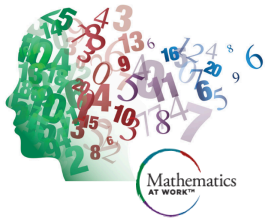
Mathematics at Work™ Workshop Focus

Achieving excellence in mathematics teaching and learning begins by understanding the importance of the thousands of **instruction** and **assessment** decisions teachers and teams make unit by unit every year. This interactive and collaborative PreK–12 workshop is led by nationally known thought leaders and practitioners with firsthand experience in those decisions: **Sarah Schuhl,** and **Mona Toncheff**.



Teachers begin this workshop by focusing on their mathematics instruction story. It is a story about *daily choices* and *routines*. The choice to balance higher- and lower-level-cognitive-demand tasks for the essential learning standards. The choice of strategies to teach each mathematics content and process standard. The choice to balance student discourse during each lesson. The choice to determine how each lesson should begin and end. On any given day, teachers juggle myriad choices while also planning for tomorrow.

Teachers and teams focus on mathematics assessment, intervention, homework, and grading practices to frame and strengthen instruction that leads to grade- or course-level student learning. Presenters offer tools, discussion protocols, and knowledge to help teachers create formative student feedback processes as part of a collaborative mathematics team's work.

The *Every Student Can Learn Mathematics* series (2018, 2023) from series editor, Timothy D. Kanold, and lead authors Sarah Schuhl and Mona Toncheff provide foundational team actions that are addressed during this workshop. (**See sidebar**.) These team actions emphasize teachers working collaboratively unit by unit to reflect and take action on the right work.

Throughout the workshop, practical strategies for teachers and teams to readily implement are shared. Each day starts with a keynote and then sessions are separated into PreK–5 and 6–12 grade bands to better address the student learning of each.

Teacher Team Actions

Team action 1: Develop high-quality common assessments for the agreed-on essential learning standards.

Team action 2: Analyze and use common assessments for formative student learning and intervention.

Team action 3: Develop high-quality mathematics lessons for daily instruction.

Team action 4: Analyze and use effective lesson-design elements to provide formative feedback and build student perseverance.

Team action 5: Develop and use high-quality common grading components and formative grading routines.

Coach Actions

Coaching action 1: Develop PLC structures for effective teacher team engagement, transparency, and action.

Coaching action 2: Use common assessments and lesson-design elements for teacher team reflection, data analysis, and subsequent action.

Day 1 Agenda

Mathematics Instruction and Tasks

Every PreK–12 Student Can Learn Mathematics

> "Helping students persevere and discover meaning during a mathematics lesson as part of a formative process for learning is where the most impactful work of your actual teaching and student learning and meaning is located."
>
> —**Toncheff, M., & Kanold, T. D., et al.** (2023). *Mathematics Instruction and Tasks in a PLC at Work* (2nd ed.), p. xii

7:00–8:00 a.m.—Registration and Continental Breakfast

Welcome and Setting the Stage

Participants examine the agenda for the two days, the expectations and norms for the workshop, and the digital library Padlet link of resources to be provided.

Sarah Schuhl and Mona Toncheff

Keynote—*Every Day for Every Student: Mathematics Lessons That Matter*

Mona Toncheff

Break and transition

Breakout—*Essential Elements of Daily Lesson Design Focused on Every Student Learning Mathematics (Part 1)*

Mona Toncheff (Grades PreK–5)
Sarah Schuhl (Grades 6–12)

Lunch

Breakout—*Essential Elements of Daily Lesson Design Focused on Every Student Learning Mathematics (Part 2)*

Mona Toncheff (Grades PreK–5)
Sarah Schuhl (Grades 6–12)

Day 2 Agenda

Mathematics Assessment and Intervention

Every PreK–12 Student Can Learn Mathematics

> "The collaborative team becomes the engine that drives the PLC at Work process forward with a positive and ongoing analysis of student data based on the evidence of student learning" (xii).
>
> "Essentially, you minimize the wide variance in student expectations between you and your colleagues (an inequity creator) when you work collaboratively to design high-quality assessment instruments appropriate to the identified essential learning standards for the unit" (p. 6).
>
> —**Schuhl, S., & Kanold, T. D., et al.** (2023). *Mathematics Assessment and Intervention in a PLC at Work* (2nd ed.)

