

MONROE COUNTY COMMUNITY SCHOOL CORPORATION  
CURRICULUM GUIDE

**MIDDLE SCHOOL MATHEMATICS  
GRADE 7 - ACCELERATED**

**PROFICIENCY 1: STUDENTS WILL EXPLORE ALGEBRAIC CONCEPTS AND PROCESSES**

- 1.7.1 Translate word phrases into expressions or equations
- 1.7.2 Use the order of operations to evaluate numerical expressions
- 1.7.3 Solve one-step and multi-step equations or inequalities using inverse operations
- 1.7.4 Select strategies to solve multi-step word problems
- 1.7.5 Evaluate variable expressions

**PROFICIENCY 2: STUDENTS WILL DEVELOP COMPUTATIONAL PROFICIENCY WITHIN THE DECIMAL SYSTEM**

- 2.7.1 Simplify or evaluate expressions using exponents
- 2.7.2 Write decimal numbers in expanded form with positive and/or negative exponents
- 2.7.3 Identify and use basic number properties to solve multi-step problems (associative, commutative, distributive, identity, and inverse)
- 2.7.4 Round decimal numbers to a specific place

**PROFICIENCY 3: STUDENTS WILL DEMONSTRATE COMPUTATIONAL PROFICIENCY WITH INTEGERS**

- 3.7.1 Locate positive and negative numbers on a number line
- 3.7.2 Order a set of positive and negative numbers sequentially
- 3.7.3 Explain and find the absolute value of a decimal number
- 3.7.4 Find the sum, difference, product, or quotient of any positive and/or negative numbers
- 3.7.5 Apply the rule of exponents in problem-solving
- 3.7.6 Express a decimal number in scientific notation

**PROFICIENCY 4:       STUDENTS WILL DEVELOP COMPUTATIONAL PROFICIENCY WITH RATIONAL NUMBERS**

- 4.7.1   Simplify fractions and find equivalent forms
- 4.7.2   Identify prime and composite numbers
- 4.7.3   Write the prime factorization of a number with and without exponents
- 4.7.4   Find the greatest common factor and least common multiple of two or more numbers using prime factorization
- 4.7.5   Use different strategies to compare fractions
- 4.7.6   Calculate the sum, difference, product, and quotient of any two rational numbers
- 4.7.7   Convert fractions into decimals and vice versa

**PROFICIENCY 5:       STUDENTS WILL DEVELOP AN UNDERSTANDING OF EQUATIONS AND INEQUALITIES**

- 5.7.1   Use properties of equality to solve equations
- 5.7.2   Simplify both sides of an equation
- 5.7.3   Solve one-step and multi-step equations or inequalities using inverse operations
- 5.7.4   Use the rules of inequalities to solve one and two-step problems with the four operations
- 5.7.5   Translate a word problem into an equation or inequality and solve

**PROFICIENCY 6:       STUDENTS WILL DEVELOP AN UNDERSTANDING OF GEOMETRY AND ITS APPLICATIONS**

- 6.7.1   Identify a variety of plane and solid geometric figures and know their unique qualities
- 6.7.2   Demonstrate the meaning and use of pi
- 6.7.3   Solve problems involving circles and their circumferences
- 6.7.4   Identify and measure angles between 0 and 360 degrees
- 6.7.5   Discuss the relationship of angles formed by parallel lines and a transversal
- 6.7.6   Identify polygons and find their perimeter
- 6.7.7   Discuss congruent figures and their properties
- 6.7.8   Use the appropriate formula to find areas of plane figures

- 6.7.9 Use appropriate formulas to calculate volume and surface area of prisms, cylinders, cones, pyramids, and spheres

**PROFICIENCY 7: STUDENTS WILL DEVELOP COMPUTATIONAL PROFICIENCY WITH RATIOS, PROPORTIONS, AND PERCENTS**

- 7.7.1 Solve a word problem by setting up a proportion
- 7.7.2 Find scale drawing measurements and actual measurements using ratios or proportions
- 7.7.3 Show equivalent forms of percent, fractions, and decimals
- 7.7.4 Identify and find the percentage, base, and rate in a given problem
- 7.7.5 Calculate the percent of increase or decrease of two quantities
- 7.7.6 Solve a problem involving simple interest, discount or commission, and sales tax

**PROFICIENCY 8: STUDENTS WILL DEVELOP AN UNDERSTANDING OF GRAPHING IN A COORDINATE PLANE**

- 8.7.1 Locate points with given coordinates on a grid
- 8.7.2 Determine if an ordered pair of numbers is a solution of a given equation
- 8.7.3 List a table of values for an equation in two variables
- 8.7.4 Graph the ordered pair solutions of a linear equation
- 8.7.5 Graph two linear equations on the same axis to determine the point of intersection
- 8.7.6 Use linear graphs to show relationships in problem-solving
- 8.7.7 Solve and graph an inequality with two variables

**PROFICIENCY 9: STUDENTS WILL DEVELOP AN UNDERSTANDING OF SQUARE ROOTS AND RIGHT TRIANGLES**

- 9.7.1 Approximate the square root of a number using the divide and average method
- 9.7.2 Use a table of square roots
- 9.7.3 Discuss the Pythagorean theorem and its converse and be able to find the missing side in a right triangle using the Pythagorean rule and trigonometric ratios (sine, cosine, and tangent)
- 9.7.4 Find missing sides or angles using properties of similar triangles

**PROFICIENCY 10: STUDENTS WILL DEVELOP AN UNDERSTANDING OF PROBABILITY**

- 10.7.1 Explain the meaning of a number “factorial”
- 10.7.2 Find the number of permutations of a group of items
- 10.7.3 Find the basic probability of an event
- 10.7.4 Calculate the odds in favor of and against an event

**PROFICIENCY 11: STUDENTS WILL DEVELOP AN UNDERSTANDING OF STATISTICS**

- 11.7.1 Interpret and analyze data on a bar, line, picture, and circle graph
- 11.7.2 Identify the appropriate graph for a given set of data
- 11.7.3 Construct a bar, line, picture, or circle graph for a set of numerical data
- 11.7.4 Find the mean, median, mode, and range in a set of data

**PROFICIENCY 12: STUDENTS WILL BE INTRODUCED TO POLYNOMIALS**

- 12.7.1 Identify different types of polynomials
- 12.7.2 Find the degree of a polynomial
- 12.7.3 Simplify a polynomial by adding or subtracting like terms