



Understanding Student Thinking Fostering Discourse Structures in the Classroom

Thursday, December 11, 2014
Olympia Resort & Conference Center, Oconomowoc, WI

TIME	DESCRIPTION
9:00	Welcome & Overview – <i>Michelle Parks, MPES Planning Committee Co-Chair - Mathematics & Science Consultant, CESA 10</i>
9:15	Engaging Students in Productive Mathematical Discourse – <i>William Barnes, Jennifer Novak and John SanGiovanni, Howard County Public School System, Ellicott City, Maryland</i> Mathematical discourse refers to the written and oral ways of representing, thinking, communicating, agreeing, and disagreeing that teachers and students use to engage in those tasks. (NCTM) In this session, teachers will develop a common understanding and effective strategies for engaging students in productive mathematical discourse as a means for developing student proficiency with the standards of mathematical practices.
10:30	Break
10:45	Facilitating Effective Classroom Discourse (Grades K-5) – <i>John SanGiovanni, Howard County Public School System</i> In this session, teachers will experience strategies for engaging students in effective mathematical discourse. Teachers will explore strategies to improve student learning while engaging students in the math practices. Resources will be shared.
	Facilitating Effective Classroom Discourse (Grades 6-8) – <i>William Barnes, Howard County Public School System</i> In this session, teachers will experience strategies for engaging students in effective mathematical discourse. Teachers will explore strategies to improve student learning while engaging students in the math practices. Resources will be shared.
	Facilitating Effective Classroom Discourse (Grades 9-12) – <i>Jennifer Novak, Howard County Public School System</i> In this session, teachers will experience strategies for engaging students in effective mathematical discourse. Teachers will explore strategies to improve student learning while engaging students in the math practices. Resources will be shared.
	Engaging Activities that Force Classroom Discourse (Administrators) – <i>Mark Schommer, DC Everest School District</i> Everyone knows that engaged students make for better learners. How can we incorporate engaging activities into the classroom? Where do we find them? What does instruction look like when we do? Let's find out together.
	Engaging Activities that Force Classroom Discourse (Administrators) – <i>Mark Schommer, DC Everest School District</i> Everyone knows that engaged students make for better learners. How can we incorporate engaging activities into the classroom? Where do we find them? What does instruction look like when we do? Let's find out together.

Breakout Sessions

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Lunch Keynote – Updates from DPI, WSMI & WI Rtl Center, *Diana Kasbaum, Wisconsin Department of Public Instruction, Paige Richards, Brookhill Institute of Mathematics and Sara Summ, Wisconsin Rtl Center*

During this session representatives from DPI, the Rtl Center and the Wisconsin Statewide Mathematics Initiative will share resources and professional development opportunities provided in our state. Gain some valuable information and enjoy networking with colleagues!

2:00

Building Productive Discourse through Math Talk (Grades K-5) – Karen Reiss, New Berlin School District

A number talk is a short, ongoing daily routine that provides students with meaningful daily practice with mental computation and promoting productive discourse in the mathematics classroom. Teachers who are successful at facilitating academically productive discussions draw on a toolkit of strategies that guide students to think and talk in new ways. This session will provide teachers with the skills and resources to make this shift in their practice. The practice of number talks is one of the most powerful vehicles for helping students learn to reason with numbers and make mathematically convincing arguments for building a solid foundation for algebraic reasoning, and or teaching mathematics as a sense making process.

Is That What You Really Mean? Clarifying Students' Thinking During Discussions (Grades 3-5) – Lori Williams, Manitowoc Public School District

Constructing viable arguments (SMP #3) is often dependent on using very precise mathematical language (SMP #6). Students in grades 3-5 must accurately describe their work in many different contexts and deal with all four operations. The incorporation of multiplication and division vocabulary with the addition and subtraction vocabulary learning in the primary grades may cause students difficulty. This session will focus on the teacher's role during whole class discussions that helps students increase the precision of their language and deepen their conceptual understanding.

Embedding the Practice Standards to Enhance Classroom Discourse in the Middle Grades (Grades 6-8) – Jennifer Kosiak, UW-La Crosse and Doug Burge, Holmen School District

This session will focus on recreating mathematical tasks by intentionally integrating one or more of the Standards for Mathematical Practice. With a focus on classroom discourse, we will provide the opportunity for participants to explore how to deepen classroom discourse through the process of creating tasks, anticipating and monitoring student thinking, and sequencing and connecting student strategies.

