Course Overview

Students begin grade 8 with transformational geometry. They study rigid transformations and congruence, then dilations and similarity (this provides background for understanding the slope of a line in the coordinate plane). Next, they build on their understanding of proportional relationships from grade 7 to study linear relationships. They express linear relationships using equations, tables, and graphs, and make connections across these representations. They expand their ability to work with linear equations in one and two variables. Building on their understanding of a solution to an equation in one or two variables, they understand what is meant by a solution to a system of equations in two variables. They learn that linear relationships are an example of a special kind of relationship called a function. They apply their understanding of linear relationships and functions to contexts involving data with variability. They extend the definition of exponents to include all integers, and in the process codify the properties of exponents. They learn about orders of magnitude and scientific notation in order to represent and compute with very large and very small quantities. They encounter irrational numbers for the first time and informally extend the rational number system to the real number system, motivated by their work with the Pythagorean Theorem.

Unit 1: Rigid Transformations and Congruence (4 weeks)
Unit 2: Dilations, Similarity and Introducing Slope (3 weeks)
Unit 3: Linear Relationships (4 weeks)
Unit 4: Linear Equations and Linear Systems (4 weeks)
Unit 5: Functions and Volume (5 weeks)
Unit 6: Associations in Data (3 weeks)
Unit 7: Exponents and Scientific Notation (4 weeks)
Unit 8: Pythagorean Theorem and Irrational Numbers (4 weeks)