Mathematics, and the Michigan Department of Education. GVSU College of Education, Michigan Council of Teachers of Department of Statistics, GVSU College of Liberal Arts and Sciences, Mathematics, GVSU Regional Math and Science Center, GVSU Math in Action is supported in part by: GVSU Department of









or check only. Some exhibits will be available with items for sale, cash

> 7 noiss₉2 2:30-3:30 P.M. **KEANOLE 2**

Session E or Lunch 1:20-2:20 P.M.

Session D or Lunch 12:10-1:10 P.M.

KEYNOTE 1

Session C or Brunch NOON-.M.A 11

> Session B .M.A 02:01-02:9

> A noiss₉2 .M.A 04:6-04:8

SCECH REGISTRATION

Registration and Refreshments .M.A 0E:8-8

CONFERENCE SCHEDULE

November 18, 2016

Dear Colleague,

You are cordially invited to participate in this year's Math in Action conference. Math in Action is hosted by Grand Valley State University (GVSU) on the Allendale Campus on Saturday, February 25, 2017.

Math in Action sessions address a broad spectrum of practical use-in-your-classroom-tomorrow activities, hands and minds on! There are six hour-long sessions with several presentations from which to choose during each session. The Mathematical Practices, Standards Based Grading, classrooms, and learning through games are just some topics highlighted in the sessions. Several technology sessions are also offered so bring your tablet and smart phone!

This year there will be two general keynote sessions, one during Session C (11:00am - 12:00pm) and one during Session E (1:20 -2:20pm). The keynotes will be presented by Tracy Zager who edits math and science professional development books for Stenhouse Publishers and works with schools as a coach/consultant. Tracy is also the author of Becoming the Math Teacher You Wish You'd Had: Ideas and Strategies from Vibrant Classrooms. Plan to come and work with and hear from teachers at all levels.

Morning beverages near the registration table and brunch or lunch in the GVSU Commons are included in the conference registration fee. To avoid congestion, three meal periods are scheduled. Brunch is available during Session C (from 11:00 am -12:00 pm). Lunch is available during Session D (from 12:10 - 1:10 pm) and Session E (1:20 - 2:20 pm). Food and beverage choices in the GVSU Commons are diverse and accommodate most special diets. Come hungry!

Please share this brochure with colleagues. Brochures may also be downloaded from http://www.gvsu.edu/mathinaction. The deadline for registration is February 14, 2017; please don't delay!

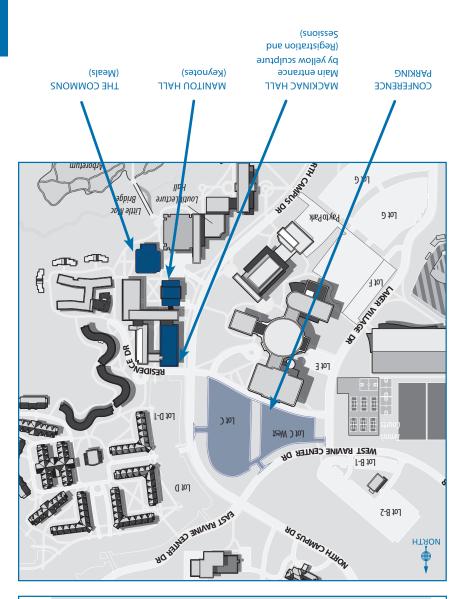
Looking forward to you joining us! For comments or questions, contact us at mathinaction@gvsu.edu.

Sincerely,

Math in Action Steering Comittee Members

Pam Wells & David Clark, GVSU Co-Chairs Jan Kuzee, GVSU Site Director Rusty Anderson, Kent ISD Robyn Decker, Ottawa ISD Krisitin Frang, Muskegon ISD Hope Gerson, GVSU John Golden, GVSU Lynn Heline, Ionia ISD Jan Koop, Calvin College Tara Maynard, Zeeland Creekside Middle School Karen Meyers, Regional Math & Science Center Jillayne Prince-Wallaker, Holland Public Schools Mary Richardson, GVSU Jan Roy, Montcalm Community College Mary Ann Watters, Regional Math & Science Center









LOCATION

in fourth-grade, of course. - hopes to return to full-time teaching someday learning together with teachers and students over time, consultant. She's happiest when she is in classrooms, Publishers and working with schools as a coach/ science professional development books for Stenhouse She now splits her time between editing math and

