

Agenda

August 21–23 • Hortonville, WI

Monday, August 21

7:00–8:00 a.m.	Registration	Cafeteria
	Continental Breakfast	
8:00–9:45 a.m.	Keynote —Timothy D. Kanold <i>First Things First: Building a Solid Mathematics Foundation in a PLC at Work</i>	Auditorium
9:45–10:00 a.m.	Break	
10:00–11:30 a.m.	Breakouts	(See pages 3–4.)
11:30 a.m.–12:30 p.m.	Lunch (provided)	Cafeteria
12:30–2:00 p.m.	Breakouts	(See pages 3–4.)
2:00–2:15 p.m.	Break	
2:15–3:30 p.m.	Role-Alike Group Meetings <i>Educators can participate in an expert-facilitated conversation with others with similar responsibilities. Come ready to share successes and challenges, to discuss promising practices, and to find solutions to vexing issues about student learning.</i>	
	Elementary School	C210
	Middle School	C214
	High School	C217–218
	Building Administrators	Band Hall
	District Leaders	Choir Room
	Instructional Coaches and Department Chairs	Study Hall

Tuesday, August 22

7:00–8:00 a.m.	Registration	Cafeteria
	Continental Breakfast	
8:00–9:30 a.m.	Keynote —Sarah Schuhl <i>Linking the Work of Collaborative Teams to Student Learning</i>	Auditorium
9:30–9:45 a.m.	Break	
9:45–11:15 a.m.	Breakouts	(See pages 3–4.)
11:15 a.m.–12:15 p.m.	Lunch (provided)	Cafeteria
12:15–1:45 p.m.	Breakouts	(See pages 3–4.)
1:45–2:00 p.m.	Break	
2:00–3:00 p.m.	Team Time <i>A collaboration time for your team. Presenters are available for help in team discussions.</i>	Cafeteria

Wednesday, August 23

7:00–8:00 a.m.	Continental Breakfast	Cafeteria
8:00–9:30 a.m.	Breakouts	(See pages 3–4.)
9:30–9:45 a.m.	Break	
9:45–11:15 a.m.	Keynote —Juli K. Dixon <i>Five Essential Instructional Shifts for Supporting Rigorous Standards</i>	Auditorium