Collaborating or Cooperating? Listening for Discourse that Defines the Difference (Grades 9-12) – Lorna Vazquez and Tracy Frank, Mathematics Education Consultants

In this session we will distinguish between two types of discourse: cooperative and collaborative, both of which are necessary in the mathematics classroom. While cooperative discourse sets the stage, collaborative discourse allows for varied perspectives and skill sets to be shared, encourages freethinking and fosters productive argument. In this session you will explore the benefits to students' mathematical understanding and achievement that can occur when they are regularly engaged in collaborative conversations as we work through selected math problems that help to define the two types of discourse. Instructional strategies that help to move students in the direction of effective collaborative teams will be modeled and examples of how the Standards for Mathematical Practice are evident in classrooms where collaborative discourse is present will be shared.

Must Read Book Study of the Year - NCTM's Principles to Action (Administrators) – Mark Schommer, DC Everest School District

NCTM produced this resource in March of this year. Find out why it needs to be on the top of your reading pile and how best to present it to your faculty.

3:30

Evaluations & Adjourment

Breakout Sessions



Understanding Student Thinking Understanding the Process of Formative Assessment & Its Connection to SLOs

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9:00	Welcome & Overview – <i>Michelle Parks, MPES Planning Committee Co-Chair - Mathematics & Science Consultant, CESA 10</i>
9:15	Uncovering What Students Really Think and Know! – <i>Cheryl Tobey, Mathematics Education Consultant</i> The session will explore what it looks like and sounds like for students to have both procedural and conceptual understanding through the use of formative assessment probes. Participants will learn about, practice and discuss ideas for eliciting and interpreting student thinking and how to use the information to support students' reflective thinking.
10:30	Break
10:45	The Critical Role of Feedback (Grades K-5) – <i>Cheryl Tobey, Mathematics Education Consultant</i> The shared practice of reflecting on students' understanding in the context of clearly identified goals helps students learn to monitor their progress, receive feedback intended to promote further learning, and incorporate the feedback into subsequent work. Come learn about specific feedback techniques to facilitate this process.
Breakout Sessions	Unpacking the Standards with Formative Assessment in Mind (Grades 6-8) – <i>Cynthia Cuellar Rodriguez, Astrid Fossum, and Bernard Rahming, Milwaukee Public Schools</i> Join us to hear about our new work in MPS around formative assessment. Collaborate with colleagues to gain an understanding of how to adapt instruction based on formative assessment. This work will help you better understand the CCSS and your students' needs, as well as the connection between the formative assessment process and SLOs.
	Unpacking the Standards with Formative Assessment in Mind (Grades 9-12) – <i>Laura Maly and Mary Mooney, Milwaukee Public Schools</i> Join us to hear about our new work in MPS around formative assessment. Collaborate with colleagues to gain an understanding of how to adapt instruction based on formative assessment. This work will help you better understand the CCSS and your students' needs, as well as the connection between the formative assessment process and SLOs.
	Supporting Teachers in Facilitating Productive Math Discussions (Administrators) – <i>Lori Loehr, CESA 6</i> Productive mathematical discourse is vital to advancing student thinking. This session will highlight a model designed to improve teachers' ability to orchestrate discussions and the questions administrators can use to support teacher implementation of the model.

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Lunch Keynote – Fostering Student Growth in the Math Practices (Grades K-12), *William Barnes, Jennifer Novak and John SanGiovanni, Howard County Public School System, Ellicott City, Maryland*
The Standards for Mathematical Practices define the desired learning behaviors for mathematically proficient students. In this session, learn how one district designed tools, resources, and professional development focused on developing student fluency in the math practices. Learn how these efforts have been used to inform instruction, student learning, and teacher evaluation.

1:45

Break

2:00

Breakout Sessions

Measuring Growth in the Math Practices (Grades K-5) – *John SanGiovanni, Howard County Public School System*

In this engaging session, participants will explore the key student and teacher behaviors for each Mathematical Practice and how they can be used to develop and refine rubrics. Participants will learn how to use data tools to capture evidence and evaluate artifacts supporting the mathematical practices in action. Teachers will also learn of professional development efforts to support teachers' growth in this new era of reform.

Measuring Growth in the Math Practices (Grades 6-8) – *William Barnes, Howard County Public School System*

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Measuring Growth in the Math Practices (Grades 9-12) – *Jennifer Novak, Howard County Public School System*

In this engaging session, participants will explore the key student and teacher behaviors for each Mathematical Practice and how they can be used to develop and refine rubrics. Participants will learn how to use data tools to capture evidence and evaluate artifacts supporting the mathematical practices in action. Teachers will also learn of professional development efforts to support teachers' growth in this new era of reform.

Between Writing SLOs and Measuring SLOs: Elements of the Formative Assessment Centered Classroom (Administrators) – *Cheryl Tobey, Mathematics Education Consultant*

Come learn about and discuss mathematics specific implications for observing in a formative assessment centered classroom. Connections will be made to SBAC's components of formative assessment and the Danielson Framework for Teaching.

3:30

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