Classrooms. You Wish You'd Had: Ideas and Strategies from Vibrant field research for her book, Becoming the Math Teacher After several years in adult education, Tracy began

mentors. to work with pre-service teachers and their in-service her daughters came along, she gave up her classroom Tracy Zager is a fourth-grade teacher at heart. When



Tracy Zager

KEANOTE SPEAKER

February 14, 2017 Registration and Refund Deadline:

\$45.00 per teacher, \$25.00 per undergraduate student

\$40.00 per teacher, \$20.00 per undergraduate student

noitanidtem/ubs.usvg.www Online Registration Only

Late and onsite registration:

REGISTRATION INFORMATION

MATH in ACTION

Making Math Meaningful

A Conference for PreK-College **Mathematics Educators**

Saturday, February 25, 2017 8 A.M.-3:30 P.M. Grand Valley State University - Mackinac Hall Allendale Campus

Visit our website at www.gvsu.edu/mathinaction





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SESSION A: 8:40-9:40 A.M.

A4 Making

A1 Math in Art John Golden, Grand Valley State University Heather Minnebo, West Michigan Academy of Arts and Academics

Participants will think about how art can give purpose and context for math, and math can inspire art. Heather, an artist, and John, a mathematician, will lead hands-on activities.

Grades PreK-2

A2 Common Core Mathematics Assessments for Every Standard Keith Barnes, St. Joseph County Intermediate School District St. Joseph County teachers created CCSS Mathematics assessments for every grade-level standard. Focus includes the unpacked standards and assessment writing process. Assessments are shared in a Google site. Grades K-11

A3 Engaging Students in Meaningful Math through Games David Coffey & Kathryn Coffey, Grand Valley State University Games are an effective way to engage students in learning. Participants will experience how to support the development of pre-adolescent mathematicians through purposeful play.

Grades 3-5

Grades 3-5

Grades 9-12

Lively) Demetrius Nelson, Clay Elementary School/Cobb County School District Participants will learn of highly engaging retention strategies to assist 3rd-6th grade students understand math standards related to factorization, fractions, and multiplication

A5 Setting up a Collaborative Classroom Tara Maynard, Creekside Middle School, Zeeland Public Getting students to collaborate & work together takes time, patience, modeling & thought-out activities. Come explore activities that help set up a collaborative, student-centered Grades 6-8

classroom that is focused on relationships. A6 Do Dogs Know Calculus? Timothy Pennings, Davenport University

connecting to family, dining, sports, and music.

lake leads to interesting mathematical questions. In particular, does the dog take the shortest time route to the ball? Grades 9-12

We show how watching a dog retrieve a ball thrown into a

A7 Desmos 101: Online Graphing Calculator For All Devices Kevin Lawrence, Michigan State University An introduction to desmos.com, an online graphing calculator for laptops, tablets, and smartphones. Focus is on creating dynamic representations (symbolic, tables, and graphs) for

SESSION C or BRUNCH: 11 A.M.-NOON

C1 KEYNOTE: How Do They Relate? Teaching Students to Connect Ideas

Tracy Zager, Stenhouse Publishers & Coach/ Consultant

Many students see math as a series of discrete topics, rather than a landscape of interconnected concepts. We'll analyze transcripts and student work that reveal strategies for teaching relational thinking, an important habit of mind of mathematicians. We'll play with rich questions to encourage students to make—and appropriately break—mathematical connections among concepts you teach. Grades PreK-12

C2 Using Manipulatives and Picture Books to Develop Addition E2 3 Act Tasks and Subtraction

Kevin Dykema, Mattawan Consolidated Schools

How can I help my students better understand addition and subtraction, rather than memorizing series of steps? Discover why manipulatives are powerful tools to develop conceptual understanding **Grades PreK-2**

Math R.E.A.L. (Relevant, Experiential, Applicable, C3 Differentiating for Diverse Learners Using a Guided Math Framework

Olivia Alkema, Kristin Root & Christi Gilbert, ZONES Math Teachers learn ways to increase student engagement, develop mathematical language, and promote higher-order thinking for diverse learners using a guided math framework that can be used with any curriculum. Grades 3-5

C4 Developing Creative Problem Solvers Eric Mann, Hope College

> Mathematics embraces creativity and beauty, attributes that are often hidden when algorithms and computational speed are favored. We'll explore mathematical creativity and its implications for the teaching and learning of mathematics.

