Curriculum Document for Mathematics
Course Title: middle school **Grade: 5**

Learner Objective #1: **Students will use appropriate vocabulary and reasoning skills when solving and presenting problems.**

- Comprehend place value to the billions
- Write numerals in standard, expanded, and word form
- Identify cardinal, ordinal, and nominal numbers
- Identify the addition properties
- Read and write addition and subtraction sentences
- Relate multiplication and division
- Read and write decimals
- Use a benchmark number

Learner Objective #2: **Students will effectively use numbers for measuring, estimating, and problem solving.**

- Round numbers to the nearest ten, hundred, and thousand
- Estimate sums
- Add with and without renaming up to 6 digit numbers
- Solve addition story problems
- Subtract with and without renaming up to 6 digit numbers
- Subtract money amounts
- Estimate subtraction problems
- Check subtraction problems with addition
- Compare and order relationships among whole numbers using symbols
- Solve subtraction word problems
- Multiply 2-5 digit numbers by 1-3 digit multipliers
- Estimate multiplication problems
- Solve multiplication story problems

- Estimate division problems
- Divide 2-5 digit numbers by 1-2 digit divisors
- Use zero in the quotient correctly
- Divide by multiples of 10, 100, and 1000
- Divide money amounts
- Solve equations using related number sentences
- Read and write fractions
- Read and write mixed numerals
- Compare and order fractions
- Write equivalent fractions
- Find common factors and multiples
- Write fractions in lowest terms
- Add and subtract like and mixed fractions
- Solve word problems involving fractions
- Rename fractions
- Compare unlike fractions
- Add and subtract unlike fractions and mixed numerals
- Multiply fractions
- Multiply mixed numerals
- Multiply a fraction and a whole number
- Read and write decimals
- Write equivalent decimals
- Round decimals
- Compare and order decimals
- Add, subtract, and multiply decimals
- Solve word problems involving decimals
- Read, write, and express ratios three ways
- Find equivalent ratios
- Read and write percentages
- Convert a fraction to a percent and percent to a fraction

Learner Objective #3: **Students will use geometric concepts and relationships to interpret, represent, and solve problems.**

- Identify geometric shapes (lines; rays; acute, right, obtuse, and straight angles; parts of a circle; triangles; quadrilaterals; pentagons; hexagons; and octagons)
- Classify triangles as isosceles, scalene, and right
- Identify and draw intersecting, parallel, and perpendicular lines
- Find perimeter, area, and volume
- Identify congruent figures
- Identify point and line symmetry
- Identify and name an ordered pair
- Transform a figure on a grid-translation, reflection, rotation
- Name and classify prisms and pyramids
- Solve story problems involving geometry

- Use a protractor/compass to construct circles
- Define and create tessellations

Learner Objective #4:   **Students will use appropriate tools to measure accurately. Students will use measurements in problem-solving situations.**

- Measure in metric length, volume, and mass
- Read temperature on Celsius and Fahrenheit scales
- Tell time in hours, minutes, and seconds
- Measure length, volume, and mass in customary units
- Conversion of units in both customary and metric systems
- Use a formula to solve a word problem
- Add and subtract time

Learner Objective #5:   **Students will use data and statistics in problem-solving situations.**

- Read, interpret, analyze, and create graphs (bar, line, broken line, circle, and pictograph)
- Find the mean, median, and mode
- Conduct a probability experiment to determine possible outcomes
- Draw a tree diagram
- Find and compare probabilities

Learner Objective #6:   **Students will use algebraic patterns and generalizations to define and solve problems.**

- Identify and use the properties of Addition and Multiplication (Associative, Commutative, Distributive, Inverse, and Identity)
- Use a variable to write a number sentence