Breakouts at a Glance

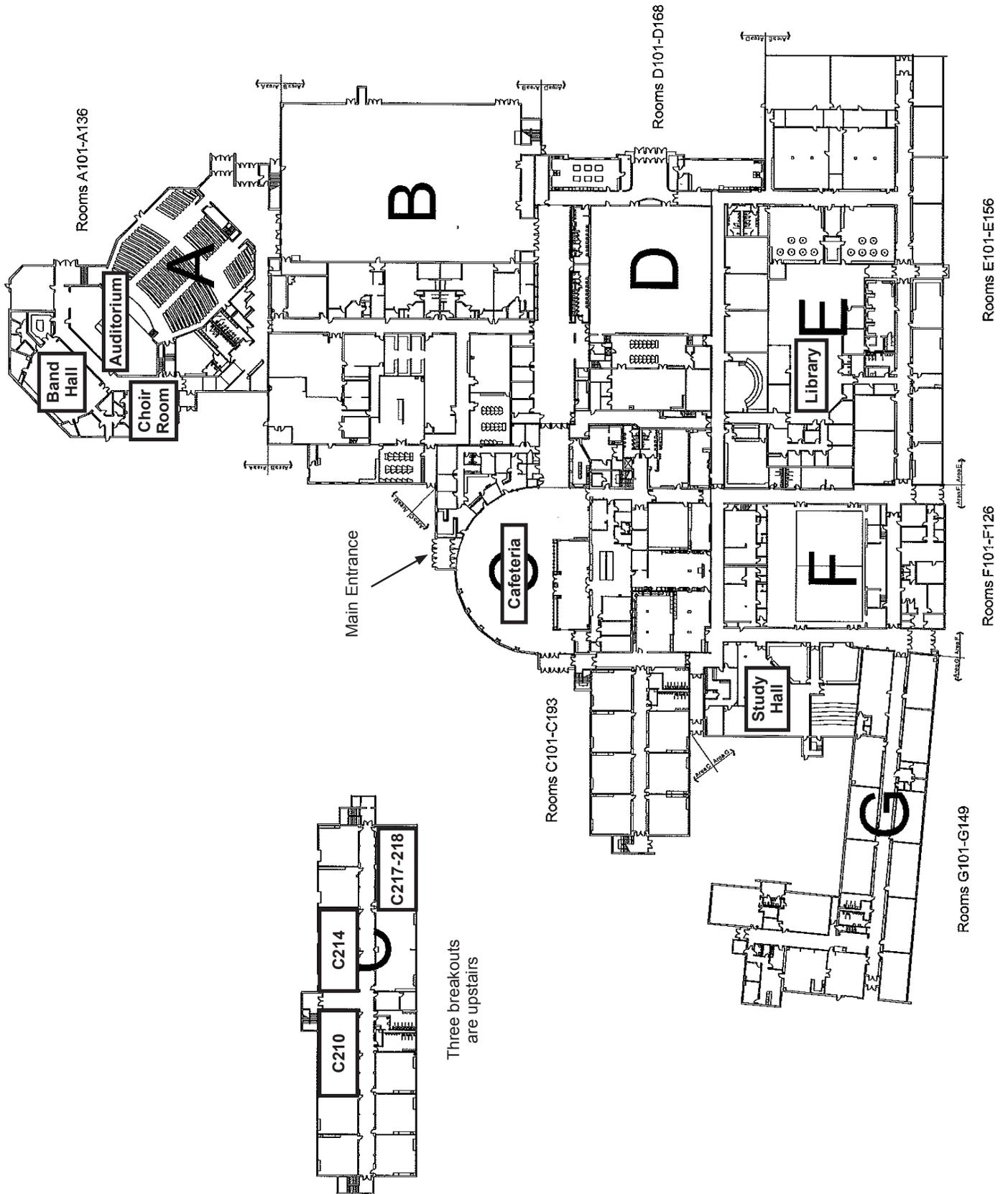
Presenter & Title	Monday, August 21		Tuesday, August 22		Wednesday, August 23
	10:00–11:30 a.m.	12:30–2:00 p.m.	9:45–11:15 a.m.	12:15–1:45 p.m.	8:00–9:30 a.m.
Kristopher Childs					
Making Sense of Mathematics for Teaching	C214				
Are Your Mathematics Classrooms Authentic or Compliant Environments?		C214			
Making Sense of Fraction Operations			C214		
Effectively Assessing Student Knowledge				C214	
Making Sense of a Rich Classroom Environment					C214
Jennifer Deinhart					
Identifying Essential Standards: Prioritizing Our Mathematics Curriculum	C210				
Developing Procedural Fluency Through Conceptual Understanding for Grades K–5		C210			
Developing Procedural Fluency Through Conceptual Understanding for Grades 6–8			C210		
Using High-Level Tasks to Engage Students in Productive Mathematics Discourse				C210	
Facilitating Mathematics Team Meetings Through Progress Monitoring					C210
Juli K. Dixon					
The Essential Flaw With the Essential Question (and How to Fix It!)			Band Hall		
Six Essential Expectations for Effective Mathematics Instruction				Band Hall	
Making Sense of Mathematics for Teaching With Your Collaborative Team: The TQE Process					Band Hall
Timothy D. Kanold					
Fighting for the C in PLC!	Choir Room				
Great High School Mathematics Instruction and Discourse		Choir Room			
Mathematics Homework and Grading in a PLC Culture			Choir Room		
Creating and Scoring Great Mathematics Assessments: Are Your Tests Any Good?				Choir Room	

