

AGENDA

Differentiating Mathematics Instruction

OUTCOMES

- Experience and analyze strategies to adapt classroom practices to address the wide range of learners in classrooms and make learning accessible for all students
- Gather and use information about what students already know, their interests, and how they learn best
- Choose, analyze, and adjust tasks to accommodate students' varying levels of readiness
- Experience a classroom atmosphere that stimulates and supports students' learning of mathematics

OVERVIEW

This course helps teachers understand what it means to support all students by differentiating three aspects of the math curriculum—content, process, and product. Teachers examine a variety of approaches that help them make instructional adjustments to content, provide activities that accommodate different students' learning styles, and offer a variety of ways for students to demonstrate what they've learned.

DAY 1

WELCOME, INTRODUCTION, AND OVERVIEW

WHAT IS DIFFERENTIATION?

Participants engage in differentiated tasks that promote access for all students, and reflect on their understanding of differentiated instruction.

GETTING TO KNOW OUR STUDENTS

In order to differentiate instruction, teachers must first know whom they are teaching. Participants examine forms of assessment used to explore students' mathematical thinking more closely in order to match instructional practices to the various needs of their students.

CREATING A VISION OF EQUITY

Equity in learning mathematics and accessibility to learning with understanding are critical dimensions of classrooms. Through a mathematical investigation and classroom video clip, participants examine criteria for tasks that provide access to all learners and the teacher decisions that promote an equitable classroom.

LUNCH

CASTING A WIDER NET FOR READINESS: TRANSFORMING TASKS

Choosing mathematical tasks is one of the most important decisions that teachers make. Participants engage in strategies for transforming tasks to meet the instructional needs of a wider range of learners.

SUPPORTING CHOICE: THINK-TAC-TOE

From the earliest school experiences, children engage in activities that support their development by making choices. Choice in school often becomes less frequent as children advance through their education.

Participants explore a strategy for providing choice designed to support instructional goals by modifications of content, process, and/or product.

CLOSING

Participants take time to reflect on the experiences of the day and ways that these experiences will positively affect their classroom instruction.

DAY 2

SUPPORTING CHOICE: MATERIALS

Among their other decisions as they prepare problem-solving tasks, teachers must decide which materials to have available for student use. Solving a mathematical task helps participants consider when it is best to guide students in which materials to use and when it is best to give students choices.

HOW STUDENTS LEARN

This session is designed to give participants insight into how children learn. It focuses on a view of learning in which people create, or construct their own understanding of mathematical concepts and relationships through interactions between their minds and concrete experiences in the real world.

CASTING A WIDER NET FOR READINESS: TIERING TASKS, PART ONE

Participants engage in a mathematical task and “visit” a classroom as they explore the strategy of tiering tasks to provide access for all learners.

LUNCH

CASTING A WIDER NET FOR READINESS: TIERING TASKS, PART TWO

Participants play a game, identify the mathematics exemplified and uncovered in the game, and determine important skills and understandings teachers would want to include in anecdotal records taken while students play the game.

CASTING A WIDER NET FOR READINESS: TIERING TASKS, PART THREE

A menu of games provides an opportunity for participants to practice tiering tasks.

REFLECTING ON DIFFERENTIATION

Working with their small groups, participants reflect on:

- The knowledge/understanding necessary for a teacher to possess in order to differentiate instruction
- How this course has addressed that knowledge and understanding
- Ideas for classroom implementation

CLOSING

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 help students make sense of and solve problems.