MONROE COUNTY COMMUNITY SCHOOL CORPORATION
CURRICULUM GUIDE

MIDDLE SCHOOL MATHEMATICS
GRADE 7

PROFICIENCY 1: STUDENTS WILL DEVELOP STRATEGIES FOR SOLVING PROBLEMS BY TRANSLATING DATA INTO MATHEMATICAL LANGUAGE

1.7.1 Continue to solve problems by strategies such as making a list, drawing a picture, or looking for a pattern

1.7.2 Solve problems that require interpreting a diagram or drawing, using logical reasoning, or using guess and check

1.7.3 Solve a simpler problem to suggest a solution to a more complex one

1.7.4 Recognize and use properties of numbers to solve problems (associative, commutative, identity, and inverse)

PROFICIENCY 2: STUDENTS WILL DEVELOP AND PRACTICE EFFECTIVE MATHEMATICAL COMMUNICATION

2.7.1 Keep math notebooks and / or journals

2.7.2 Discuss or justify solutions to problems

2.7.3 Participate in learning groups to share ideas or arrive at solutions

2.7.4 Communicate strategies for solving problems using appropriate mathematical vocabulary

2.7.5 Create and solve word problems

PROFICIENCY 3: STUDENTS WILL DEVELOP REASONING SKILLS AND APPLY THEM TO PROBLEM-SOLVING SITUATIONS

3.7.1 Develop and apply appropriate deductive and / or inductive reasoning to solve a problem

3.7.2 Given a problem-solving situation, identify one or more strategies for solving the problem

3.7.3 Demonstrate an ability to make conjectures, gather evidence, and formulate rules in problem-solving

PROFICIENCY 4: STUDENTS WILL RECOGNIZE AND MAKE CONNECTIONS

4.7.1 Discuss applications of numbers in everyday life

4.7.2 Recognize relationships and patterns within a set of rational numbers

4.7.3 Recognize that topics such as measurement, statistics, and problem-solving have implications for social studies, science, home economics, etc.

4.7.4 Investigate and recognize the role of mathematics in our society

4.7.5 Relate geometric concepts and terminology to everyday situations, life skills, nature, art, etc.

PROFICIENCY 5: STUDENTS WILL DEVELOP AN UNDERSTANDING OF THE PLACE-VALUE SYSTEM FOR WHOLE NUMBERS AND DECIMALS

5.7.1 Read and interpret whole numbers and decimals

5.7.2 Recognize the relationship between money and decimals

5.7.3 Express any whole number in exponential form

5.7.4 Order a set of whole numbers and decimals sequentially

5.7.5 Round whole numbers and decimals to a specified place

5.7.6 Read and interpret rational numbers

PROFICIENCY 6: STUDENTS WILL DEVELOP AN UNDERSTANDING OF FRACTIONS, PERCENT, AND INTEGERS

6.7.1 Distinguish between factors and multiples

6.7.2 Identify prime and composite numbers

6.7.3 Determine the prime factorization of whole numbers

6.7.4 Find the greatest common factor and least common multiple of two whole numbers

6.7.5 Explore the relationships between fractions, decimals, and percents

6.7.6 Convert fractions, decimals, and percents into equivalent forms

6.7.7 Express fractions in simplest form

6.7.8 Order a set of fractions sequentially

6.7.9 Show connections between integers and everyday situations

6.7.10 Graph ordered pairs on a coordinate plane

PROFICIENCY 7: STUDENTS WILL DEVELOP COMPUTATIONAL PROFICIENCY WITHIN THE SET OF REAL NUMBERS

7.7.1 Given a problem involving adding, subtracting, multiplying or dividing two fractions with like or unlike denominators, solve the problem with or without regrouping

7.7.2 Compute the sum, difference, product or quotient of any two whole numbers, decimals, or integers

7.7.3 Identify and apply the order of operations in a multi-step problem

PROFICIENCY 8: STUDENTS WILL DEVELOP ESTIMATING SKILLS WITH WHOLE NUMBERS, FRACTIONS, AND DECIMALS WITH APPLICATION TO MEASUREMENT, GEOMETRY, AND PROBLEM-SOLVING

8.7.1 Estimate the results of a problem involving the four operations of whole numbers, decimals, and fractions

8.7.2 Recognize when an estimated answer is reasonable

8.7.3 Given a problem-solving situation, make a reasonable estimate relating to size, quantity, temperature, capacity, cost, passage of time, etc.

PROFICIENCY 9: STUDENTS WILL DEVELOP AN UNDERSTANDING OF GEOMETRIC TERMS AND CONCEPTS AND APPLY THOSE IN PROBLEM-SOLVING ACTIVITIES

9.7.1 Identify the properties of a plane or solid figure

9.7.2 Given a set of plane figures and their attributes, identify similar polygons and their corresponding parts

9.7.3 Compute area and perimeter of simple polygons

9.7.4 Discuss the meaning of pi

9.7.5 Find the area and circumference of a circle

PROFICIENCY 10: STUDENTS WILL DEVELOP MEASUREMENT SKILLS USING METRIC AND/OR CUSTOMARY UNITS

10.7.1 Identify and use appropriate units of measurement

10.7.2 Given a plane figure and a ruler, measure each side using customary or metric units

10.7.3 Using a protractor, measure any angle between 0 and 180 degrees

10.7.4 Given a polygon or circle, measure the necessary parts to determine its area, perimeter, or circumference

10.7.5 Convert both metric and customary measurements to equivalent forms

PROFICIENCY 11: STUDENTS WILL COLLECT, ORGANIZE, ANALYZE, AND INTERPRET DATA

11.7.1 Interpret and analyze data on a bar, line, picture, and circle graph

11.7.2 Choose an appropriate scale to construct a graph or diagram using a set of numerical data

11.7.3 Collect, organize, and present numerical data in a variety of forms

11.7.4 Identify the appropriate graph for a given set of data

11.7.5 Find mean, median, and mode of a set of data

11.7.6 Make appropriate inferences and predictions based on analysis of a set of data

PROFICIENCY 12: STUDENTS WILL DEVELOP AN UNDERSTANDING OF THE BASIC CONCEPTS OF PROBABILITY AND APPLY THESE TO MAKING APPROPRIATE PREDICTIONS

12.7.1 Determine the number arrangements of several objects by using the basic counting principle or by using a diagram

12.7.2 Find the basic probability of an event

PROFICIENCY 13: STUDENTS WILL DEVELOP AN UNDERSTANDING OF RATIOS, PROPORTIONS, AND PERCENTS WITH APPLICATIONS TO PROBLEM SOLVING

13.7.1 Identify situations in which proportions may be used to solve problems

13.7.2 Given a situation, set up and solve a proportion

13.7.3 Solve real life problems involving discount, tax, interest, markup, and / or statistics using percent

13.7.4 Find a percentage of a number, find the percentage one number is of another number, and find the number when a percentage is known

PROFICIENCY 14: STUDENTS WILL EXPLORE ALGEBRAIC CONCEPTS AND PROCESSES

14.7.1 Translate word phrases into algebraic equations or expressions

14.7.2 Given a one step equation, determine the value of the variable by performing inverse operations

14.7.3 Given a specific value for a variable, evaluate an expression

PROFICIENCY 15: STUDENTS WILL DEVELOP AND REINFORCE APPROPRIATE SKILLS IN THE USE OF CALCULATORS IN PROBLEM-SOLVING SITUATIONS

15.7.1 Use the calculator to solve word problems involving whole numbers and decimals

15.7.2 Use the calculator to explore patterns and relationships among wholes, decimals, and rationals