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Jessica Kanold-McIntyre					
Using Technology to Support Formative Assessment in the Mathematics Classroom	Study Hall				
Effective Supervision of High-Quality Mathematics Instruction		Study Hall			
Creating High-Quality Assessments and Embedding Student Reflection			Study Hall		
Teacher Collaboration: Tools and Strategies to Support the Collaborative Process				Study Hall	
Improving Student Engagement Through Questioning and Task Selection					Study Hall
Sarah Schuhl					
When Content Isn't Enough: Strategies to Help Students <i>Really</i> Learn K–5 Mathematics	Library				
Lessons That Matter: Teaching Mathematics in Middle School		Library			
Quality Common Assessments in Your K–5 Classroom			Library		
Ensuring <i>All</i> Students Learn Mathematics				Library	
Effective Grading Practices: Solving the Grading–Learning Dilemma					Library
Mona Toncheff					
Designing Lessons to Engage Each Learner Every Day	C217–218				
Unstoppable Learning in Your PLC: Responding When Students Do Not Learn		C217–218			
High-Quality Assessment Processes That Engage Teachers and Students in the PLC Assessment Cycle			C217–218		
Building a Student-Centered Classroom				C217–218	
Leadership: The Four Keys to Successful K–12 Mathematics Programs					C217–218

Agenda is subject to change.

Hortonville High School



Key Concepts

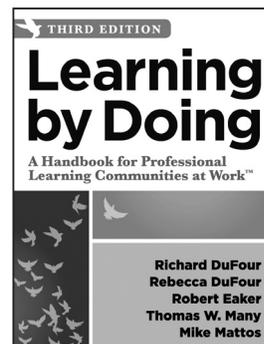
These key concepts are offered as a handy reference. Presenters refer to these concepts repeatedly in sessions. Please take a moment to become familiar.

Four Critical Questions of a PLC

Collaborative teams within schools that function as PLCs focus their work on the four critical questions:

1. What do students need to know and be able to do?
2. How will we know when they have learned it?
3. What will we do when they haven't learned it?
4. What will we do when they already know it?

The four critical questions are featured in *Learning by Doing: A Handbook for Professional Learning Communities at Work*, 3rd ed. (DuFour, DuFour, Eaker, Many, & Mattos, 2016).



High-Leverage Team Actions

Timothy D. Kanold developed 10 high-leverage team actions (HLTAs) that act as a core set of adult functions central to highly effective instruction and student learning success. HLTAs are aligned with the four critical questions of a PLC. They are organized by team actions that take place before the unit begins, during the unit, and after the unit ends.

Before the Unit

- HLTA 1. Making sense of the agreed-on essential learning standards (content and practices) and pacing
- HLTA 2. Identifying higher-level-cognitive-demand mathematical tasks
- HLTA 3. Developing common assessment instruments
- HLTA 4. Developing scoring rubrics and proficiency expectations for the common assessment instruments
- HLTA 5. Planning and using common homework assignments

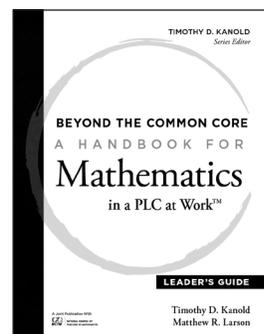
During the Unit

- HLTA 6. Using higher-level-cognitive-demand mathematical tasks effectively
- HLTA 7. Using in-class formative assessment processes effectively
- HLTA 8. Using a lesson-design process for lesson planning and collective team inquiry

After the Unit

- HLTA 9. Ensuring evidence-based student goal setting and action for the next unit of study
- HLTA 10. Ensuring evidence-based adult goal setting and action for the next unit of study

HLTAs are featured in *Beyond the Common Core: A Handbook for Mathematics in a PLC at Work* series, edited by Timothy D. Kanold (2015).



Key Concepts

NCTM's Mathematics Teaching Practices

NCTM established eight mathematics teaching practices that research indicates need to be consistent components of every mathematics lesson.

Teachers need to:

1. Establish mathematics goals to focus learning.
2. Implement tasks that promote reasoning and problem solving.
3. Use and connect mathematical representations.
4. Facilitate meaningful mathematical discourse.
5. Pose purposeful questions.
6. Build procedural fluency from conceptual understanding.
7. Support productive struggle in learning mathematics.
8. Elicit and use evidence of student thinking.



Mathematics teaching practices are featured in *Principles to Actions: Ensuring Mathematical Success for All* (2014), a guide of recommended, research-informed actions, based on NCTM's core principles and intended for administrators, teachers, and specialists of mathematics.

Standards for Mathematical Practice

The eight Standards for Mathematical Practice (also known as the Mathematical Practices) form the backbone for building understanding in mathematics.

