2024-2025

Grade 3 Scope and Sequence

Subject: Math

CRESTHAVEN ACADEMY
CHARTER SCHOOL

Module 1 Title: Multiplication and Division with Units of 2,3,4,5, and 10 **Module 2 Title:** Place Value Concepts Through Metric Measurement	**Module 2 Title:** Place Value Concepts Through Metric Measurement **Module 3 Title:** Multiplication and Division Units of 0, 1, 6, 7, 8, and 9	**Module 3 Title:** Multiplication and Division Units of 0, 1, 6, 7, 8, and 9 **Module 4 Title:** Multiplication and Area	**Module 5 Title:** Fractions as Numbers
Time Frame: 7 Weeks **Module 1** Topic A - Lessons 1-5 Topic B- Lessons 6-9 Topic C- Lessons 10-14 Topic D- Lessons 15-18 Topic E - Lessons 19-23 **Module 2** Topic A- Lessons 1-4	**Time Frame:** 12 weeks **Module 2** Topic A- Lessons 5-7 Topic B- Lessons 8-12 Topic C - Lessons 13-19 Topic D - Lessons 20-25 **Module 3** Topic A- Lessons 1-6 Topic B - Lessons 7-12	**Time Frame:** 9 weeks **Module 3** Topic C - Lessons 13-19 Topic D- Lessons 20-25 **Module 4** Topic A- Lessons 1-5 Topic B- Lessons 6-9 Topic C - Lessons 10-12 Topic D - Lessons 13-19	**Time Frame:** 9 weeks **Module 5** Topic A- Lessons 1 -5 Topic B- Lessons 6-9 Topic C- Lessons 10-12 Topic D- Lesson 13-19
Description: **Module 1 is broken into 5 Topics** **Topic A** **Conceptual Understanding of Multiplication** Students connect their understanding of equal groups and repeated addition to multiplication. They identify the	**Description:** **Module 2 is broken into 4 Topics** **Topic A** **Place Value Concepts Through Metric Measurement** In module 2, students compose and decompose metric measurement units and relate them to place value units up to	**Description:** **Module 3 is broken into 4 Topics** **Topic C** **Analysis of Patterns Using Units of 9, 0, and 1** Students explore patterns to identify and apply strategies for multiplying and dividing with 9, 0,	**Description:** **Module 5 is broken into 5 Topics** **Topic A** **Partition a Whole into Equal Parts** Students begin to formalize their understanding of fractions as numbers by transitioning from

number of groups, the number in each group, and the total within equal-groups models and arrays. They write multiplication equations to represent the equal groups and arrays. Students interpret the meaning of the factors as the number of groups and the number in each group and solve word problems.

Topic B
Conceptual Understanding of Division

Students connect their understanding of equal groups and repeated addition to multiplication. They identify the number of groups, the number in each group, and the total within equal-groups models and arrays. They write multiplication equations to represent the equal groups and arrays. Students interpret the meaning of the factors as the number of groups and the number in each group and solve word problems.

Topic C
Properties of Multiplication

Students connect their understanding of equal groups and repeated addition to multiplication. They identify the number of groups, the number in each group, and the total within equal-groups models and arrays. They write multiplication equations to represent the equal groups and arrays. Students interpret the meaning of the factors as the number of

thousand. They use place value understanding and the vertical number line to round two- and three-digit numbers. Students also add and subtract two- and three-digit numbers within 1,000 by using a variety of strategies, including the standard algorithm.

Topic B
Rounding to the Nearest Ten and Hundred

Reading temperatures on a thermometer provides an initial context for students to round to the nearest ten or hundred. To round a number, students determine the two consecutive tens or hundreds that the number is between and then determine which ten or hundred is closer by thinking about the number in relation to the halfway mark. The number line, when presented vertically, provides a new perspective on a familiar tool and is used to help students to round numbers. Students then apply their rounding skills to estimate sums and differences.

