**Mathematics Pacing Guide Timeline**

**Eighth Grade**

| **Month** | **Estimated Time of Unit** | **Unit** | **Theme/Content** |
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| September | 3 weeks | 1  | **Radicals and Integer Exponents*** Solve exponential expressions with the same base and different exponents
* Solve exponential expressions with different bases and same exponents
* Solve exponential expressions with powers raised to a power
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| September/October | 3 weeks | 2 | **The Number System – Rational and Irrational Numbers*** Numbers that are not rational are irrational
* Rational numbers can be written as a decimal
* Irrational numbers do not show a repeating or terminating pattern as a decimal
* Order rational and irrational numbers on a number line
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| October/November | 3 weeks | 3 | **Scientific Notation*** Write numbers in scientific notation and standard notation
* Use associative property and integer exponent properties to add, subtract, multiply, and divide numbers in scientific notation
* Estimate how much larger/smaller a number is by dividing
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| November | 4 weeks | 4 | **Proportional Relationships, Lines, and Linear Equations*** Understand the connections between proportional relationships, line, and linear equations
* Use properties of operations to generate equivalent expressions
* Solve real-life and mathematical problems using numerical and algebraic expressions and equations
* Analyze proportional relationships and use them to solve real-world mathematical problems
* Apply geometric concepts in modeling situations
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| December | 3 weeks | 5 | **Linear Equations*** Analyze and solve linear equations and pairs of simultaneous linear equations
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| January | 4 weeks | 6 | **Functions*** Define, evaluate, and compare functions
* Use functions to model relationships between quantities
* Solve real-life and mathematical problems using numerical and algebraic expressions and equations
* Analyze functions using different representations
* Solve equations and inequalities in one variable
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| February | 4 weeks | 7 | **Bivariate Data*** Investigate patterns of association in bi-variant data
* Develop an understanding of statistical variability
* Summarize and describe distributions
* Make inferences and justify conclusions from sample surveys, experiments, and observational studies
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| March | 4 weeks | 8 | **Congruence and Similarity*** Understand congruence and similarity using physical models, transparencies, or geometry software
* Solve real-world and mathematical problems involving area, surface area, and volume
* Solve real-life and mathematical problems involving angle measure, area, surface area and volume
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| April/May | 4 weeks | 9 | **The Pythagorean Theorem*** Understand and apply the Pythagorean Theorem
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| May/June | 4 weeks | 10 | **Surface Area and Volume*** Solve real-world and mathematical problems involving volume of cylinders, cones, and spheres
* Solve real-life and mathematical problems involving angle measure, area, surface area, and volume
* Investigate chance processes and develop, use, and evaluate probability models
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