Math Solutions
FOUNDED BY MARILYN BURNS

Math Solutions Professional Learning

**AGENDA**

## *Do The Math: Fractions*

**OVERVIEW**

This course prepares participants to develop students' essential understanding of fractions, and strengthens their own fraction sense and ability to meaningfully compare, add, and subtract fractions. Participants gain confidence in the progression of learning in the modules and value the importance of fidelity to the program. They explore the Instructional Practices Inventory and consider how it can elevate their instructional decisions.

**OUTCOMES**

- Articulate key concepts and strategies from the fraction modules.
- Use designated strategies to support students' ability to reason and make sense of essential fraction understandings.
- Make learning experiences accessible to all students without compromising the rigor in the lessons.
- Utilize the Instructional Practices Inventory to reflect on effective *Do The Math* instruction.

Day 1

**Opening**

The opening includes introductions, goals, and establishes learning agreements. Participants review test items to discuss common misconceptions.

**Forming Essential Understanding of Fractions**

Lessons utilizing the fraction kit to represent fractions provide opportunities for students to think about equivalence, comparing, ordering, and representing fractions. Participants build their own fraction kit and discuss how to maximize students' experiences with the fraction kit.

***BREAK***

**Meaningful Practice Through Games**

Participants experience the fraction kit game *Uncover* and reference the Instructional Practices Inventory to deepen their understanding of the teacher's role in maximizing learning opportunities with games.

***LUNCH***

**Comparing Fractions**
This session introduces the six strategies that comprise the *Comparing Fractions Toolkit*. These strategies contribute to students' fraction sense because they keep the instructional focus on the meanings of fractions rather than on applying a rule for converting to common denominators.

***BREAK***

**Adding and Subtraction Fractions**
Participants review and discuss test items and student work samples to consider common misconceptions with addition and subtraction of fractions. They develop equivalent fraction sequences and follow the lesson progression to use the sequences to add and subtract fractions.

**Closing**
Participants take time to reflect on the experiences of the day and ways that these experiences will impact their classroom instruction. In addition, participants draw upon the expertise of colleagues and discuss possible solutions for common instructional scenarios with *Do The Math*. Participants will complete the evaluation form.



**Math Solutions Guiding Principles**
Drawing upon academic work and our own classroom-grounded research and experience, Math Solutions has identified the following four instructional needs as absolutely essential to improving instruction and student outcomes:

- Robust Content Knowledge
- Understanding of How Students Learn
- Insight into Individual Learners through Formative Assessment
- Effective Instructional Strategies

These four instructional needs drive the design of all Math Solutions courses, consulting, and coaching. We consider them our guiding principles and strive to ensure that all educators:

- Know the math they need to teach—know it deeply and flexibly enough to understand various solution paths and students' reasoning.
- Understand the conditions necessary for learning, what they need to provide, and what students must make sense of for themselves.
- Recognize each student's strengths and weaknesses, content knowledge, reasoning strategies, and misconceptions.

- Have the expertise to make math accessible for all students, to ask questions that reveal and build understanding, and to help students make sense of and solve problems.