

Day 1 Agenda

Instruction and Tasks

Turning Your Mathematics at Work™ Vision Into Action

“A core research finding across specific topics is that conceptual understanding facilitates the acquisition of procedural fluency. ... This progression—conceptual understanding to informal strategies to fluency—poses a significant paradigm shift in teaching mathematics for some teachers.”

—**Kanold, Briars, & Fennell**, *What Principals Need to Know About Teaching and Learning Mathematics* (2012)

“Seeing themselves as partners with other teachers, they are dedicated to improving the profession. They care about the quality of teaching in their schools, and, to this end, their collaboration with colleagues is continuous and explicit. They recognize that collaborating in a professional learning community contributes to their own professional growth, as well as to the growth of their peers, for the benefit of student learning.”

—**National Board for Professional Teaching Standards**, *Mathematics Standards for Teachers of Students Ages 11–18+* (2010), p. 75

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| 7:00–8:00 a.m. | Registration, continental breakfast |
| 8:00–8:45 a.m. | <p>Setting the Stage
 <i>Attendees are introduced to key elements of Mathematics at Work™, as well as the ten high-leverage team actions and protocols that set the stage for learning.</i>
 <i>Timothy D. Kanold</i></p> |
| 8:45–10:00 a.m. | <p>Keynote—<i>Beyond the Common Core: Great Mathematics Instruction Every Day, Every Lesson, Every Unit</i>
 <i>Sarah Schuhl</i></p> |
| 10:00–10:15 a.m. | Break and transition |
| 10:15 a.m.–12:00 p.m. | <p>Breakout—Great Mathematics Content, Tasks, and Use of Formative Assessment Practices as Part of Daily Lesson and Unit Design (Part 1)</p> <ul style="list-style-type: none"> • <i>Sarah Schuhl</i> (Grades K–5) • <i>Timothy D. Kanold</i> (Grades 6–12) |
| 12:00–1:30 p.m. | Lunch (on your own) |
| 1:30–2:45 p.m.
(Break Included) | <p>Breakout—Great Mathematics Content, Tasks, and Use of Formative Assessment Practices as Part of Daily Lesson and Unit Design (Part 2)</p> <ul style="list-style-type: none"> • <i>Sarah Schuhl</i> (Grades K–5) • <i>Timothy D. Kanold</i> (Grades 6–12) |
| 2:45–4:00 p.m. | <p>Evaluation and Check-in
 <i>Presenters engage in Q&A and request a brief first-day evaluation.</i></p> |

Day 2 Agenda

Assessment and Tasks

Turning Your Mathematics at Work™ Vision Into Action

“My role as a teacher is to evaluate the effect I have on my students. It is to ‘know thy impact’, it is to understand this impact, and it is to act on this knowing and understanding. This requires that teachers gather defensible and dependable evidence from many sources, and hold collaborative discussions with colleagues and students...”

—Hattie, *Visible Learning for Teachers: Maximizing Impact on Learning* (2012)

7:00–8:00 a.m.	Continental breakfast
8:00–8:15 a.m.	Welcome and Day 1 Reflections <i>Timothy D. Kanold</i>
8:15–9:30 a.m.	Keynote — <i>What Will Be Your Teaching Inspiration Story?</i> <i>Timothy D. Kanold</i>
9:30–9:45 a.m.	Break and transition
9:45 a.m.–12:00 p.m.	Breakout —Great Mathematics Content, Tasks, and Assessment Design: Teacher Team Practices for Daily Unit Homework and Assessment Processes—Answering the question: What will be our response when students do not learn? (Part 1) <ul style="list-style-type: none">• Sarah Schuhl (Grades K–5)• Timothy D. Kanold (Grades 6–12)
12:00–1:30 p.m.	Lunch (on your own)
1:30–3:30 p.m. (Break Included)	Breakout —Great Mathematics Content, Tasks, and Assessment Design: Teacher Team Practices for Daily Unit Homework and Assessment Processes—Answering the question: What will be our response when students do not learn? (Part 2) <ul style="list-style-type: none">• Sarah Schuhl (Grades K–5)• Timothy D. Kanold (Grades 6–12)
3:30–4:00 p.m.	Closing Session, Evaluation, and Next Steps <i>Presenters work with participants as they discuss and share priorities for next steps and plans for action.</i>

Agenda and presenters are subject to change.

Session Descriptions: Day 1



Beyond the Common Core: Great Mathematics Instruction Every Day, Every Lesson, Every Unit Sarah Schuhl

Sarah Schuhl offers tools and insights that support content standards, mathematical tasks, and process standards for how students learn. She also focuses on instructional thinking protocols for collaborative teams *before* and *during* a unit of instruction. Developing student growth and understanding of mathematics content is imperative for any grade level or course. In this motivational session, Sarah helps educators examine tools for establishing prerequisites for standards, as well as selecting tasks that support them. By building classrooms that support student engagement with mathematical practices and processes, teachers can significantly impact student learning.