According to the Common Core State Standards Initiative, the standards “describe varieties of expertise that mathematics educators at all levels should seek to develop in their students.” The Mathematical Practices are a combination of standards through NCTM and the National Research Council. Students who achieve Mathematical Practices can:

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.



The Mathematical Practices are available at www.corestandards.org/Math/Practice for printing and download.

Session Descriptions

Kristopher Childs

Making Sense of Mathematics for Teaching

To facilitate student thinking, teachers must deeply understand the mathematics they teach. Kristopher Childs explores baseline-level mathematics knowledge for teaching, as well as connections between content and the Mathematical Practices.

Dr. Childs shows how to develop mathematics as a focused, coherent, and rigorous subject. Participants gain insights to develop classroom environments conducive to student-centered instruction.

Key Concepts

Sessions apply key mathematical concepts. See concepts on pages 7–8:

- Four critical questions of a PLC
- High-leverage team actions
- NCTM's mathematics teaching practices
- Standards for Mathematical Practice (Mathematical Practices)

Are Your Mathematics Classrooms Authentic or Compliant Environments?

Kristopher Childs offers insight into classroom norms that support active student thinking. He presents video to highlight authentic classrooms as engaging, student-centered learning environments. This session outlines mathematics content teachers need to know to teach effectively. Dr. Childs helps participants develop collaborative teams that focus on content in ways that bring mathematics to life.

Making Sense of Fraction Operations

Teachers can develop students' fraction-operation sense by embedding operations in word problems. Through word problems, students can act out situations, use manipulatives, make drawings, and formulate mental images. In addition, students develop operation-sense when writing equations. When students use context, manipulatives, and visuals, they understand fraction-operation algorithms more deeply.

Kristopher Childs explores the concrete–representational–abstract sequence of instruction as it relates to fraction operations. He makes sense of fraction operations in rigorous standards and connects them to the Mathematical Practices.

Effectively Assessing Student Knowledge

To build student-centered learning environments, educators must teach concepts before procedures. Students need to deeply understand concepts before memorizing rote algorithms. Teachers can help students develop and showcase critical thinking skills through rich problem-solving tasks. Kristopher Childs explores formative assessment processes, and he addresses next steps for students who do and do not learn.

Making Sense of a Rich Classroom Environment

A key components of a rich classroom environment includes problem-solving tasks that engage students, allow multiple entry points, and challenge thinking. Kristopher Childs explores how teachers can support active student thinking. Regular communication between teachers and administrators is key to goal setting and receiving effective and efficient administrative support.

Session Descriptions

Jennifer Deinhart

Identifying Essential Standards: Prioritizing Our Mathematics Curriculum

In a PLC at Work, collaborative teams must identify essential standards within the mathematics curriculum. To implement a guaranteed and viable curriculum while providing systematic and targeted interventions, educators must determine which standards are most essential.

Jennifer Deinhart establishes criteria for identifying essential standards and prioritizes critical standards for high levels of learning. She makes sense of agreed-upon essential standards by examining content, determining best practices, and deciding unit pacing.

Developing Procedural Fluency Through Conceptual Understanding for Grades K–5

Procedural fluency—skill in carrying out arithmetic and algebraic procedures flexibly, accurately, and efficiently—is an important component of mathematical proficiency. It also reflects the first critical question of a PLC: What do students need to know and be able to do?

Many students fail to develop fluency despite best efforts. Connecting procedures to underlying concepts is essential. This session examines elementary school content progressions for ratio and proportional relationships that build procedural fluency from conceptual understanding. Jennifer Deinhart shows how teachers and collaborative teams identify tasks and strategies that aid in this work. Participants also discover common pitfalls to avoid.

Developing Procedural Fluency Through Conceptual Understanding for Grades 6–8

Procedural fluency—skill in carrying out arithmetic and algebraic procedures flexibly, accurately, and efficiently—is an important component of mathematical proficiency. It also reflects the first critical question of a PLC: What do students need to know and be able to do?

Many students fail to develop fluency despite best efforts. Connecting procedures to underlying concepts is essential. This session examines middle school content progressions for ratio and proportional relationships that build procedural fluency from conceptual understanding. Jennifer Deinhart shows how teachers and collaborative teams identify tasks and strategies that aid in this work. Participants also discover common pitfalls to avoid.

