



## Course Outline

In this course, *Getting Started with Number and Operations in Base Ten*, you will explore the content standards in the elementary grades, and learn about their connection to the Standards for Mathematical Practice, understand how the mathematical content builds on Counting and Cardinality, connects to Operations and Algebraic Thinking, and creates a foundation to middle and high school mathematics. In addition, you will explore why computational fluency and conceptual understanding are important for your students, and consider implications for your classroom practice.

Some typical course activities include:

- Learning about the Number and Operations in Base Ten domain
- Viewing and reflecting on expert video and video of classroom practice
- Connecting the content standards to your instructional practice
- Reflecting on your own learning

Throughout the course, opportunities are provided for you to connect your learning across sessions and to explicitly consider the implications of your learning for your classroom practice.

## Goals & Purpose

### ***Session 1 – Introduction to Number and Operations in Base Ten***

- Learn how the Number and Operations in Base Ten domain builds on students' early experiences in Counting and Cardinality
- Explore which fluencies are expected at each grade level of the Common Core

### ***Session 2 – Developing Computational Strategies for Addition and Subtraction***

- Examine the distinctions between specialized and general strategies for adding and subtracting multi-digit numbers
- Explore how the Number and Operations in Base Ten domain builds on standards from Counting and Cardinality works with the Operations and Algebraic Thinking domain to help students develop strong conceptual understanding of multi-digit addition and subtraction
- Recognize students' informal strategies for adding and subtracting multi-digit numbers build toward their understanding and use of standard algorithms for each operation

***Session 3 – Developing Computational Strategies for Multiplication and Division***

- Learn about how basic model representations of multiplication and division have implications to make sense of the base ten system for those operations
- Examine the Number and Operations in Base Ten standards, the Operations and Algebraic Thinking domain, and students' prior understanding of multi-digit addition and subtraction to help them develop strong conceptual understanding of multi-digit multiplication and division
- Recognize students' informal strategies for multiplying and dividing multi-digit numbers build towards the standard algorithms for those operations

***Session 4 – Beyond Number and Operations in Base Ten***

- Learn about students' work in Number and Operations in Base Ten is interconnected with their work in Operations and Algebraic Thinking
- Examine the Common Core Shifts connect to students' learning the content of Number and Operations in Base Ten
- Learn about students' work in Number and Operations in Base Ten builds a foundation for their work in middle and high school mathematics

***Session 5 – Course Summary***

- Review information and/or activities you completed in earlier sessions

Throughout the course, opportunities are provided for teachers to connect their learning across sessions and to explicitly consider the implications of that learning for classroom practice. Teachers will also be able to revisit their work and reflections by viewing their individual Course Portfolios.