



SCHOOL DISTRICT OF MONROE

Preparing for the Future, One Child at a Time

Mathematics (Grade 5)

Course Description:

The curriculum for this course is developed from the [Common Core State Standards for Mathematics](#). In fifth grade mathematics, instructional time will focus on three critical areas: (1) developing fluency with addition, subtraction, multiplication, and division of fractions (unit fractions divided by whole numbers and whole numbers divided by unit fractions), (2) extending division problems to two-digit divisors, integrating decimal fractions in the place value system, developing understanding of operations with decimals to hundredths, and developing fluency with whole number and decimal operations, and (3) developing an understanding of volume.

Mastery Standards:

Operations and Algebraic Thinking (5.OA)

Use parentheses, brackets, or braces in numerical expressions, and evaluate expressions with these symbols.

CCSS.MATH.CONTENT.5.OA.A.1

Number and Operations in Base Ten (5.NBT)

Recognize that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right and 1/10 of what it represents in the place to its left.

CCSS.MATH.CONTENT.5.NBT.A.1

Fluently multiply multi-digit whole numbers using the standard algorithm.

CCSS.MATH.CONTENT.5.NBT.B.5

Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.

CCSS.MATH.CONTENT.5.NBT.B.6

Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.

CCSS.MATH.CONTENT.5.NBT.B.7

Multiply and divide decimals using concrete models or drawings and strategies based on place value, properties or operations, and/or the relationship between multiplication and division; relate the strategy to a written method and explain the reasoning used.

Number and Operations- Fractions (5.NF)

Add and subtract fractions with unlike denominators (including mixed numbers) by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or difference of fractions with like denominators. *For example, $2/3 + 5/4 = 8/12 + 15/12 = 23/12$. (In general, $a/b + c/d = (ad + bc)/bd$.)*

CCSS.MATH.CONTENT.5.NF.A.1

Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction.

CCSS.MATH.CONTENT.5.NF.B.4

Measurement and Data (5.MD)

Apply the formulas $V = l \times w \times h$ and $V = b \times h$ for rectangular prisms to find volumes of right rectangular prisms with whole-number edge lengths in the context of solving real world and mathematical problems.

Unit	Description of Unit and Learning Targets
<p>Unit Title: Operations and Algebraic Thinking</p> <p><u>Essential Questions:</u></p> <ul style="list-style-type: none"> How is the order of an expression determined? 	<p>Students will use grouping symbols in numerical expressions and evaluate expressions with these symbols. They will identify and generate numerical relationships and patterns, including two given rules for ordered pairs on a coordinate plane.</p> <p><u>Learning Targets:</u></p> <ul style="list-style-type: none"> I can write and evaluate expressions with grouping symbols.
<p>Unit Title: Number and Operations in Base Ten</p> <p><u>Essential Questions:</u></p> <ul style="list-style-type: none"> What algorithms make multiplying and dividing more efficient for me? What strategies can be used to add, subtract, multiply, and divide decimals? 	<p>Students will develop understanding of why division procedures work based on the meaning of base-ten numerals and properties of operations. They will finalize fluency with multi-digit addition, subtraction, multiplication and division. They apply their understanding of models for decimals and decimal notation to add and subtract decimals to hundredths. They make reasonable estimates of their results. Students will understand why the procedures for multiplying and dividing decimals make sense. They compute products and quotients of decimals to hundredths efficiently and accurately.</p> <p><u>Learning Targets:</u></p> <ul style="list-style-type: none"> I understand the place value system, and I recognize that the position of the number defines its value. I can fluently multiply multi-digit whole numbers using the standard algorithm. I can fluently divide multi-digit whole numbers. I can add and subtract decimal numbers through the hundredths place. I can multiply and divide decimal numbers through the hundredths place.
<p>Unit Title: Number and Operations--Fractions</p> <p><u>Essential Questions:</u></p> <ul style="list-style-type: none"> How can knowing whole number algorithms for all operations help me add, subtract, and multiply fractions? 	<p>Students will apply their understanding of fractions and fraction models to represent addition and subtraction of fractions with unlike denominators, using equivalent fractions as a strategy. They make reasonable estimates of sums and differences of fractions.</p> <p><u>Learning Targets:</u></p> <ul style="list-style-type: none"> I can add and subtract fractions and mixed numbers. I can multiply fractions by fractions and whole numbers.
<p>Unit Title: Measurement and Data</p> <p><u>Essential Questions:</u></p> <ul style="list-style-type: none"> What does finding the volume of a rectangle prism mean? 	<p>Students will convert like measurement units within a given measurement system and use these conversions in solving multi-step, real world problems. Students will represent and interpret data by making a line plot to display a data set of measurements in fractions of a unit. Students will understand concepts of volume and relate volume to multiplication and to addition by recognizing volume as an attribute of solid figures, measuring volumes by counting unit cubes, and solving real world and mathematical problems involving volume.</p> <p><u>Learning Targets:</u></p> <ul style="list-style-type: none"> I can use formulas to find the volume of rectangular prisms.
<p>Unit Title: Geometry</p>	<p>Students will recognize volume as an attribute of three-dimensional</p>

Essential Questions:

- What does the volume of a rectangular prism mean and how can it be found?

space and can be measured by finding the total number of cubic units required to fill the space without gaps or overlaps. They select appropriate units, strategies, and tools for solving problems that involve estimating and measuring volume. They decompose 3-D shapes and find volumes of rectangular prisms by viewing them as decomposed into layers of arrays of cubes. They measure necessary attributes of shapes in order to determine volumes to solve real world and mathematical problems.

Learning Targets:

- I can use formulas to find the volume of rectangular prisms.