CURRICULUM OVERVIEW

MIDDLE SCHOOL MATHEMATICS

Grades 6-8

Connect prior understanding with grade-level mathematics.

Students extend their work with numbers into proportional reasoning, expressions, equations, and functions. Geometry, data, and probability provide additional opportunities to model relationships and explain mathematical thinking.

IN THIS OVERVIEW

A topic overview, not a fixed lesson sequence. Instructional priorities are shaped by student needs and program goals.

TOPICS AND SKILLS

Grade 6

Ratios and Proportional Relationships

6.RP

Understand ratio concepts and language and use ratio reasoning to solve problems.

The Number System

6.NS

Apply and extend previous understandings of multiplication and division to divide fractions by fractions. Compute fluently with multi-digit numbers and find common factors and multiples. Apply and extend previous understandings of numbers to the system of rational numbers.

Expressions and Equations

6.EE

Apply and extend previous understandings of arithmetic to algebraic expressions. Reason about and solve one-variable equations and inequalities. Represent and analyze quantitative relationships between dependent and independent variables.

Geometry

6.G

Solve real-world and mathematical problems involving area, surface area, and volume.

Statistics and Probability

6.SP

Develop understanding of statistical variability. Summarize and describe distributions.

Grade 7

Ratios and Proportional Relationships

7.RP

Analyze proportional relationships and use them to solve real-world and mathematical problems.

The Number System

7.NS

Apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide rational numbers.

Expressions and Equations

7.EE

Use properties of operations to generate equivalent expressions. Solve real-life and mathematical problems using numerical and algebraic expressions and equations.

Geometry

7.G

Draw, construct and describe geometrical figures and describe the relationships between them. Solve real-life and mathematical problems involving angle measure, area, surface area, and volume.

Statistics and Probability

7.SP

Use random sampling to draw inferences about a population. Draw informal comparative inferences about two populations. Investigate chance processes and develop, use, and evaluate probability models.

TOPICS AND SKILLS

Grade 8

The Number System

8.NS

Know that there are numbers that are not rational, and approximate them by rational numbers.

Expressions and Equations

8.EE

Work with radicals and integer exponents. Understand the connections between proportional relationships, lines, and linear equations. Analyze and solve linear equations and pairs of simultaneous linear equations.

Functions

8.F

Define, evaluate, and compare functions. Use functions to model relationships between quantities.

Geometry

8.G

Understand congruence and similarity using physical models, transparencies, or geometry software. Understand and apply the Pythagorean Theorem. Solve real-world and mathematical problems involving volume of cylinders, cones and spheres.

Statistics and Probability

8.SP

Investigate patterns of association in bivariate data.