Topic C
Simplifying Strategies to Find Sums and Differences

Students apply their knowledge of the vertical number line to the scale on a scaled bar graph. They represent data in a scaled bar graph and solve addition and subtraction problems related to scaled bar graphs. They explore a variety of addition and

and 1. They look for and generalize patterns in the multiplication table and in input–output tables to solve problems. They synthesize their understanding of multiplication with one-digit factors to write their own one-step word problems and assess the reasonableness of solutions to two-step word problems.

Topic D
Multiplication with Multiples of 10 and Further Application of Concepts

To culminate the module, students use place value models, the properties of operations, and familiar facts to multiply multiples of 10 by one-digit numbers. They apply their learning to solve two-step word problems and share solution strategies. Students revisit the counting collection from topic A, this time applying their new understandings from module 3. Opportunities to extend learning are available with an optional lesson on multiplying and dividing by 11 and 12 and an optional lesson on solving word problems in a multi-part task.

Description:
Module 4 is broken into 4 Topics

Topic A
Foundations for Understanding Area

recognizing fractional parts of geometric shapes to partitioning and recognizing fractional parts of concrete objects and pictorial models. They begin to understand fractions as numbers by naming the fractional parts of the whole in unit form and describing the relationship between the number of fractional parts and the size of each part. Students define 1 of a fractional unit as a unit fraction, identify the number of unit fractions needed to make 1 whole, and name unit fractions in fraction form.

Topic B
Concepts of Area Measurement

Students formalize the use of multiplication to determine the area of a rectangle. They complete grids to show the rows and columns of squares within a rectangular array and connect the number of rows and columns to the side lengths. Students transition to using area models and relate the side lengths to area by writing multiplication equations.

Topic C
Applying Properties of Operations to Area

Students apply multiplication strategies from modules 1 and 3 to find the areas of rectangles. They compose (and decompose) larger rectangles from (and into) smaller rectangles. They use the commutative, associative, and

groups and the number in each group and solve word problems.

Topic D
Two Interpretations of Division
Students solidify their understanding of the relationship between multiplication and division and express division as both unknown factor problems and division equations. Students describe the quotient as either the number of groups or the size of each group and draw tape diagrams to represent the problems.

Topic E
Application of Multiplication and Division Concepts
Students apply the distributive property to complete multiplication and division problems and explore the foundations of the associative property of multiplication by breaking apart arrays into smaller arrays. Students solve two-step word problems using multiplication and division.

Module 2
Module 2 is broken into 4 Topics

Topic A
Place Value Concepts Through Metric Measurement
In module 2, students compose and decompose metric

subtraction strategies based on place value, the properties of operations, and the relationship between addition and subtraction. The strategies include adding and subtracting like units, making the next ten or hundred, taking from a ten or hundred, and using compensation. Emphasis is placed on thinking flexibly and building toward the use of mental math. Throughout the topic, students share and critique solution strategies for addition and subtraction problems and explain how their choice in strategy helps them to add or subtract efficiently.

Topic D
Two- and Three-Digit Measurement Addition and Subtraction

Students use concrete and pictorial place value models alongside vertical form to represent and record the work of the standard algorithm for addition and the standard algorithm for subtraction. They compose and decompose units as needed and estimate to assess the reasonableness of their answers. Students apply their computation skills to select an appropriate strategy and solve one- and two-step word problems involving measurement contexts and units.

Module 3
Module is broken into 4 Topics

Students expand their understanding of polygons to recognize area as an attribute. They tile polygons with square units, and they count each square or skip-count to find the area of each polygon. As the topic progresses, students move to representing the area pictorially on grid paper. They measure the side lengths of rectangles with a ruler and relate each measure to the number of tiles that compose that side length.

Topic B
Concepts o Area Measurement
Students formalize the use of multiplication to determine the area of a rectangle. They complete grids to show the rows and columns of squares within a rectangular array and connect the number of rows and columns to the side lengths. Students transition to using area models and relate the side lengths to area by writing multiplication equations.

