Department: Mathematics
Course Name: Middle School Math

Course Description:
This curriculum provides the opportunity for students to continue to refine computational skills involving whole numbers, fractions, and decimals. Number sense and problem solving are emphasized throughout the course. In addition, emphasis is placed on critical thinking, complex communication, collaboration, creativity, and risk-taking. Students will gain an understanding of algebra and geometry relationships. Other topics include number theory, proportional relationships, probability, measurement, and organizing and displaying data. Upon successful completion of MS Math, students move to Pre-Algebra.

Content:
Whole Numbers and Patterns
Decimals
Area, Perimeter, and Volume
Number Theory and Fractions
Fraction Operations
Ratios and Proportions
Collecting and Displaying Data
Algebraic Expressions and Properties
Integers and the Coordinate Plane
Statistical Measures

Skills:
Estimating for reasonableness
Represent numbers using exponents
Use the order of operations
Use number properties to compute mentally
Choose an appropriate method of computation and justify the choice
Write, compare, and order decimals using place value and number lines
Estimate decimal sums, differences, product, and quotients
Add and subtract decimals
Multiply decimals by whole numbers and decimals
Divide decimals by whole numbers
Divide whole numbers and decimals by decimals
Describe figures by using the terms of geometry
Calculate area and perimeter of parallelograms, triangles, and trapezoids
Calculate the surface area of prisms and pyramids
Find the volume of rectangular prisms
Recognize, describe, and extend geometric patterns
Identify congruent figures and use congruence to solve problems
Identify line symmetry
Use divisibility rules
Write prime factorizations of composite numbers
Find the greatest common factor of a set of numbers
Convert between decimals and fractions
Write equivalent fractions

Convert between mixed numbers and improper fractions
Use pictures and number lines to compare and order fractions
Add and subtract fractions with like denominators
Estimate sums and differences of fractions and mixed numbers
Find the least common multiple of a group of numbers
Add and subtract fractions with unlike denominators
Add and subtract mixed numbers with unlike denominators
Regroup mixed numbers to subtract
Multiply fractions by whole numbers
Multiply fractions
Multiply mixed numbers
Divide fractions and mixed numbers
Write ratios and rates and find unit rates
Compare and graph ratios
Use a table to find equivalent ratios and rates
Write and solve proportions
Convert units of measure using dimensional analysis
Write percents as decimals and fractions
Write decimals and fractions as percents
Find the missing value in a percent problem
Solve percent problems that involve discounts, tips, and sales tax
Use tables to record and organize data
Find the range, mean, median, and mode of a data set
Find the measures of center and measures of variation
Learn the effect of additional data and outliers
Display and organize data in bar graphs
Organize data in line plots, frequency tables, and histograms
Graph ordered pairs on a coordinate grid
Recognize misleading graphs
Make and analyze stem-and-leaf plots and box-and-whisker plots
Analyze the shape of distributions
Choose an appropriate way to display data
Identify and evaluate expressions
Translate between words and math
Determine whether a number is a solution of an equation
Solve whole-number addition, subtraction, multiplication, and division equations
Graph integers on a number line
Compare and order integers
Find the absolute value of integers
Write integers to describe a situation

Text and Materials:
Larson, Ron and Boswell, Laurie., Big Ideas Math Course 1: A Bridge to Success (Houghton Mifflin Harcourt, 2014)

Mathematics Course 1 (Holt McDougal, 2010)

Methods of Instruction:
Lecture
Instructional videos

Manipulatives
Worksheets
iPad apps
Cooperative learning
Desmos
DeltaMath
Google Forms

Methods of Evaluation:
Tests
Quizzes
Class projects
Homework
Classwork
Daily WarmUps