Key Vocabulary

High-leverage team action (HTLA): a core set of adult actions central to highly effective instruction or student learning success

Great Mathematics Content, Tasks, and Use of Formative Assessment Practices as Part of Daily Lesson and Unit Design (Parts 1 & 2)

Sarah Schuhl (Grades K–5), Timothy D. Kanold (Grades 6–12)

In the modern view of professional development for mathematics teachers, it is critical to build knowledge capacity. More importantly, teachers and colleagues must intentionally act on that knowledge and transfer professional development into daily classroom design and practice.

In their respective sessions, Ms. Schuhl and Dr. Kanold unfold five of ten high-leverage team actions (HLTAs) from *Beyond the Common Core*, a series for grade-level or course-based PLC collaborative teams. This session introduces high-leverage team actions that focus on the daily preparation and delivery of highly effective mathematics lessons with the use of formative assessment in the classroom.

HLTA 1.	Making sense of agreed-upon essential learning standards related to content and practices
HLTA 2.	Identifying higher-level-cognitive-demand mathematical tasks (procedures where students engage in complex reasoning, analyzing, and problem solving)
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



= Keynote

Accomplished teachers structure opportunities for students to work together, and most especially to talk and write about mathematics as part of reasoning and problem solving. As students collaborate in teams to explain their thinking, they deepen their mathematical understanding in powerful ways that can enhance their ability to learn mathematics. Dr. Kanold dedicates this session to helping teachers and teams become great at including these elements of lesson design into their classrooms.

“The new paradigm for the professional development of mathematics teachers requires an understanding that the knowledge capacity of every teacher matters. More importantly, however, is that every teacher acts on that knowledge and transfers the professional development that he or she receives into his or her daily classroom practice.”

—**Kanold & Larson**, *Beyond the Common Core: A Handbook for Mathematics, Leader’s Guide* (2015), p. 127

Collaborative teamwork through collective inquiry or building shared knowledge is difficult and given less attention. However, research shows that together with experimentation and action orientation (a team’s ability to work proactively), collaborative teamwork is more effective than working in isolation. Teamwork more directly impacts student learning and helps reduce traditional achievement gaps. Inquiry and experimentation flourish for schools committed to the Mathematics at Work™ process, allowing teachers to find meaning in collaborative work with colleagues.

Session Descriptions: Day 2



What Will Be Your Teaching Inspiration Story?

Timothy D. Kanold

Dr. Kanold supports teachers and teacher teams in helping students grow and understand mathematics content while fully tapping formative assessment processes.

He asks: What does it mean for K–12 teachers to be assessment literate? Do our assessment actions motivate or destroy the will of students to learn?

Dr. Kanold provides protocols, tools, and insights into the development of high-quality assessments as he explores teacher team responses to the PLC critical question: How do we know if students know what we want them to learn?

He examines the critical role in student and teacher responses to other PLC critical questions: What are student and teacher responses when students do not learn? How do students and teachers respond when students have learned or already know it?

Key Vocabulary

High-leverage team action (HTLA): a core set of adult actions central to highly effective instruction or student learning success

Great Mathematics Content, Tasks, and Assessment Design: Teacher Team Practices for Daily Unit Homework and Assessment Processes—Answering the question: What will be our response when students do not learn? (Parts 1 & 2)

Sarah Schuhl (Grades K–5); Timothy D. Kanold (Grades 6–12)

In *Beyond the Common Core, Grades K–5*, the process of creating common assessment instruments is described as one that “supports learning conversations about prerequisite concepts and skills, common student errors, and ways of assessing students’ understanding of the essential learning standards” (2015, p. 33).

After the unit of instruction is over and the common assessment is completed, students are expected to reflect on their work results. It is a period of reflection for teachers as well. As they return scored tests with feedback, teachers may ask: Now what? What are students to do? What am I to do? What is our collaborative team to do?

In their respective sessions, Ms. Schuhl and Dr. Kanold show attendees how to use unit assessment instruments as formative feedback to advance student learning of essential standards. The presenters use their teaching from the *Beyond the Common Core* handbooks to present or further unfold high-leverage team actions (HLTAs) that focus on the daily preparation and delivery of highly effective assessment practices in each lesson throughout the unit.



= Keynote

HLTA 3.	Developing high-quality common assessment instruments
HLTA 4.	Creating effective and collaborative scoring rubrics for assessment instruments
HLTA 5.	Planning and using effective common homework (independent practice) assignments
HLTA 9.	Ensuring evidence-based student goal setting and action for the next unit of study
HLTA10.	Ensuring evidence-based adult goal setting and action for the next unit of study

In their groundbreaking book *Great by Choice* (2011), Jim Collins and Morten T. Hansen ask, “Do we really believe that our actions count for little, that those who create something great are merely lucky, that our circumstances imprison us?” They answer, “Our research stands firmly against this view. ... Greatness is not primarily a matter of circumstance; greatness is first and foremost a matter of conscious choice and discipline.”