Math Solutions
FOUNDED BY MARILYN BURNS

Math Solutions Professional Learning

AGENDA

Do The Math: Addition and Subtraction

OVERVIEW

This course deepens participants' understanding of addition and subtraction concepts and the *Do The Math* methodology. Participants gain familiarity with lessons and increase their confidence in the use of the eight instructional principles. They explore the Instructional Practices Inventory and consider how it can elevate instructional decisions.

OUTCOMES

- Articulate key concepts and strategies from the addition and subtraction modules.
- Support students' ability to make sense of addition and subtraction concepts, solve problems, reason, and use appropriate tools.
- 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 student work samples to discuss common misconceptions about addition and subtraction.

Building Place Value Understanding

The careful scaffolding that intervention students need to understand and be successful with mathematics requires educators to carefully consider the complexity and layers of concepts. In this session, participants connect work with the ten-frame to a hundred-frame and the hundred pocket chart. Using these tools, they investigate the importance of developing a strong understanding of ten.

BREAK

Exploring Addition

Participants continue exploring the learning progression in Module A. Addition strategies build on place value concepts and focus on numerical reasoning. Participants practice using the open number line to represent addition problems and discuss why *Do The Math* uses the Splitting strategy instead of the standard algorithm.

LUNCH

Extending Strategies to Subtraction
Do The Math helps students learn about subtraction by building on what they have already learned about addition and emphasizing the inverse relationship between addition and subtraction. In this session, participants review the progression of subtraction content and discuss how it connects to the strategies and tools introduced in Module A.

BREAK

Examining Problem Types
Participants experience various types of addition and subtraction problems and consider how the problem type impacts students' interpretation of the operation. The relationship between addition and subtraction is reinforced when participants examine comparing subtraction problems and consider that they can find the difference between two quantities with both addition and subtraction.

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*.

Math Solutions Guiding Principles
Drawing upon academic work and our its 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