Topic C
Applying Properties of Operations to Area

Students apply multiplication strategies from modules 1 and 3 to find the areas of rectangles. They compose (and decompose) larger rectangles from (and into) smaller rectangles. They use the commutative, associative, and

distributive properties to multiply side lengths and to find all possible side lengths of rectangles with a given area.

Topic D
Applications of Area
Students apply area concepts and strategies to a variety of mathematical and real-world problems. They compose and decompose rectilinear shapes to find area, utilizing the attributes of rectangles to find unknown side lengths when necessary. They consider reasonableness related to area in real-world situations and use line plots to analyze measurement data based on area.

measurement units and relate them to place value units up to thousand. They use place value understanding and the vertical number line to round two- and three-digit numbers. Students also add and subtract two- and three-digit numbers within 1,000 by using a variety of strategies, including the standard algorithm.	**Topic A** **Multiplication and Division Concepts with an Emphasis on Units of 6 and 8** Students begin module 3 with a counting collection of pre grouped objects to apply their understanding of multiplication from module 1 and to provide formative data about their counting strategies. Throughout the topic, students apply multiplication and division concepts, representations, and strategies from module 1 to the units of 6 and 8. Students see sixes as 2 threes and eights as 2 fours. They use the commutative, distributive, and associative properties to help them multiply and divide. Students advance their representations to more abstract arrays and tape diagrams and begin to use a letter to represent an unknown quantity. **Topic B** **Multiplication and Division Concepts with an Emphasis on the Unit of 7** With a focus on 7 as a factor, students extend their work with the properties of operations and use different strategies to multiply efficiently. They create expressions with known facts to find products and quotients of unfamiliar facts by flexibly applying the distributive property and regrouping factors by using the associative property.	distributive properties to multiply side lengths and to find all possible side lengths of rectangles with a given area. **Topic D** **Applications of Area** Students apply area concepts and strategies to a variety of mathematical and real-world problems. They compose and decompose rectilinear shapes to find area, utilizing the attributes of rectangles to find unknown side lengths when necessary. They consider reasonableness related to area in real-world situations and use line plots to analyze measurement data based on area.	

	Students apply their learning as they solve one-step word problems.		
Assessments: **Summative** • Topic Quizzes • Module Assessments **Formative** • Entry/ Exit Tickets • Progress Monitoring • Classwork/ Homework • Guided Practice *Include Benchmarks	**Assessments:** **Summative** • Topic Quizzes • Module Assessments **Formative** • Entry/ Exit Tickets • Progress Monitoring • Classwork/ Homework • Guided Practice *Include Benchmarks	**Assessments:** **Summative** • Topic Quizzes • Module Assessments **Formative** • Entry/ Exit Tickets • Progress Monitoring • Classwork/ Homework • Guided Practice *Include Benchmarks	**Assessments:** **Summative** • Topic Quizzes • Module Assessments **Formative** • Entry/ Exit Tickets • Progress Monitoring • Classwork/ Homework • Guided Practice *Include Benchmarks

Standards

Module 1

3.OA.A.2 Interpret whole-number quotients of whole numbers, e.g., interpret 56 ÷ 8 as the number of objects in each share when 56 objects are partitioned equally into 8 shares, or as a number of shares when 56 objects are partitioned into equal shares of 8 objects each. For example, describe and/or represent a context in which a number of shares or a number of groups can be expressed as 56 ÷ 8.

3.OA.A.3 Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.

3.OA.A.4 Determine the unknown whole number in a multiplication or division equation relating three whole numbers.
For example, determine the unknown number that makes the equation true in each of the equations 8 × ? = 48, 5 = ? ÷ 3, 6 × 6 = ?.

2.OA.C.3 Determine whether a group of objects (up to 20) has an odd or even number of members, e.g., by pairing objects or counting them by 2s; write an equation to express an even number as a sum of two equal addends.
2.OA.C.4 Use addition to find the total number of objects arranged in rectangular arrays with up to 5 rows and up to 5 columns; write an equation to express the total as a sum of equal addends.

