades 6 to 12

Creating Continuous and Dynamic Learning for All Students

How can we create a habit of learning for all students? Your apathetic students may actually be isolated! Come explore a variety of methods you can use daily to ensure all students win. Discuss proven strategies to eliminate isolation, foster risk-taking, improve dialog and accountability yet sustain active thinking for students of all abilities. Don't think it's possible? It is! Let's work together to explore strategies you can use to create active, empowered learners.

Peg Hartwig, Discovery Education

367 Lawson - MLK (24)

Preservice field experiences: Innovations in Planning, Teaching, and Mentoring

Mike Steele, WI-AMTE Special Session

KEYNOTE**368 Pillsbury - Staughton (300)**
Grades PK to 5**The gift of time: The importance of productive struggle to building a productive disposition**

Why do so many children feel that they are not good at mathematics? Why do they give up so easily or quit before trying? Supporting the development of a productive disposition through productive struggle calls us to engage in an instructional dance. A dance focused on students and creating a learning culture in which students become comfortable with being uncomfortable and not knowing. Join this interactive session as we examine specific strategies for giving elementary students the gift of time to see themselves as mathematicians.

Sandy Atkins, Creating AHAs

369 RWI - Crystal (64)
Grades 3 to 5, 6 to 8, 9 to 12, College,
General Interest**Next-Day Routine for Making the Best Use of Homework in the Mathematics Classroom**

During this session we will discuss a classroom routine to make better use of homework in the mathematics classroom. This routine places an emphasis on connecting mathematical representations, supporting productive struggle, and increasing mathematical discourse for all learners. Ideas of noticing and wondering will also be implemented.

Adam Paape, Concordia University Wisconsin

370 RWI - Mahaney (40)
Grades 6 to 8, 9 to 12**Empowering Students In and Out of the Classroom - Helping Students to Discover an Interest in Math**

Kids really can want to learn math. In this session you will discover ways to bring student engagement into learning. Students get to discover, learn, and review math concepts in fun, challenging, differentiated, and active ways. Use immediately in your teaching – whether it is a geometry or any other math class.

Elizabeth Masslich, Cedarburg School District

371 RWI - McGarvey (24)
Grades 9 to 12, General Interest**Are You Series?**

In this session, we'll explore some interesting problems related to the harmonic series.

Jason Thrun, UW-Platteville

Friday 1:00 – 2:00 p.m.

372 Bauer - Beaty (50) **Grades 3 to 12**

Adding Gamification to the Math Classroom

Learning math is fun when you add the element of fun competition. We will explore and share with each other math tools we use to make learning math enjoyable for everyone. We will look at both traditional math games and the latest versions. Come learn how you can use Kahoot, SMART lab, and others in your math classroom to spice up the learning of mathematics.

Chris Collins, Monticello School District

373 Bauer - Boddie (32) **Grades 3 to 8**

Making Sense of Dividing Fractions

The mathematical reasoning students develop through the intermediate and middle school years directly influences mathematical understanding in later years. In order for students to make sense of mathematical processes, it is imperative for teachers to have a deep conceptual understanding. Come for hands-on experience with the division of fractions and discover strategies you may never have considered. Learn ways to think conceptually about dividing fractions as well questioning strategies to use in your classes.

Deb Van Dalen, Hortonville
Jackie Ellerman

374 Bauer - Ladue (30) **Grades 9 to 12**

Using Desmos for Discovery, Inquiry, Conjecturing, etc

Desmos is an awesome online calculator app for any platform from your smartphone to your computer. This session will focus on ways to use it with your high school students.

Michael Tamblyn, Whitewater Unified School Dist

375 Bauer - Morehouse A (50) **Grades PK to 2**

Making Sense of Number Talks in the Early Grades

Participants will engage and learn background about beginning number talks in their early elementary classrooms. Number talks are a great warm up to get all students involved, help them strengthen fluency, intuition, and mental math strategies, improve students' ability to explain and critique solutions, and allow teachers a valuable window into their students' thinking. Number talks are a great compliment to Common Core Math Practices 1, 2, 3, 6, 7, and 8.

