

Essential Math 3



The following learning targets represent the major concepts studied and assessed in this course.

Unit 6

Geography of the Coordinate Plane

U6.1 Describe and use transformations as functions that act on coordinates to produce new coordinates.

U6.2 Analyze functions using multiple representations: graphs, words, tables and equations

- This unit builds facility with the coordinate plane, graphs, and equation graphing. Students explore coordinated data and transformations before moving on to graphing the solution points of equations. As students test points to see whether they are on the graph of an equation (and hence are solutions of the equation), they come to understand graphs as a collection of solution points (which supports future work with slope and distance).

Unit 7

Thinking Through Things Thoroughly

U7.1 Make sense of problems and persevere in problem solving

U7.2 Use appropriate tools strategically.

U7.3 Attend to precision.

- This unit is designed to stimulate mathematical thinking and to offer more practice solving problems, skills that take time and experience to develop. Unit 7 invites students to consider what they can determine from a context and what possibilities there are before focusing on the answer requested. Students use tables and diagrams to organize information and learn to repeat and generalize calculations to produce algebraic equations.

Unit 8

Logic of Fractions

U8.1 Use proportional reasoning to solve problems.

U8.2 Apply mathematical operations to fractions.

U8.3 Look for and make use of structure by recognizing multiple representations of rational expressions.

- This unit builds on tools and strategies developed in earlier units, focusing on rational numbers and rational expressions. Number lines and area models help students make sense of additive and multiplicative operations with fractions, while mobile puzzles build intuition about proportional reasoning. In the last lesson, students see how graphs can be used to depict proportional relationships.