7:00–8:00 a.m.—Continental Breakfast

Welcome and Day 1 Reflections

Sarah Schuhl and Mona Toncheff

Keynote—*Assessing to Learn: Teams, Teachers, and Students*

Sarah Schuhl

Break and transition

Breakout—*High-Quality Mathematics Common Assessments: Teacher and Student Actions Required for Every Student to Learn (Part 1)*

Mona Toncheff (Grades PreK–5)
Sarah Schuhl (Grades 6–12)

Lunch

Breakout—*High-Quality Mathematics Common Assessments: Teacher and Student Actions Required for Every Student to Learn (Part 2)*

Mona Toncheff (Grades PreK–5)
Sarah Schuhl (Grades 6–12)

Closing Session, Evaluation, and Next Steps

Presenters work with participants to discuss and share priorities for next steps and plans for action.

Session Descriptions—Day 1

Every Day for Every Student: Mathematics Lessons That Matter
Jennifer Deinhart, Sarah Schuhl, or *Mona Toncheff*

In a PLC culture, collaborative teacher teams build shared understanding of mathematics content and process standards for each grade level or course. Teachers determine connections students need to make from one year or unit to the next and identify meaningful tasks for student engagement and learning. How does this professional work translate into effective lessons that engage each learner every day?

Resources from *Mathematics Instruction and Tasks in a PLC at Work, 2nd edition* (provided) introduce six essential elements of lesson design and help participants reflect on current and future instructional practices.

Participants understand the *why* of each lesson and explore a classroom culture necessary to create an environment of learning. Educators examine tools, protocols, and tasks to grow a deeper understanding of how intentional lesson design impacts student learning at all levels.

Essential Elements of Daily Lesson Design Focused on Every Student Learning Mathematics (Parts 1 and 2)
Mona Toncheff (Grades PreK–5)
Sarah Schuhl (Grades 6–12)

Instruction in the classroom is critical to student learning. Throughout the day, teachers and teams explore the six essential elements of lesson design in more detail. They experience routines and share best practices with opportunities to immediately transfer the learning to the classroom in upcoming instructional units. Teachers and teams explore how to accelerate student learning to grade level and above through intentional tasks aligned to essential standards, and learn strategies designed to actively engage students in lessons and grow student reasoning and problem solving.

Participants and teams learn to design and deliver highly effective research-affirmed mathematics lessons using a formative assessment and feedback process steeped in routines. They use tools and protocols to *reflect* on current practices, *refine* daily planning decisions for each mathematics lesson (with a focus on student perseverance, balanced student discourse, and tasks), and then *act* on that knowledge to design more effective lessons daily.

Session Descriptions—Day 2

Assessing to Learn: Teams, Teachers, and Students
Sarah Schuhl

Explore the power of mathematics common assessments when they are designed for team, teacher, and student continued learning. Too often, assessments are used solely as a tool to record a grade. Common assessments at their best, however, reveal strengths in student reasoning and instructional practices, along with insights into instructional next steps for students in a classroom or across an entire team. When used formatively, assessments become part of a student's learning story and offer ideas to teachers and teams for targeted and specific interventions and extensions. Explore keys to using common assessments formatively to grow teacher collective efficacy and accelerate student learning to grade- or course-level and beyond.

High-Quality Mathematics Common Assessments: Teacher and Student Actions Required for
Every Student to Learn (Parts 1 and 2)
Mona Toncheff (Grades PreK–5)
Sarah Schuhl (Grades 6–12)

When mathematics teachers create and score common assessments *together*, they build shared understanding of each essential standard's intent, and they define student proficiency. In doing so, teachers create equity in teaching and learning experiences across PreK–12 classrooms.

High-quality common mathematics assessments, along with scoring and teacher feedback on assessments, enhance or limit a student's desire to learn. Effective mathematics assessment and intervention are part of a formative process for student learning. Yet questions arise: What do teachers and students do with the results of those common unit mathematics assessments? Have assessments been accurately scored? What happens when assessments are passed back to students? How are students required to reflect on essential standards learned versus those not learned *yet*? How do mathematics teachers use evidence of student learning to impact their instructional decisions for the next unit of study?

Presenters use tools from *Mathematics Assessment and Intervention in a PLC at Work,* 2nd edition (2023) to help teachers and teams *reflect* on current practice, *refine* assessments, learn routines for feedback, and explore strategies for analyzing student learning from assessments to design effective team re-engagement learning opportunities. Additional topics such as homework, grading, and unit design may be explored as needed.