

# Grade 8 Overview at a Glance

• • • • • **Critical Areas** • • • • • • • • **Domains and Clusters** • • • • •

**1** Formulating and reasoning about expressions and equations, including modeling an association in bivariate data with a linear equation, and solving linear equations and systems of linear equations

**2** Grasping the concept of a function and using functions to describe quantitative relationships

**3** Analyzing two- and three-dimensional space and figures using distance, angle, similarity, and congruence, and understanding and applying the Pythagorean Theorem

**5 Mathematical Practices**

- **Make sense of problems and persevere in solving them.**
- **Reason abstractly and quantitatively.**
- **Construct viable arguments and critique the reasoning of others.**
- **Model with mathematics.**
- **Use appropriate tools strategically.**
- **Attend to precision.**
- **Look for and make use of structure.**
- **Look for and express regularity in repeated reasoning.**

## The Number System

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

## Expressions and Equations

- 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

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

## Geometry

- 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

- ▣ Investigate patterns of association in bivariate data.

### Content Emphasis by Clusters Key

- Major Clusters
- ▣ Supporting Clusters
- Additional Clusters