

EIGHTH GRADE MATHEMATICS

June 2021

Mathematical Practice Standards: Make sense of, communicate, connect and justify mathematical ideas to support understanding and learning across all mathematical concepts

- 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

Operations with Rational and Irrational Numbers

- Apply and extend understanding of operations with rational and irrational numbers to include an understanding of irrational numbers (8.NS.1-2) and operations with radicals (8.NS.3)

Proportional Reasoning

- Understand the connections between proportional relationships, linear functions, and linear equations. Identify the slope in a graph as the unit rate in a proportional relationship (8.EE.5)
- Use similar triangles to explain why the slope is the same between any two distinct points on a non-vertical line (8.EE.6)

Simplify Expressions and Solve Equations

- Solve linear equations and inequalities in one variable, recognizing when there are zero, one or infinite solutions (8.EE.8)
- Identify, evaluate and compare linear functions, linear equations, and system of linear equations (8.F.1-5; 8.SP.2-3)

Represent and Analyze Relationships

- Understand and apply the Pythagorean Theorem and its converse in real-world and mathematical problems in two and three dimensions, and to find the distance between two points in a coordinate system (8.G.6-8)
- Understand how to simplify radicals with emphasis on square roots (8.NS.3) as well as understanding solutions of square roots (8.EE.2)