Amanda Nason, Kenosha Unified

376 Bauer - Morehouse B (100) **Grades PK to 8**

K-7 Action Research Findings

We are a group of teachers representing the K-7 spectrum who are completing action research projects in a supportive group around our practice as mathematics educators. We will be talking about the process and structure of action research as well as briefly sharing our results from K, 1, 2, 3, and 6/7. We are working in a district in its second year of working with the Bridges curriculum, so connections to this curriculum may also be included.

Jennie Ebert, Prairie View Elementary School
Stephanie Anderson, Allyson Keys, Erin Connell,
Brittany Cox, Mara Brooks, Gwyneth Hughes, and
Abbie Mannenbach

KEYNOTE

377 Bauer - Morehouse C (100)

General Interest

Upside Down Teaching

Instead of teaching a procedure and then letting students try a problem where they use it, what if we turned teaching upside down and started with a good problem? Let's think together about what a classroom might look like if we use a problem as a vehicle for fostering student thinking and classroom discourse rather than focusing on getting the answer.

Cathy Seeley, NCTM Past President

378 Kern - Boehr (50)

Grades 6 to 12

A Year with Android Tablets

What I learned my first year teaching with a classroom set of Android Tablets. Starting from the beginning, why I selected the devices I did to projects that worked and those that didn't. This session will be a complete summary of my first year with a 1-1 high school math classroom and what I learned.

Jesse Gleason, Southwestern

379 Kern - Brayton Case A (60)

Grades 6 to 8

Number Talk Strategies

Number Talks can engage all Middle School students in productive math conversations. In this session, you engage in number talks, share and learn strategies for computation. We will also share how we design purposeful number strings and how Number Talks have impacted our classrooms.

David Stanchfield, South Milwaukee School District
Scott Giera

380 Kern - Brayton Case B (60)

Grades PK to

5

Putting the "M" back in STEM through an Engineering Design Challenge

Everyone is talking about STEM, they seem to be leaving out the M. Looking to create future

computer engineers? See how students design, build, test and redesign a robot coding mouse (GR K-2) and coding transmission system (GR. 3-5) to protect information. Come explore ways to teach rigorous mathematics through STEM activities.

Lindsey Petlak, ETA/Hand2Mind

Barbara Jo Evans

381 Kern - Brown (32)

Grades 6 to 12

Do Your Students Know What They Don't Know?

John Hattie reports in his book, "Visible Learning for Teachers," that student self-assessment has the largest effect size on student achievement. How can we help students identify the learning targets they understand and determine what steps are needed to improve upon learning targets they don't fully understand? We will share with you the journey we took this year to guide our students to be actively involved in self-analysis of specific learning targets and take the corresponding steps to fully understand the learning targets.

Laura Bell, Portage Community School District

Jesse Knetter

382 Kern - Cary (32)

General interest

Enriching Instruction through Habits of Mind

We will discuss the model we have used the last three years for providing professional development for over 100 teachers in Western Wisconsin as part of our grant project "Mathematical Progressions through Habits of Mind". We will provide sample tasks that we have used with teachers to showcase how to develop habits of mind in our teaching and learning.

Sherrie Serros, Mount Mary University

Erick Hofacker and Ashlee LeGear

383 Kern - Hanson (50)**Grades PK to 5****Understanding Mathematical Concepts through Children's Literature**

Children's books not only spark students' imagination but when used in conjunction with math lessons, can enhance learning in many ways. By building on the intangible perception of math concepts and processes through illustrations, the use of children's literature can build student problem-solving skills, promote the development of number sense, increase the level of interest, and can be used to review concepts or skills.

Within this session, preservice elementary teachers will help translate some of the instructional strategies that teachers are comfortable using and using children's literature to teach some essential concepts (e.g., measurements, place value, counting, whole numbers, and fractions). Specifically, the presenters will share several books and ready to use classroom worksheets and lesson plans.