> > Grades 3-8

C5 Equal is as Equal Does! Discovering the Properties of

Holly Ylitalo, Ashley Community Schools

How a STEM lesson designed for students to discover the Property of Equality on their own actually worked out in the classroom... and where to go with it next. Grades 6-8

C6 Mathematical Modeling in High School: Getting at the SMPs for All Students

Jason Gauthier, Allegan County Intermediate School District

Come discuss and experience how mathematical modeling, beginning with open problems, can help students engage with and master the Standards for Mathematical Practice, better preparing them for college and careers. Grades 9-12

SESSION E or LUNCH: 1:20-2:20 P.M.

Consultant



E1 KEYNOTE: How Do They Relate? Teaching Students to

Connect Ideas Tracy Zager, Stenhouse Publishers & Coach/

Many students see math as a series of discrete topics, rather than a landscape of interconnected concepts. We'll analyze transcripts and student work that reveal strategies for teaching relational thinking, an important habit of mind of mathematicians. We'll play with rich questions to encourage students to make—and appropriately

break—mathematical connections concepts you teach. Grades PreK-12

Chelsea Ridge, Regional Math and Science Center

It is important to be intentional when engaging children in mathematical tasks. The Three Act Task framework provides a structure for teachers to engage with students in rich tasks. Grades PreK-2

E3 Build Math Explanations Through App Smashing and Screencasting

Carolyn Bolduc, Grand Rapids Public Schools

We will use iPads to construct math concepts using app smashing and screencasting. Please bring your iPad. Seesaw, Download free apps: Geoboard, Educreations, Number Line and Number Pieces. Grades 3-5

E4 Mathematical Learning through Fun Games with Online Materials and Instructional Videos

Karen Novotny, Grand Valley State University

Sabrina Fuggerson, Abbie Reed, Kara Plaggemars, Kaela Sakorafis, Madison Starr, & Chelsea VanderZwaag, GVSU Students

We will play some math games created by GVSU math majors. In addition, we'll share progress on our project to provide free online materials and instructional videos for those games. Grades 6-8

E5 Deeper Learning: Using SAT Data to Change Instruction Jill Griffin, Michigan Department of Education

Participants will engage in a review of the current SAT test data to examine how making small shifts in math instruction can lead to deeper learning for ALL students. Grades 9-12

E6 Blending Your Class

Michael Dodge & Julie Grinwis, Reeths-Puffer High School Have you flipped your classroom? Have you created videos for your students? This session will look at other ways you can use technology to increase student engagement and achievement. Grades 9-12

SESSION B: 9:50-10:50 A.M.

B1 Launching Math Workshop Sara Voss, Zeeland Public Schools

the algebra classrooms. Bring a device!

This break-out session will help you understand and launch Math Workshop in your classroom. Grades PreK-2

B2 Math in Your Feet: Moving Bodies are Learning Bodies

Malke Rosenfeld, Math in Your Feet

Kids love to move! Learn how we can harness students' whole, moving bodies as tools for doing, learning, and making sense of mathematics.

B3 Do you have a growth mindset? Jon Hasenbank, Grand Valley State University Megan Reiley & Sarah Park, GVSU Students Come see how math teachers in our hall empowered kids by focusing on growth mindset. Based on Boaler & Dweck's book Mathematical Mindsets. Grades 3-5

B4 Leveraging the Flip to Personalize Instruction Delia Bush, Central Elementary School/Kenowa Hills Curious about flipping your classroom? It's more than just videos! Come learn about how I use a flipped classroom to personalize instruction for all learners. Grades 3-8

B5 Rich Task + Facilitation = Understanding Rusty Anderson, Kent Intermediate School District

This session will imitate a classroom where participants interact with a task and participate in facilitated dialogue. Outcomes: Visual Pattern Task Exposure, Teacher Discourse Moves, and Group Protocols Grades 5-12

B6 Standards Based Grading in the Secondary Classroom Tara Becker-Utess, Ingham Intermediate School District

I will describe the philosophy behind standards based grading and then delve into specific ways to make it work in your classroom.

B7 Desmos 201: Classroom Activities

Kevin Lawrence, Michigan State University

A continuation of Desmos 101, we will look at various Desmos classroom activities. Bring a device! Grades 9-12

SESSION D or LUNCH: 12:10–1:10 P.M.

