# Math 8 Accelerated
## Integrated Algebra Curriculum

## Unit I ~ Introduction to Algebra
-Sets  (union, intersection, interval notation,
                Venn Diagram representation of sets)
-Properties of numbers (including closure, identity)
-Order of operations – with evaluating
-Translating expressions and equations
-Multiplying monomials (variable monomials)
-Distributive property (with variables)
-Dividing monomials (variable monomials)
-Introduction to Functions
-Functions and Relations

## Unit II ~ Solving Equations

-Multi-step equations
-Variables on both sides
-Word Problems
-Literal Equations
-Solving Inequalities
-Solving Absolute-Value Equations

## Unit III ~ Word Problems
-Coin Problems
-Consecutive Integer Problems
-Perimeter Problems
-Number Problems

## Unit IV ~ Graphing Equations

-Graphing Linear Equations by table:
-given the domain
-not given the domain
-Finding Slope
-Writing the Equation of a Line when given:
-the slope and an intercept
-one point and the slope
-two points
-Graph a line by slope-intercept
-Graphing Linear Inequalities
-Graphing Absoute-Value Equations
-Graphing Exponential Growth Equations
-Comparing Linear, Exponential, and Quadratic graphs

## Unit V ~ Measurement in Geometry

-Area of geometric figures
-Surface area of rectangular prisms and cylinders
-Area of shaded regions

## Unit VI ~ Operations with Polynomials

-Multiplying Exponents
-Zero and Negative Exponents
-Division of Exponents
-Scientific Notation
-Adding/Subtracting Polynomials
-Multiplying Polynomials
-Special Products
-Factoring :   GCF
Trinomial
DOTS
-Factoring Completely

## Unit VII ~ Solving and Graphing Quadratic Equations
-Solving Quadratic Equations by Finding Square Roots
-Simplifying Square Roots
-Operations with Square Roots
-Solving Polynomial Equations in Factored Form
-Solving Quadratic Word Problems

## Unit VIII ~ Graphing Quadratics
-Graphing a Quadratic Equation
-Solving a Quadratic Equation by Graphing

## Unit IX ~ Systems of Equations and Inequalities
-Solving Algebraically
    -Substitution
    -Elimination
-Word Problems
-Solving Graphically:  Equations
                        Inequalities
-Solving a Linear-Quadratic System:  Algebraically
    (factorable quadratics only)       Graphically

## Unit X ~ Ratio, Proportion, Rational Expressions
-Rates, Ratios, Percents, Proportion
-Dimensional analysis
-Pythagorean Theorem
-Trigonometry
-Direct Variation
-Simplifying Rational Expressions
-Multiplying/Dividing Rational Expressions
-Adding/Subtracting Rational Expressions
            (like denominators – binomials)
-Dividing Polynomials
-Relative error

## Unit XI ~ Statistical Graphs
- Scatter Plots
- Line of Best Fit
- Tables and Graphs
- Measures of Central Tendency
- Histograms
- Cumulative Frequency Histograms
- Box & Whisker Plots
- Qualitative & Quantitative data
- Univariate & Bivariate data
- Bias
- Correlation & Causation

## Unit XII ~ Probability
- Counting Principle
- Arrangements
- Permutation
- Probability   (not odds)
- Complement
- Sample Space
- Tree Diagrams
- Empirical Probability
- Mutually Exclusive Events
- Dependent Events
- Independent Events
- Conditional Probability