Understanding Fraction Concepts

Why is this training important?
Fractions play a central role in algebraic reasoning. The most useful form of prealgebra is the development of computational fluency and the thorough study of fractions and fraction arithmetic. (Algebra and Algebraic Thinking in School Mathematics, pg. 13; How to Prepare Students for Algebra, pg. 10-17)

The Kentucky Core Academic Standards for mathematics reflect the importance of possessing a deep, conceptual understanding of fractions so students may excel in advanced mathematics experiences, such as algebra. Understanding Fraction Concepts (UFC) offers a conceptual approach to teaching fractions, versus the procedural approach that many textbooks provide. The UFC training utilizes manipulative materials to develop student's knowledge of fraction ideas through three levels of trainings:

- Part One – Parts and Pieces (Grades K-2 or RTI; 1 day)
- Part Two – Order, Equivalence, and Number Sense (Grades 3-6 or RTI; 3 days; pre-requisite for Part Three)
- Part Three - Operations and Decimals (Grades 3-6 or RTI; 2 days)

What will you learn?
UFC will explore multiple ways to integrate conceptual and procedural understanding of fractions, fraction operations and decimals into mathematics instruction. The lessons allow students opportunities to reflect on their thinking about fractions as they try to make sense of the formal symbolic system, so students develop a deep, conceptual understanding of fractions. Participants will:

- investigate multiple concrete models of fractions, fraction operations, and decimals.
- learn how to organize instruction using manipulatives and apply fraction ideas to real-world situations.
- receive a classroom set of training materials to provide students with an immediate hands-on learning experience.

Who should attend?
Regular or special education math teachers grades K-6, intervention specialists, math coaches, and other teacher leaders who support mathematics instruction.

Note:
This training is adapted from the Rational Number Project funded by the National Science Foundation.