Using High-Level Tasks to Engage Students in Productive Mathematics

Teachers can facilitate rich discussions with students by engaging them in cognitively demanding tasks. Students also engage in the Mathematical Practices through high-level tasks. Jennifer Deinhart helps collaborative teams select tasks, design lessons, and include questions to guide students in productive discourse.

Jennifer shows how students can make sense of problems and persevere in solving them by constructing arguments and critiquing others' reasoning. Participants consider questioning and facilitating techniques that support productive discussion in the mathematics classroom.

Session Descriptions

Jennifer Deinhart

Facilitating Mathematics Team Meetings Through Progress Monitoring

In a PLC at Work, educators use common assessment results to answer the last two critical questions of learning: How will we respond when students do not learn? How will we extend the learning for students who have demonstrated proficiency?

Jennifer Deinhart explores meeting structures and data discussion protocols to help teams determine student needs, as well as to identify strengths and weaknesses within team practices for instruction. Teams reflect on collaborative time and consider plans of action.



Juli K. Dixon

Five Essential Instructional Shifts for Supporting Rigorous Standards

Juli K. Dixon explores five essential instructional shifts that emphasize the Mathematical Practices and the content they support. In this interactive session, participants learn how to support high-cognitive-demand tasks during instruction. Dr. Dixon uses authentic video from classrooms to enhance understanding of the shifts.

Dr. Dixon describes the five shifts as follows:

1. Students *provide* strategies rather than learning them from the teacher.
2. Teacher provides strategies “as if” from students.
3. Students create the context.
4. Students do the sense making.
5. Students talk to fellow students.

Participants make sense of the Mathematical Practices, unpacking norms and creating a shared image of classrooms where the focus is on student engagement in the practices.

The Essential Flaw With the Essential Question (and How to Fix It!)

By mandate, teacher instruction must support best practices in the classroom. The problem is mandates can inhibit student learning by conflicting with best practices. In this session, participants learn how posting an essential question at the start of a mathematics lesson might prevent students from developing conceptual understanding of rigorous standards. Participants explore alternative actions that help students understand and achieve learning goals.



= Keynote

Session Descriptions

Juli K. Dixon

Six Essential Expectations for Effective Mathematics Instruction

Effective administrators are the instructional leaders in their schools. Productive teacher leaders must know what to look for and promote in mathematics instruction. Juli K. Dixon presents six essential expectations for effective instruction that emphasize the Mathematical Practices and content to increase mastery for every learner:

1. Teaching with coherence
2. Leading with concepts
3. Staying focused
4. Emphasizing reasoning
5. Facilitating perseverance
6. Supporting practices

Participants create a shared image of classrooms where solid mathematics instruction is in place. Dr. Dixon helps them generate plans for targeted professional improvement.

Making Sense of Mathematics for Teaching With Your Collaborative Team: The TQE Process

Teachers must understand the mathematics they teach to support student achievement. This knowledge is best constructed within the collaborative team before a unit begins.

Juli K. Dixon explores how to use the TQE process—collecting tasks, questions, and evidence—during instruction to track student learning. TQE involves selecting tasks to support learning goals, using productive questioning to engage students in the Mathematical Practices, and applying formative assessments during instruction. Dr. Dixon shows video from classrooms to illustrate how a collaborative team establishes a shared image of rigorous mathematics instruction—and why it is imperative to achieve results.

In this interactive session, participants solve tasks as learners to make sense of mathematics. Dr. Dixon connects the TQE process to PLC at Work principles. She uses materials from her Solution Tree book series *Making Sense of Mathematics for Teaching* (2016) to exemplify these connections.

Session Descriptions



Timothy D. Kanold

First Things First: Building a Solid Mathematics Foundation in a PLC at Work

Timothy D. Kanold describes the foundational elements of a PLC at Work culture and the ongoing improvement journey for mathematics educators, leaders, and learners. This foundation is built on the four critical questions of a PLC that drive coherent, sustainable improvement for every school and district. Dr. Kanold unites PLCs with his idea of *heartprint*—the distinctive impression an educator’s heart leaves on students and colleagues during his or her professional career.