Abby VandenBosch, UW- Stevens Point
Holly Olson and Sinan Kanbir

384 Kern - Johnson (50)**Grades 6 to 12, General Interest****It Starts with Squares**

Starting with just squares on a dot grid, we will investigate all sorts of mathematics in a hands-on, draw-it-yourself workshop. The Pythagorean Conjecture and Pick's Conjecture will be discovered and proved. We will also investigate some properties of certain irrational numbers that emerge.

George Marino, Retired

385 Kern - Stansbury (32)**Grades PK to 12****Computational thinking concepts and dispositions in mathematics instruction**

We will review the computational thinking concepts and dispositions with some examples. Then you will work with a small group to take some mathematics lessons and identify where CT concepts and dispositions are included and where they can be enhanced. We will develop a shared spreadsheet of our small group results during this session.

Joe Kmoch, Milwaukee Public Schools

386 Kraft - Mitchell Dining (50)**Grades PK to 5****Bridges Panel Discussion**

Nathan Rosin, Sun Prairie School District

387 Lawson - MLK (24)**Grades****Designing and Supporting Teacher Learning through Professional Development**

Mike Steele, WI-AMTE Special Session

388 RWI - Crystal (64)**Grades 3 to 5****The Tools to Facilitate Rich Conversation**

This workshop will focus on ways to facilitate and enhance mathematical discussions in the classroom based around content areas. Participants will be equipped with tools and techniques to plan and manage conversations; evaluate, select, and sequence student responses; and elevate the rigor of discourse in the mathematics classroom.

Joel Burdick, Curriculum Associates

389 RWI - Mahaney (40)

Grades 6 to 8, 9 to 12

Breaking Tradition: Creating a student-centered classroom

Many secondary math classrooms are still set up very traditionally. The teacher stands at the board and does the majority of the talking while the students are taking notes. This session will provide strategies that will help teachers transfer the focus to the students. I will provide a toolkit of strategies on using quality questioning, effective small groups, and formative assessment to ensure that all students are engaged throughout the entire class period. The strategies will be modeled during the session and demonstrated in a few short video clips. Teachers will leave with a set goal to help them get started transforming their classrooms to be student-driven rather than teacher-driven.

Tanya Amys, Maple School District

Friday 1:00 60 minutes

390 RWI - McGarvey (24)

Grades 3 to 5, 6 to 8, 9 to 12, College

Building a Community of Math Learners by Looking Up and Down the Curriculum Ladder

In this session, participants will discover ways to support their math learners by looking at the curriculum ladder. The session will include research from an actual classroom teacher. Participants will also practice looking up and down the curriculum ladder to see how the community of math teachers can build the success of math students.

Michelle Greene, Darlington County School District

Friday 1:00-2:30 p.m.

391 Bauer - Lightbody (32)

Grades PK to 2, 3 to 5

Focus on Frames: Fine-tuning for Fluency

Educators will have the opportunity to consider the purposeful use of frames for moving toward fact fluency through conceptual understanding. Participants will experience an inquiry-based, collegial instructional atmosphere as we reflect on ways to purposefully move away from materials while engendering increasingly sophisticated strategies in students.

Sherry Thompson, US Math Recovery® Council
Christy Lyle

Friday 2:30 -3:30 p.m.

392 Bauer - Beaty (50)
Grades 9 to 12

Creative Activities and Ideas to Better Prepare Your Students for the Revised ACT and Provide Conceptual Understanding

Preparing your students to be more successful on the math portion of the ACT should be integrated throughout your daily lessons. We will provide interactive activities that align to the types of problems that are on the newly revised ACT. Warning: students may learn and retain the math better in the process! Get access to problems from the most recent exams and all activities. Speaker wrote problems for the ACT.

Tom Reardon

393 Bauer - Boddie (32)
Grades PK to 5

Using the Bead String to Structure Composite Units and Develop Facile Strategies

The 100 bead string is a powerful tool in helping students envision, make connections, and verbalize number relationships. Our goal is to get students facile with structuring composite units, but how we get them there is the KEY! Come explore the learning trajectories and corresponding bead string activities that will build deeper connections with foundational knowledge needed to develop conceptual place value.

