

# Accelerated Mathematics 8 Pacing Guide

## 1st Semester Topics

### 1<sup>st</sup> Nine Weeks

### 2<sup>nd</sup> Nine Weeks

#### Unit 1: Equations and Inequalities

#### Unit 2: Linear Relationships

#### Unit 3: Functions

#### Unit 4: Systems of Linear Equations and Inequalities

- Multi-Step Equations
- Algebraic Proportions
- Absolute Value Equations
- Multi-Step Inequalities
- Compound Inequalities
- Absolute Value Inequalities

- Slope
- Graphing Linear Equations in slope-intercept, point-slope and standard form
- Proportional vs Non-Proportional Relationships
- Scatterplots
- Lines of Best Fit
- Linear Relationship Applications

- Functions Rule
- Classifying Functions
- Function Notation
- Domain and Range
- Discrete vs Continuous functions
- Step Functions

- Solving by Graphing, Substitution, and Elimination
- Application Problems
- Graphing Linear Inequalities
- Graphing Systems of Linear Inequalities
- Applications of Systems of Linear Inequalities

## 2nd Semesters Topics

### 3<sup>rd</sup> Nine Weeks

### 4<sup>th</sup> Nine Weeks

#### Unit 5: Absolute Value Functions

#### Unit 6: Exponential Expressions and Functions

#### Unit 7: Polynomials and Factoring

#### Mini Unit: Pythagorean Theorem

#### Unit 8: Quadratics Functions

- Graphing Absolute Value Functions
- Application of Absolute Value Functions
- Transformations of Absolute Value Functions

- Laws of Exponents
- Geometric Sequences
- Scientific Notation
- Exponential Functions
- Exponential Growth and Decay
- Transformations of Exponential Functions

- Classifying Polynomials
- Simplifying Polynomials
- Factoring

- Pythagorean Theorem
- Converse of the Pythagorean Theorem
- Application of Pythagorean Theorem
- Distance on the Coordinate Plane

- Graphing Quadratics Functions
- Vertex Form
- Transformations of Quadratic Functions
- Solving Quadratics Equations using factoring, Completing the square and Quadratic formula
- Applications of Quadratics Functions

# Mathematics 8 Pacing Guide

## 1st Semester Topics

### 1<sup>st</sup> Nine Weeks

### 2<sup>nd</sup> Nine Weeks

#### Unit 1: The Real Number System and Pythagorean Theorem

#### Unit 2: Transformations

#### Unit 3: Equations

#### Unit 4: Functions

- Square and Cube Roots
- Estimating Square and Cube Roots
- The Real Number System
- Decimal Representation of Repeating Decimals
- Pythagorean Theorem
- Converse of the Pythagorean Theorem
- Application of Pythagorean Theorem
- Distance on the Coordinate Plane

- Identify and Graph Translations
- Identify and Graph Reflections
- Identify and Graph Rotations
- Identify and Graph Dilations
- Symmetry

- Solve Multi-Step Equations
- Solve Equations by Square Roots
- Solve Equations with Variables on Both Sides
- Solve Equations with Variables on Both Sides (Special Types- Infinite and No Solutions)
- Translating and Solving Equations
- Applying Equations to Real World Word Problems

- Identify domain and range of a relation
- Classify a relation as a function when given an ordered pair list, table, or graph
- Calculate range when given domain in function notation
- Graph a relation/ function on a coordinate plane when given a table
- Determine if a graph, table of values, or an equation is linear or nonlinear

## 2nd Semesters Topics

### 3rd Nine Weeks

### 4<sup>th</sup> Nine Weeks

#### Unit 5: Linear Relationships

#### Unit 6: Exponential & Scientific Notation

#### Unit 7: Data Analysis

#### Unit 8: Angle Relationships

#### Unit 9: Volume

#### Unit 10: Systems of Linear Equations

- Slope
- Graphing Linear Equations in slope-intercept,
- Proportional vs Non-Proportional Relationships
- Linear Relationship Applications

- Laws of Exponents
- Estimating Powers of Ten
- Operations with Scientific Notation

- Scatterplots
- Lines of Best Fit
- Two Way Tables
- Frequency Tables

- Use angle pair relationships to calculate missing values and/or angles
- Classify special angle pairs formed by parallel lines cut by a transversal

- Calculate Volume of Cylinders, Cones and Spheres
- Find the missing measure of a 3D Figure given the volume

- Solving by Graphing and Substitution
- Application Problems