



PROFESSIONAL LEARNING

FOLLOW-UP: EXPLORING CONTENT, TOOLS, AND STRATEGIES IN MATH 180® COURSE I

PARTICIPANT NUMBER: 35 FORMAT: In Person DELIVERY LENGTH: Two Full Days

OVERVIEW



MATH 180 Course I uses models, tools, and alternative strategies to help students understand content and communicate their learning. This course provides the opportunity for collaboration between *MATH 180* teachers and core teachers as they focus on mathematical content using the tools and strategies introduced in *MATH 180*. Explicit connections between core content and *MATH 180* content promote instructional practices that impact student learning.

LEARNING ENVIRONMENT



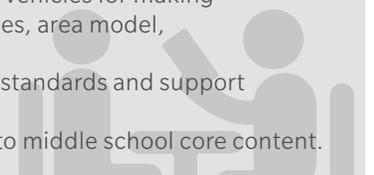
- Seating for participants to flexibly work in groups or pairs
- Computers with interactive access for all participants



OUTCOMES



- Identify common misconceptions and errors in students' mathematical thinking.
- Interact with and use the following models and tools found in *MATH 180* as vehicles for making meaning of numbers, properties, and operations: fraction pieces and shapes, area model, open number lines, bar model, and decimal grids.
- Use instructional strategies employed in *MATH 180* that exemplify process standards and support students' understanding.
- Connect the foundational math content and representations of *MATH 180* to middle school core content.



AGENDA - Day 1

OPENING

This introduction includes the course goals, an overview of the course, and pertinent logistical and background information. Participants meet each other and share relevant background information on their work with struggling learners.

GEOMETRIC MODEL FOR MULTIPLICATION

Students need to learn the meaning behind memorized facts and procedures. In this experience, participants relate multiplication to the area model of *MATH 180*, which they then relate to the multiplication fact table.

GEOMETRIC MODEL FOR MULTIPLICATION (CONTINUED)

Participants explore patterns as they experience mathematical understanding from a problem-solving perspective, emphasizing underlying concepts while linking different areas of mathematics.

MULTIPLICATION AND DIVISION COMPUTATION

MATH 180 helps students to see how decomposing numbers into their place-value parts contributes to the effective and efficient use of the Distributive Property to solve computation problems. During this session, participants use these strategies for both multiplication and division and consider how splitting numbers contributes to deepening student understanding of properties and operations.

REPRESENTING FRACTIONS

MATH 180 provides two models for representing fractions: Fraction Pieces and Fraction Shapes. Each of these models is used for different purposes. Participants make a Fraction Kit and use Fraction Pieces to think about equivalence while comparing, ordering, and representing fractions. They use Fraction Shapes to think about sharing situations. Comparing the two models and their uses allows participants to determine the usefulness of each tool and how these tools support student understanding of fraction concepts.

EXPLORING FRACTIONS ON THE NUMBER LINE

Providing opportunities for students to reason and communicate about fractions is an important part of developing their fraction sense. In the first part of this session, participants view and discuss a clip of sixth-grade students discussing their strategies for determining the fraction at a given point on a number line. In the second activity of this session, participants use Cuisenaire® Rods to make connections between a linear model (as represented with the Cuisenaire® Rods) and the distance model of the number line. In addition, the number line is used to explore strategies for comparing fractions and creating equivalent fractions.

CLOSING

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

**YOU MIGHT
ALSO BE
INTERESTED IN:**

- Follow-Up: *MATH 180* Data and Differentiation
- Follow-Up: *MATH 180* Conducting Classroom Discourse
- Follow-Up: *MATH 180* Leadership Overview

Job #8533
2/16 PDF Only

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This overview is based on the suggested best practices but can be personalized to meet specific school and district needs.

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