3.OA.B.5 Apply properties of operations as strategies to multiply and divide.
Examples: If 6 × 4 = 24 is known, then 4 × 6 = 24 is also known. (Commutative property of multiplication.) 3 × 5 × 2 can be found by 3 × 5 = 15, then 15 × 2 = 30, or by 5 × 2 = 10, then 3 × 10 = 30. (Associative property of multiplication.) Knowing that 8 × 5 = 40 and 8 × 2 = 16, one can find 8 × 7 as 8 × (5 + 2) = (8 × 5) + (8 × 2) = 40 + 16 = 56. (Distributive property.)

3.OA.B.6 Understand division as an unknown-factor problem.
For example, find 32 ÷ 8 by finding the number that makes 32 when multiplied by 8.

2.NBT.A.2 Count within 1000; skip-count by 5s, 10s, and 100s.

3.OA.C.7 With accuracy and efficiency, multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers.

3.OA.D.8 Solve two-step word problems, including problems involving money, using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.

Module 2

3.OA.D.8 Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.

2.NBT.B.7 Add and subtract within 1000, 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. Understand that in adding or subtracting three-digit numbers, one adds or subtracts hundreds and hundreds, tens and tens, ones and ones; and sometimes it is necessary to compose or decompose tens or hundreds.

2.NBT.B.8 Mentally add 10 or 100 to a given number 100–900, and mentally subtract 10 or 100 from a given number 100–900.

3.NBT.A.1 Use place value understanding to round whole numbers to the nearest 10 or 100.

3.NBT.A.2 Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.

2.MD.B.6 Represent whole numbers as lengths from 0 on a number line diagram with equally spaced points corresponding to the numbers 0, 1, 2,..., and represent whole-number sums and differences within 100 on a number line diagram.

3.MD.A.2 Measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (l). Add, subtract, multiply, or divide to solve one-step word problems involving masses or volumes that are given in the same units, e.g., by using drawings (such as a beaker with a measurement scale) to represent the problem.

3.MD.B.3 Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and two-step "how many more" and "how many less" problems using information presented in scaled bar graphs.For example, draw a bar graph in which each square in the bar graph might represent 5 pets.

Module 3

3.OA.A.1 Interpret products of whole numbers, e.g., interpret 5 × 7 as the total number of objects in 5 groups of 7 objects each.
For example, describe a context in which a total number of objects can be expressed as 5 × 7.

3.OA.A.2 Interpret whole-number quotients of whole numbers, e.g., interpret 56 ÷ 8 as the number of objects in each share when 56 objects are partitioned equally into 8 shares, or as a number of shares when 56 objects are partitioned into equal shares of 8 objects each.
For example, describe a context in which a number of shares or a number of groups can be expressed as 56 ÷ 8.

3.OA.A.3 Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.

3.OA.A.4 Determine the unknown whole number in a multiplication or division equation relating three whole numbers.
For example, determine the unknown number that makes the equation true in each of the equations 8 × ? = 48, 5 = __ ÷ 3, 6 × 6 = ?.

3.OA.B.5 Apply properties of operations as strategies to multiply and divide. Students need not use formal terms for these properties.

3.OA.B.6 Understand division as an unknown-factor problem. For example, find 32 ÷ 8 by finding the number that makes 32 when multiplied by 8.

3.OA.C.7 Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers.

3.OA.D.8 Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.
This standard is limited to problems posed with whole numbers and having whole-number answers; students should know how to perform operations in the conventional order when there are no parentheses to specify a particular order (Order of Operations).

3.OA.D.9 Identify arithmetic patterns (including patterns in the addition table or multiplication table), and explain them using properties of operations.
For example, observe that 4 times a number is always even, and explain why 4 times a number can be decomposed into two equal addends.

3.NBT.A.3 Multiply one-digit whole numbers by multiples of 10 in the range 10–90 (e.g., 9 × 80, 5 × 60) using strategies based on place value and properties of operations.

