



Landscapes of Learning Mathematics Professional Development for P-8 Teachers, Coaches & Supervisors

The Western Region of the New York State Master Teacher Program is excited to offer our sequence of mini-courses in the mathematical landscapes of learning series that focuses on the big ideas, strategies, and models related to the development of number sense and operational thinking across the elementary and middle school grades. The content will be situated within a landscape of learning framework¹ that is based on the premise that student's mathematical thinking develops in a multitude of ways that begins with contexts or concrete tasks followed by pictorial representations and culminating in abstract perspectives. Exploration of Common Core strands across the grade levels will provide opportunities for participants to share their grade level expertise and to enhance their understanding of the coherent development of topics along the K – 8 spectrum. Participants will receive a CTLE certificate for 12 hours of professional development for each mini-course. First-time participants will also receive a set of dry-erase boards for small group work and whole-class discussions.

Landscapes II: July 9 & 10 **Multiplication & Division**

9:00 AM - 3:30 PM, Science and Math Complex 259

Extending the discussion from Landscapes I, this minicourse will explore the landscape of learning for multiplication and division and the associated big ideas, strategies, and models. Discussions will include use of area models and number lines for developing pictorial representations across the grade levels, as well as number talks, number strings, and other classroom practices for thinking about multiplication and division. Partitive and measurement models for division will be developed and extended from whole numbers to fractions. Discussions will focus on sharing classroom practices that foster students' growth across the landscape and take advantage of the range of grade level perspectives that will be represented.

Landscapes III: July 11 & 12 **Fractions**

9:00 AM - 3:30 PM, Science and Math Complex 259

The content in Landscapes II will be the basis for development of ideas central to the focus of Landscapes III. That said, new participants are welcome! We will build on previous work with multiplication and division as we explore changes to traditional instruction on fractions in the Common Core standards. For example, we will explore the new conception of fractions as measures, unit fractions as building blocks for fractions and whole numbers through the processes of partitioning and iterating, and the conceptual underpinnings of fraction arithmetic. We will also examine how models such as number bonds, ratio tables, bar models and area models naturally extend from whole numbers to fractions.

There is no cost for these workshops! The workshops are open to all P-8 teachers, coaches, and supervisors. Seating is limited so please register soon at <https://wnymasterteachers.wufoo.com/forms/math-landscapes-summer-2018/>

If you have questions, please contact Buffalo State Master Teacher Program at msmt@buffalostate.edu

¹ The landscape model is based on the work of Catherine Fosnot as documented in her *Young Mathematicians at Work* series.