



Curriculum Overview

Subject: Mathematics

Grade: 7

By the end of the year, you can expect your child to:

- Compute unit rates associated with ratios of fractions, including ratios of lengths, areas and other quantities measured in like or different units
- Recognize and represent proportional relationships between quantities
- Decide whether two quantities are in a proportional relationship
- Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships
- Represent proportional relationships by equations
- Use proportional relationships to solve multistep ratio and percent problems
- Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers
- Describe situations in which opposite quantities combine to make 0
- Interpret sums of rational numbers by describing real-world contexts
- Apply properties of operations as strategies to add and subtract rational numbers
- Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers
- Interpret quotients of rational numbers by describing real-world contexts
- Apply properties of operations as strategies to multiply and divide rational numbers
- Convert a rational number to a decimal using long division
- Solve real-world and mathematical problems involving the four operations with rational numbers
- Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients
- Solve multi-step real-life and mathematical problems posed with positive and negative rational numbers in any form

- Apply properties of operations to calculate with numbers in any form; assess the reasonableness of answers using mental computation and estimation strategies
- Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities
- Solve problems involving scale drawings of geometric figures
- Describe the two-dimensional figures that result from slicing three-dimensional figures, as in plane sections of right rectangular prisms and right rectangular pyramids
- Know the formulas for the area and circumference of a circle and use them to solve problems
- Use facts about supplementary, complementary, vertical, and adjacent angles in a multi-step problem to write and solve simple equations for an unknown angle in a figure
- Solve real-world and mathematical problems involving area, volume and surface area of two- and three-dimensional objects
- Understand that random sampling tends to produce representative samples and support valid inferences
- Generate multiple samples (or simulated samples) of the same size to gauge the variation in estimates or predictions
- Use measures of center and measures of variability for numerical data from random samples to draw informal comparative inferences about two populations
- Understand that the probability of a chance event is a number between 0 and 1 that expresses the likelihood of the event occurring
- Approximate the probability of a chance event by collecting data on the chance process that produces it and observing its long-run relative frequency, and predict the approximate relative frequency given the probability
- Develop a probability model and use it to find probabilities of events
- Find probabilities of compound events using organized lists, tables, tree diagrams, and simulation
- Represent sample spaces for compound events using methods such as organized lists, tables and tree diagrams. For an event described in everyday language (e.g., "rolling double sixes"), identify the outcomes in the sample space which compose the event