Four Critical Questions of a PLC

- What do students need to know and be able to do?
- How will we know when they have learned it?
- What will we do when they haven’t learned it?
- What will we do when they already know it?

Dr. Kanold shows participants how to align beliefs about student learning with the PLC process. As participants move from rhetoric to reality, they learn how to build a collaborative culture to promote continuous adult learning.

Fighting for the C in PLC!

When teachers commit to the PLC at Work process, they must answer what Timothy D. Kanold calls *heartprint* questions: Are you a person open to influence and shared values? Are you able to use relational intelligence to work interdependently with others? In short, can you contribute to your school community? These questions can be a struggle to address.

Based on *HEART! Fully Forming Your Professional Life as a Teacher and Leader* (2017), this session focuses on building community—how teachers honor the covenants of teams and temper self-interest. In doing so, they unleash their “unselfish gene,” but not to the point where they allow others to take advantage.

Dr. Kanold helps teachers cut through the noise of work and erase student-learning inequities caused by teachers’ isolated behaviors. As they push to improve their relational intelligence, teachers begin to treat students and colleagues with grace. Participants learn about the different styles of team members and which style is most successful, and take a comprehensive look at how helping others drives their success in a mathematics classroom.

Dr. Kanold reveals why the C in PLC is worth fighting for. *Community* is central to learning success!



= Keynote

Session Descriptions

Timothy D. Kanold

Great High School Mathematics Instruction and Discourse

Timothy D. Kanold explores how teachers and collaborative teams improve student proficiency daily by using well-organized, whole-group questioning and small-group discourse during the classroom formative assessment process.

By checking for understanding during lessons, teachers analyze student work and help students persevere through productive struggle. They also provide meaningful student feedback that inspires sustained effort in class every day.

Dr. Kanold shares *high-leverage team* actions that established his high school mathematics program as one of the top five nationally as rated by the U.S. Department of Education. This core set of actions, central to effective instruction and student success, include effectively using higher-level-cognitive-demand mathematical tasks and in-class formative assessment processes. (See list of HLTAs on page 7.)

This motivational and engaging presentation is based on *Beyond the Common Core: A Handbook for Mathematics in a PLC at Work, High School* (2015).

Mathematics Homework and Grading in a PLC Culture

Timothy D. Kanold shows how teachers and collaborative teams can help students complete homework at high levels and improve grading practices. In this session, based on the series *Beyond the Common Core: A Handbook for Mathematics in a PLC at Work* (2015), Dr. Kanold examines collaborative team actions regarding homework protocols and shows how to develop formative grading practices guaranteed to improve student motivation and learning for each unit of essential content.

Dr. Kanold highlights critical research-affirmed assessment decisions that can help students' mathematics results soar by planning and using effective common homework assignments and grading practices.

Creating and Scoring Great Mathematics Assessments: Are Your Tests Any Good?

Timothy D. Kanold shows how teachers and collaborative teams can help students perform at high levels on unit assessments. Based on the series *Beyond the Common Core: A Handbook for Mathematics in a PLC at Work* (2015), Dr. Kanold examines collaborative team actions regarding high-quality test protocols. As he states, "If I walked into your school and looked at your tests, how would we know if they are any good, and on what basis would we make that judgment?"

Dr. Kanold shows participants how to score and grade exams in ways guaranteed to improve student motivation and learning for each unit of essential content. Using *high-leverage team actions*—core actions central to effective instruction and student success, he illustrates how formative assessments can substantially increase results. (See list of HLTAs on page 7.)

Participants learn how to develop scoring rubrics and proficiency expectations for the common assessment instruments. They focus on planning and using common homework assignments. Finally, attendees learn how to build adult goals are based on evidence and plan actions for the next unit of study.

Session Descriptions

Jessica Kanold-McIntyre

Using Technology to Support Formative Assessment in the Mathematics Classroom

Are you having trouble finding meaningful ways to collect and use evidence of student learning as part of formative assessments? In this session, Jessica Kanold-McIntyre discusses apps and websites that support the assessment process.

