

AGENDA

CCR Using Formative Assessment to Impact Student Learning, Grades K–5

OVERVIEW

Merging ongoing assessment with instruction engages teachers and students in becoming partners to support student learning. Using ideas from *INFORMative Assessment: Formative Assessment to Improve Mathematics Achievement* by Jeane M. Joyner and Mari Muri, this course supports participants' extension and application of a fundamental understanding of formative assessment for the purpose of promoting student learning.

OUTCOMES

- Shift classroom culture to one in which students take responsibility for their own work and teachers prompt students to reflect and reason through their ideas.
- Conduct classroom dialogue in ways that support students' mathematical thinking.
- Provide feedback that promotes understanding and supports students' metacognition about the quality of their arguments.
- Formulate questions to extend students' thinking.
- Select and use tasks for formative assessment that exemplify the Mathematics Process Standards and attend to learning targets aligned with rigorous state standards.

Day 1

Opening (30 minutes)

This introduction includes the course goals, an overview of formative assessment, a self-assessment opportunity, and pertinent logistical information. In addition, time is provided to introduce participants to one another and to form a working rapport.

Creating a Culture to Support Shared Learning (90 minutes)

In this session, participants engage in an assessment task involving mathematical relationships using a context. Prior to the experience, they spend time considering the classroom culture needed to engage students in the process of formative assessment and begin to foster such an environment among themselves. Following the experience, participants consider the design of the task that makes it an assessment *for* learning.

BREAK (15 minutes)

Promoting Productive Classroom Discourse (90 minutes)

Participants engage in a mathematical investigation that is designed to help students develop a plan or strategy, carry out the plan and revise when necessary, and summarize results. Pedagogically, participants reflect on strategies for promoting productive classroom discourse. Following the experience, participants consider the design of the investigation that assesses,

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then develops, students' ability to apply their mathematical knowledge and reasoning in flexible ways.

LUNCH (60 minutes)

Anticipating Responses to Instruction (45 minutes)

Considering typical mistakes and misconceptions of students while planning benefits teachers and students. Strategies such as thinking about what common errors may represent, looking at student work, and discussing possible next steps with colleagues allow for responding to students during instruction. Participants engage in a process for anticipating student thinking that they can use again as part of a teacher-learning community.

BREAK (15 minutes)

Providing Actionable Feedback (60 minutes)

The effective use of formative assessment depends on the quality of feedback given by teachers to students. One important way of moving students' thinking forward is to prompt them to reconsider their reasoning by providing actionable feedback. In this session, participants analyze responses from students' work on Two of Everything and practice a process for providing actionable feedback.

Purpose: *This session provides participants the opportunity to practice framing questions as feedback for students.*

Closing (15 minutes)

Participants reflect on the experiences of the day by creating a group response to demonstrate their learning.

Day 2

Opening (30 minutes)

This introduction includes a review of the learning outcomes and agenda. Participants revisit ideas around building culture through classroom talk by applying characteristics of helpful classroom talk.

Creating Structures to Promote Student Responsibility (75 minutes)

Building upon the idea of creating positive learning environments addressed in earlier sessions, participants reflect on their current practice and consider ways to establish characteristics of quality student work and the use of structures to promote student responsibility.

BREAK (15 minutes)

Planning Questions to Check for Understanding (75 minutes)

Questions support student learning in a variety of ways. They invite students to participate, guide students' thinking, help students to rethink responses, and probe and extend student

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thinking. In this session, participants engage in planning questions for a variety of mathematical purposes in order to check for student understanding.

LUNCH (60 minutes)

Understanding Thinking to Make Instructional Decisions (60 minutes)

Brief one-on-one interviews with students guide teachers in making adjustments in planning for instruction. During this session, participants watch student interviews and read an interview transcript to consider how student responses can inform instruction. In addition, participants consider the different purposes of conferencing with students both formally and informally.

BREAK (15 minutes)

Supporting Learning Through Written Assessment (60 minutes)

The ability to explain ideas and communicate reasoning is a workplace and life skill that everyone needs. Therefore, assisting students to learn to put ideas into words and representations that convey thinking is a worthy effort. Participants complete a formative assessment task, consider the information the responses provide, and compare assessment types in order to understand how to choose formative assessment tasks for students.

Closing (30 minutes)

This session connects back to the learning outcomes so that participants are prepared to move forward as they go back into classrooms and implement both the formative-assessment methods and instructional strategies modeled throughout the course.

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

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- 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