D1 Using Assessment to Inform Instruction David Coffey, Grand Valley State University Kristin Frang, MAISD Regional Mathematics and Science Center

This session explores a partnership that brought together in-service and pre-service teachers for Math Recovery training. Participants will hear how teachers collaborated on math interventions and instruction. **Grades PreK-5**

D2 Student Centered Math

Wendy Gravelyn & Tracy Horodyski, Zinser Elementary Personalize math without taking over your personal life! We will share strategies that have a high impact on student learning (math talks, purposeful talk, collaboration, selfassessment, math workshop). Grades 3-5

D3 The Power of Powering

Ann Bingham, Berrien RESA Powering is the ability to identify those standards that focus on both core and tier 2 instruction. Participants will investigate the resources and protocols to support powering the CCSS for mathematics. Grades 3-5

D4 True Teamwork - Roles in Math Instruction Jeffery Schiller, Jean Baker, & Aaron Eling **Grand Haven Public Schools**

The reading of Dr. Jo Boaler's book Mathematical Mindsets caused a group of math teachers at White Pines Intermediate to rethink and rework how math teaching is accomplished from the ground up. This presentation will focus on how we have adopted the Complex Instruction model into an American style curriculum, what works for us, and how it has evolved as we have progressed.

Grades 3-8

D5 Stereotype Threat in Mathematics

Kathryn Coffey, Grand Valley State University

Engaging students with mathematics, especially algebra, is difficult. This interactive session focuses on stereotype threat and fixed mindset as potential barriers to engagement in mathematics, particularly for diverse learners.

Grades 6-16

Grades 9-12 D6 Make'em Think - High School level tasks and ideas you can implement on Monday

Zach Cresswell, Mt. Pleasant Public Schools

This session will be interactive, engaging and conversational. I'll share (and you'll do) some of my best precalculus, algebra II, and AP calculus tasks that help to develop mathematical thinkers! Grades 9-12

D7 Developing Mathematical Practices for AP Calculus (MPACs)

Mandy Forslund, Grand Valley State University

Participants will experience teaching strategies to develop the MPACs in students using two Free Response questions from the 2016 AP test and discuss how College Board's rubrics promote the MPACs. Grades 9-12

SESSION F: 2:30-3:30 P.M.

F1 Mathematical Practices at Play

Kathryn Coffey, Grand Valley State University Kaileigh Wenglikowski, Megan Reiley & Lauren Galasso, GVSU Students

The Mathematical Practices reflect what mathematicians do for work - and play. In this workshop, participants will explore how to support the development of young mathematicians Grades PreK-2 through play.

F2 Continuing the Keynote Conversation Tracy Zager, Stenhouse Publishers & Coach/Consultant

Interested in engaging in a discussion with Tracy Zager in a more intimate setting? Come discuss topics from the keynote presentation in greater depth with Tracy and other interested participants. Grades PreK-12

F3 Mathematical Learning through Fun Games with Online Materials and Instructional Videos

Karen Novotny, Grand Valley State University

Sabrina Fuggerson, Abbie Reed, Kara Plaggemars, Kaela Sakorafis, Madison Starr, & Chelsea VanderZwaag, GVSU Students

We will play some math games created by GVSU math majors. In addition, we'll share progress on our project to provide free online materials and instructional videos for those games. Grades 3-5

F4 Engineering Math into a Science Storyline Ruth Anne Hodges & Megan Schrauben Michigan Department of Education

Learn how to leverage the new science standards to teach important mathematics concepts. Presenters will share lesson planning tips to build integrated lessons that support both math and science learning. Grades 3-5

F5 Using Coding to Enhance Algebra Skills

Jim Licht, St. Clair RESA Mathematics and Science Center Bootstrap is a computer coding language designed by a math teacher to enhance Algebra Skills. Students use sound coding and math practice skills to create their own videogame. Grades 6-8

F6 Standards Based Grading at the High School Level Alyssa Boike, Charlotte High School

Learn how our math department transitioned to standards based grading. I will share our process, challenges faced, and lessons learned in addition to providing time to create and question.

F7 Panes in a Window

Jan Koop, Calvin College

Model a real-world problem, building windows of various shapes and several types of panes, to discover and represent patterns algebraically. The problems can be adapted to various grade levels. Grades 9-12