Participants explore technology that helps mathematics teachers to identify student learning levels and to inform instructional decisions. As a result, educators have better ideas about tools to support discussion and engagement. Jessica offers participants practical ideas to implement in classrooms.

Effective Supervision of High-Quality Mathematics Instruction

Building or district leaders often ask, “What right actions support high-level instruction and assessment practices in my school or district?” Session participants explore the 10 *high-leverage team actions*—core actions central to effective instruction and student success as defined *Beyond the Common Core: A Handbook for Mathematics in a PLC at Work* (2015). (See list on page 7.)

Jessica Kanold-McIntyre shows how to engage administrators in high-leverage team actions that focus on quality instruction and assessment. Participants share strategies about monitoring teacher actions before, during, and after a unit of instruction. Finally, they discuss non-negotiable actions critical for promoting high-quality instruction and assessment. Educators focus on loose-tight relationships among teacher actions.

Creating High-Quality Assessments and Embedding Student Reflection

How do teachers evaluate the quality of assessments? Jessica Kanold-McIntyre focuses on criteria to build high-quality assessments. She reflects on common scoring rubrics to support teacher reflection and equity across classrooms. As a part of the assessment process, students must be able to respond to teacher feedback. Session participants explore ideas to inspire students to reflect on their learning and set goals for continuous improvement.

Teacher Collaboration: Tools and Strategies to Support the Collaborative Process

Collaboration is at the heart of high-functioning teams. Jessica Kanold-McIntyre facilitates a discussion about strategies and tools to organize and support the collaborative process. She presents models to help teams organize common assessments, lessons, and tasks while establishing protocols for reflecting on unit assessment within a PLC. Participants examine how technology can support student collaboration within and outside the classroom.

Improving Student Engagement Through Questioning and Task Selection

How many teachers have asked students a question only to have them all stare back in awkward silence? Or, when teachers ask questions they get one-word responses? This session explores the power of questioning within a lesson, specifically when implementing a higher-level task.

Jessica Kanold-McIntyre focuses on questioning strategies that support student-to-student discourse and promote perseverance through a rigorous task. Participants learn how to use high-cognitive-demand tasks to support student discourse, engagement, and persistence. They also learn strategies to facilitate whole-group discourse.

Session Descriptions



Sarah Schuhl

Linking the Work of Collaborative Teams to Student Learning

Collaborative teams work to link instruction, assessment, and student re-engagement to ensure all students learn mathematics. But how do teachers apply the four critical questions of a PLC to form these links? How do teams address each question as they grow teacher and student learning? The work can seem daunting without a road map for creating materials and responding to gathered data.

Sarah Schuhl helps participants understand the work of an effective collaborative team focused on student learning. She shows how to build plans for organizing standards to guide teams. Participants learn how to analyze data from common assessments and respond to student learning as a team.

When Content Isn't Enough: Strategies to Help Students *Really* Learn K–5 Mathematics

Sarah Schuhl explores ways to engage students using strategies focused on the Standards for Mathematical Practice. How can student knowledge be deepened through inferences, multiple representations, or strategies to solve tasks? Which literacy strategies might also be effective in teaching mathematics? Participants determine key elements of lesson design to meet the learning needs of all elementary-level mathematics students.

Lessons That Matter: Teaching Mathematics in Middle School

Sarah Schuhl explores ways to engage students using strategies that focus on the Standards for Mathematical Practice and NCTM's mathematics teaching practices. (See both on page 8.) How can student knowledge deepen through discourse, multiple representations, and problem solving? How can teachers incorporate these actions in daily lessons to engage all students in learning? Sarah helps participants determine key elements of lesson design to meet the needs of all middle school mathematics students.

Quality Common Assessments in Your K–5 Classroom

Next-generation assessments reflect critical thinking required of elementary-level mathematics students. Yet key questions arise. How do teachers ensure students meet learning expectations? How are students involved in the process? How do they use self-assessments as learning tools?

Sarah Schuhl explores how collaborative teams create balanced assessment systems to prepare all elementary-level students for mathematics success. Participants learn criteria essential to quality assessment design, and they understand the balance between formative and common assessment processes.



