

Grade 6

Major	Supporting	Additional
<p>Ratios and Proportional Relationships</p> <ul style="list-style-type: none"> ☛ Understand ratio concepts and use ratio reasoning to solve problems. <p>The Number System</p> <ul style="list-style-type: none"> ☛ Apply and extend previous understandings of numbers to the system of rational numbers. ☛ Apply and extend previous understandings of multiplication and division to divide fractions by fractions. <p>Expressions and Equations</p> <ul style="list-style-type: none"> ☛ 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. 	<p>Geometry</p> <ul style="list-style-type: none"> ☐ Solve real-world and mathematical problems involving area, surface area, and volume.⁷ 	<p>Statistics and Probability</p> <ul style="list-style-type: none"> ☉ Develop understanding of statistical variability. ☉ Summarize and describe distributions. <p>The Number System</p> <p>Compute fluently with multi-digit numbers and find common factors and multiples.</p>

Depth Opportunities:

RP 3; NS 1; NS 8; EE 3, 7

⁷ In this cluster, students work on problems with areas of triangles and volumes of right rectangular prisms, which connects to work in the Expressions and Equations domain. In addition, another standard within this cluster asks students to draw polygons in the coordinate plane, which supports work with the coordinate plane in the Number System domain.

Grade 7

Major	Supporting	Additional
<p>Ratios and Proportional Relationships</p> <ul style="list-style-type: none"> ☛ Analyze proportional relationships and use them to solve real-world and mathematical problems. <p>The Number System</p> <ul style="list-style-type: none"> ☛ Apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide rational numbers. <p>Expressions and Equations</p> <ul style="list-style-type: none"> ☛ Use properties of operations to generate equivalent expressions. ☛ Solve real-life and mathematical problems using numerical and algebraic expressions and equations. 	<p>Statistics and Probability</p> <ul style="list-style-type: none"> ☐ Use random sampling to draw inferences about a population.⁸ ☐ Investigate chance processes and develop, use, and evaluate probability models.⁹ 	<p>Statistics and Probability</p> <ul style="list-style-type: none"> ☐ Draw informal comparative inferences about two populations. <p>Geometry</p> <ul style="list-style-type: none"> Solve real-life and mathematical problems involving angle measure, area, surface area, and volume. ☐ Draw, construct and describe geometrical figures and describe the relationships between them.

Depth Opportunities:

RP 2; NS 3; EE 3, 4; G 6

⁸ The standards in this cluster represent opportunities to apply percentages and proportional reasoning. In order to make inferences about a population, one needs to apply such reasoning to the sample and the entire population.

⁹ Probability models draw on proportional reasoning and should be connected to the major work in those standards.

Grade 8

Major	Supporting	Additional
<p>Expressions and Equations</p> <ul style="list-style-type: none"> ☛ 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. <p>Functions</p> <ul style="list-style-type: none"> ☛ Define, evaluate, and compare functions. <p>Geometry</p> <ul style="list-style-type: none"> ☛ Understand and apply the Pythagorean Theorem. ☛ Understand congruence and similarity using physical models, transparencies, or geometry software. 	<p>The Number System</p> <ul style="list-style-type: none"> ☐ Know that there are numbers that are not rational, and approximate them by rational numbers. ¹⁰ <p>Functions</p> <ul style="list-style-type: none"> ☐ Use functions to model relationships between quantities. ¹¹ <p>Statistics and Probability</p> <ul style="list-style-type: none"> ☐ Investigate patterns of association in bivariate data. ¹² 	<p>Geometry</p> <p>Solve real-world and mathematical problems involving volume of cylinders, cones, and spheres.</p>

Depth Opportunities:

EE 5, 7, 8; F 2; G 7

¹⁰ Work with the number system in this grade is intimately related to work with radicals, and both of these may be connected to the Pythagorean Theorem as well as to volume problems, e.g., in which a cube has known volume but unknown edge lengths.

¹¹ The work in this cluster involves functions for modeling linear relationships and a rate of change/initial value, which supports work with proportional relationships and setting up linear equations.

¹² Looking for patterns in scatterplots and using linear models to describe data are directly connected to the work in the Expressions and Equations clusters. Together, these represent a connection to the Standard for Mathematical Practice Model with mathematics.