Dina Mendola, US Math Recovery Council

394 Bauer - Ladue (30)
Grades 3 to 5

Computer science and mathematics activities at the elementary level

Programming activities and CS unplugged are fun ways to get students thinking and creating in the elementary classroom. In this session, I will share some activities created by and for elementary teachers in Illinois.

George Reese, University of Illinois

395 Bauer - Lightbody (32)
Grades General Interest

More than Family Math Night: Engaging Families in Math

Are you feeling like Family Math Nights are bringing in the same families? Do you want to think about different ways to engage your families in math? Join us for some ideas to get you started thinking about how to help families look at math as fun, exciting, and not like it used to be!

Lori Rugotska , CESA #6

396 Kern - Boehr (50)
Grades 9 to 12

Newtownian Geometry! Building a Community from the Ground Up.

My geometry class was tasked with designing a new town from the underground utilities up to the overhead telephone lines! We will talk about the origin of the project through the final project from the perspective of the teacher, students and community.

Richard Miles, Racine Unified School District Students

397 Kern - Brayton Case B (60)
Grades 6 to 8

Using Manipulatives to Help Students be Successful with Algebraic Concepts

Do your students struggle with algebraic concepts? See how your students benefit from a visual approach to algebra and learn how hands-on activities can help promote their understanding of algebraic concepts. Topics include integer operations, solving equations, polynomial expressions, graphing, and more!

Kevin Dykema, Mattawan Consolidated Schools

398 Kern - Brayton Case B (60)**General Interest****So Your School Has iPads (or Tablets), Now What?**

Using iPads and tablets has never been easier or more engaging in the classroom. By using apps, lessons can become much more seamless and powerful. This session will delve into using the apps Nearpod and Doceri to elevate your lessons, increase participation, and even help with classroom management. Most importantly, these apps will save you time!

Joshua Pabian, Brookfield Academy

399 Kern - Cary (32)**Grades General Interest****Equal Doesn't Mean Same**

How are you ensuring that all of your students have access to the high quality math instruction? This is a question that is imperative for us to answer. While there are not easy answers, in this session we will share, analyze, and discuss a variety of possible ideas to ensure that ALL students have access to rigorous, high-quality mathematics.

Rose Palmer, School District of Waukesha

400 Kern - Hanson (50)**Grades 6 to 12****Tasting Mathalicious -- First year**

Hear about one teacher's commitment to being more project based by using Mathalicious!

Listen to the story about What it is, How it Works and What it does for students. Hear this teacher's story from learning to navigate the site and how to use with the students, the highs and lows, the strengths and non-strengths.... If you have thought about PBL or Mathalicious this session may be for you.

Scott Anderson, Juda

401 Kern - Johnson (50)**Grades 9 to 12****Tamblyn's Top Ten**

If you like counter intuitive problems but have not heard about Monty hall, birthday problem, or rope around the earth, then you need this session for awesome problems that require a growth mindset.

Michael Tamblyn, Whitewater Unified School Dist

402 Kern - Stansbury (32)**Grades PK to 2****Formative Assessment at a PK-2 Level**

We always hear about using formative assessment, but what might this look like for our youngest learners? This session will dive into answering some of those questions while taking a look at using formative assessment in one's elementary classroom.

Alicia Korth, Lincoln Elementary School, New London School District

Friday 2:30 -4:00 p.m.**403 Kern - Brown (32)****Grades 3 to 5****The How and Why We Integrate the Arts and Math**

In this session you will receive information on how and why we integrate the arts and math. You will experience a hands on lesson that can be implemented in your very own classroom! You'll walk away with a variety of ideas on how to use this approach within your curriculum.

Melanie Lichtie, Waukesha School District
Kappes Terri

Friday 2:30 90 minutes**404 Lawson - MLK (24)****Grades****College and Career Readiness: Implications for high schools and two- and four-year colleges**

Mike Steele, WI-AMTE Special Session