Module 4

2.MD.A.2 Measure the length of an object twice, using length units of different lengths for the two measurements; describe how the two measurements relate to the size of the unit chosen.

2.G.A.1 Recognize and draw shapes having specified attributes, such as a given number of angles or a given number of equal faces. Identify triangles, quadrilaterals, pentagons, hexagons, and cubes.
Sizes are compared directly or visually, not compared by measuring.

2.G.A.3 Partition circles and rectangles into two, three, or four equal shares, describe the shares using the words halves, thirds, half of, a third of, etc., and describe the whole as two halves, three thirds, four fourths. Recognize that equal shares of identical wholes need not have the same shape.

3.MD.C.5 Recognize area as an attribute of plane figures and understand concepts of area measurement.

- 3.MD.C.5.aA square with side length 1 unit, called "a unit square," is said to have "one square unit" of area, and can be used to measure area.
- 3.MD.C.5.bA plane figure which can be covered without gaps or overlaps by n unit squares is said to have an area of n square units.

3.MD.C.6 Measure areas by counting unit squares (square cm, square m, square in, square ft, and improvised units).

3.G.A.1 Understand that shapes in different categories (e.g., rhombuses, rectangles, and others) may share attributes (e.g., having four sides), and that the shared attributes can define a larger category (e.g., quadrilaterals). Recognize rhombuses, rectangles, and squares as examples of quadrilaterals, and draw examples of quadrilaterals that do not belong to any of these subcategories.

3.MD.C.7.a Find the area of a rectangle with whole-number side lengths by tiling it, and show that the area is the same as would be found by multiplying the side lengths.

3.MD.C.7.b Multiply side lengths to find areas of rectangles with whole-number side lengths in the context of solving real world and mathematical problems, and represent whole-number products as rectangular areas in mathematical reasoning.

3.MD.C.7.c Use tiling to show in a concrete case that the area of a rectangle with whole-number side lengths a and $b + c$ is the sum of $a \times b$ and $a \times c$. Use area models to represent the distributive property in mathematical reasoning.

3.MD.C.7.d Recognize area as additive. Find areas of rectilinear figures by decomposing them into non-overlapping rectangles and adding the areas of the non-overlapping parts, applying this technique to solve real world problems.

Module 5

3.NF.A.1 Understand a fraction $1/b$ as the quantity formed by 1 part when a whole is partitioned into b equal parts; understand a fraction a/b as the quantity formed by a parts of size $1/b$.

3.G.A.2 Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole.
For example, partition a shape into 4 parts with equal area, and describe the area of each part as 1/4 of the area of the shape.

3.MD.B.4 Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot, where the horizontal scale is marked off in appropriate units—whole numbers, halves, or quarters.

3.NF.A.2.a Represent a fraction $1/b$ on a number line diagram by defining the interval from 0 to 1 as the whole and partitioning it into b equal parts. Recognize that each part has size $1/b$ and that the endpoint of the part based at 0 locates the number $1/b$ on the number line.

3.NF.A.2.b Represent a fraction a/b on a number line diagram by marking off a lengths $1/b$ from 0. Recognize that the resulting interval has size a/b and that its endpoint locates the number a/b on the number line.
3.NF.A.3.a Understand two fractions as equivalent (equal) if they are the same size, or the same point on a number line.

3.NF.A.3.b Recognize and generate simple equivalent fractions, (e.g., 1/2 = 2/4, 4/6 = 2/3). Explain why the fractions are equivalent, e.g., by using a visual fraction model.

3.NF.A.3.c Express whole numbers as fractions, and recognize fractions that are equivalent to whole numbers.
Examples: Express 3 in the form 3 = 3/1; recognize that 6/1 = 6; locate 4/4 and 1 at the same point of a number line diagram.

3.NF.A.3.d Compare two fractions with the same numerator or the same denominator by reasoning about their size. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with the symbols >, =, or <, and justify the conclusions, e.g., by using a visual fraction model.

Grade: 3rd Grade