Session Descriptions

Sarah Schuhl

Ensuring *All* Students Learn Mathematics

Learning mathematics at high levels enables students to logically reason, advance to the next grade level or course, and become college and career ready. Unfortunately, too many students struggle to learn content from one year to the next. How do teachers collaborate to ensure all students learn mathematics? How do they plan for core instruction and match interventions to the mathematics skills students struggle to learn?

The use of essential standards, instructional practices, and common formative assessments play a critical role in accelerating and continuing learning for mathematics students.

Session participants learn how to determine essential content standards and prerequisite skills to assess through common formative assessments. They identify higher-level mathematical tasks to use as formative feedback during instruction, and explore how to remediate and intervene when students struggle to learn.

Effective Grading Practices: Solving the Grading–Learning Dilemma

Teachers use grades to report learning on report cards and assessments or about classroom activities. Essential questions about grading exist: How do grades align with student learning? What is the purpose of each grade? Who uses this information?

As instructional and assessment practices shift to meet rigorous standards, grades too often are an afterthought that muddy accurate reports of student learning. Session participants learn what to consider when grading and reporting mathematical learning.

Sarah Schuhl helps educators understand challenges surrounding traditional grading practices. They explore grading practices that share accurate, useful information. Finally, they discover how to use grading protocols to deepen collective responses to learning.

Mona Toncheff

Designing Lessons to Engage Each Learner Everyday

How do high school teachers and teams connect content, mathematical habits of mind, and NCTM's eight mathematical teaching practices? (See list of practices on page 8.) How do educators close the gap between intended and enacted curricula?

Intentional lesson design is the key to unlocking these questions. Lessons that develop rich and meaningful mathematics must provide access, build interest, inspire learning, and engage every student.

Mona Toncheff explores tools and strategies collaborative teams, school site leaders, and district leaders use to create compelling and engaging lessons. Session participants learn critical components for quality lesson design and investigate using high-level tasks during instruction.

Session Descriptions

Mona Toncheff

Unstoppable Learning in Your PLC: Responding When Students Do Not Learn

When students struggle to learn grade-level mathematics or in a course, how should teams collectively respond? Teams must work together to answer the third critical question of a PLC: What will we do when students haven't learned?

Mona Toncheff reveals leadership and instructional processes to ensure learning for every student. Participants address ways to implement rigorous content standards while developing mathematical habits of mind. Mona emphasizes ways for teams to develop ownership in their students' success.

Participants reflect on stumbling blocks and victories related to helping students learn. They explore collective response strategies to student learning before, during, and after a unit of instruction. Finally, they create a plan of action to build a collective response.

High-Quality Assessment Processes That Engage Teachers and Students in the PLC Assessment Cycle

High-quality assessments provide teachers and students evidence of learning content and process standards. Mona Toncheff helps participants discover processes that use focused, high-quality assessments aligned to the coherent and rigorous new standards. Participants analyze student work to learn how to guide further instruction.

Participants learn the work collaborative teacher teams do to establish an assessment process before, during, and after each unit. They focus on developing assessments that engage and motivate learners.

Building a Student-Centered Classroom

How do teachers build rich and meaningful discussions into daily lesson design? How do educators transition from more than 30 individual students to a community of learners who support each other in the learning process?

Mona Toncheff examines strategies for *visible thinking*—a broad and flexible framework to enrich classroom learning in the content areas and foster students' intellectual development. Through this process, students learn to defend their thinking and constructively critique others' thinking.

Session participants identify how to build a culture that promotes student collaboration. Mona shares the four core factors of a student-centered classroom. Finally, attendees analyze strategies to engage every student in daily mathematics conversations.

Session Descriptions

Mona Toncheff

Leadership: The Four Keys to Successful K–12 Mathematics Programs

Teacher leaders manage daily demands that pull people in many directions. How do educators know these directions provide supportive conditions for instructional change and improved student achievement? Mona Toncheff investigates four keys of mathematics leadership. Leaders at all levels collaborate to examine tools and resources to improve mathematics teaching and learning, build leadership capacity, and empower students and families as equal partners.

Participants in this session identify visions for teaching and learning mathematics. They analyze gaps between vision and reality to inform next steps. Finally, they learn how to design and nurture leadership structures essential for exemplary mathematics programming in schools, districts, or states.