**Mathematics Pacing Guide Timeline**

**Eighth Grade**

| **Month** | **Estimated Time of Unit** | **Unit** | **Theme/Content** |
| --- | --- | --- | --- |
| 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 |
| 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 |
| 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 |
| 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 |
| December | 3 weeks | 5 | **Linear Equations**   * Analyze and solve linear equations and pairs of simultaneous linear equations |
| 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 |
| 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 |
| 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 |
| April/May | 4 weeks | 9 | **The Pythagorean Theorem**   * Understand and apply the Pythagorean Theorem |
| 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 |