Elementary School Teaching and Learning

2022-2023 Scope and Sequence

Mathematics – Grade 4

FIRST NINE WEEKS	OVERVIEW
	In module 1, students use multiplicative comparisons to describe place value relationships and the relative sizes of metric units. They build fluency with the standard algorithm for addition and subtraction with numbers of up to 6 digits. In module 2, students multiply two-digit numbers by one-digit numbers by using the distributive property. They divide two- and three-digit numbers by one-digit numbers by using the break apart and distribute strategy. Students apply their multiplication skills to convert customary units of length. They also identify factors and multiples of numbers within 100.
ASSESSMENTS	
ASSESSMENT WINDOW	**ASSESSMENT NAME**
September 6- October 4	Aims Web Beginning of the Year

See the bottom of this document for a detailed description of the assessments as well as the parent/family resources.

UNIT	UNIT DURATION	PARENT/FAMILY RESOURCES	NORTH CAROLINA STANDARDS
Module 1 Place Value Concepts for Addition and Subtraction	24 Lessons	Module 1 Family Math	NC.4.OA.1- Interpret a multiplication equation as a comparison. Multiply or divide to solve word problems involving multiplicative comparisons using models and equations with a symbol for the unknown number. Distinguish multiplicative comparison from additive comparison NC.4.OA.3- Solve two-step word problems involving the four operations with whole numbers. • Use estimation strategies to assess reasonableness of answers. • Interpret remainders in word problems. • Represent problems using equations with a letter standing for the unknown quantity. NC.4.NBT.1- Explain that in a multi-digit whole number, a digit in one place represents 10 times as much as it represents in the place to its right, up to 100,000 NC.4.NBT.2- Read and write multi-digit whole numbers up to and including 100,000 using numerals, number names, and expanded form.

			NC.4.NBT.4- Add and subtract multi-digit whole numbers up to and including 100,000 using the standard algorithm with place value understanding. NC.4.MD.1- Know relative sizes of measurement units. Solve problems involving metric measurement. • Measure to solve problems involving metric units: centimeter, meter, gram, kilogram, Liter, milliliter. • Add, subtract, multiply, and divide to solve one-step word problems involving whole-number measurements of length, mass, and capacity that are given in metric units. NC.4.MD.2- Use multiplicative reasoning to convert metric measurements from a larger unit to a smaller unit using place value understanding, two column tables, and length models.
Module 2 Place Value Concepts for Multiplication and Division	28 Lessons	Module 2 Family Math	NC.4.OA.3- Solve two-step word problems involving the four operations with whole numbers. • Use estimation strategies to assess reasonableness of answers. • Interpret remainders in word problems. • Represent problems using equations with a letter standing for the unknown quantity. NC.4.OA.4- Find all factor pairs for whole numbers up to and including 50 to: • Recognize that a whole number is a multiple of each of its factors. • Determine whether a given whole number is a multiple of a given one-digit number. • Determine if the number is prime or composite. NC.4.OA.5- Generate and analyze a number or shape pattern that follows a given rule. NC.4.NBT.5- Multiply a whole number of up to three digits by a one-digit whole number, and multiply up to two two-digit numbers with place value understanding using area models, partial products, and the properties of operations. Use models to make

			connections and develop the algorithm. NC.4.NBT.6- Find whole-number quotients and remainders with up to three-digit dividends and one-digit divisors with place value understanding using rectangular arrays, area models, repeated subtraction, partial quotients, properties of operations, and/or the relationship between multiplication and division. NC.4. MD.1- Know relative sizes of measurement units. Solve problems involving metric measurement. • Measure to solve problems involving metric units: centimeter, meter, gram, kilogram, Liter, milliliter. • Add, subtract, multiply, and divide to solve one-step word problems involving whole-number measurements of length, mass, and capacity that are given in metric units. NC.4. MD.2- Use multiplicative reasoning to convert metric measurements from a larger unit to a smaller unit using place value understanding, two column tables, and length models. 4.MD.3- Solve problems with area and perimeter. • Find areas of rectilinear figures with known side lengths. • Solve problems involving a fixed area and varying perimeters and a fixed perimeter and varying areas. • Apply the area and perimeter formulas for rectangles in real world and mathematical problems.

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Mathematics – Grade 4

SECOND NINE WEEKS	OVERVIEW
	In module 3 students multiply numbers of up to four digits by one-digit numbers and two-digit numbers by two-digit numbers. Students also divide numbers of up to four digits by one-digit numbers, resulting in whole-number quotients and remainders.
ASSESSMENTS	
ASSESSMENT WINDOW	**ASSESSMENT NAME**
Close by December 9th	Check IN A

See the bottom of this document for a detailed description of the assessments as well as the parent/family resources.

UNIT	UNIT DURATION	PARENT/FAMILY RESOURCES	NORTH CAROLINA STANDARDS
Module 3 Multiplication and Division of Multi-Digit Numbers	22 lessons	Module 3 Family Math	NC.4.OA.3- Solve two-step word problems involving the four operations with whole numbers. • Use estimation strategies to assess reasonableness of answers. • Interpret remainders in word problems. • Represent problems using equations with a letter standing for the unknown quantity. NC.4.NBT.5- Multiply a whole number of up to three digits by a one-digit whole number, and multiply up to two two-digit numbers with place value understanding using area models, partial products, and the properties of operations. Use models to make connections and develop the algorithm. NC.4.NBT.6- Find whole-number quotients and remainders with up to three-digit dividends and one-digit divisors with place value understanding using rectangular arrays, area models, repeated subtraction, partial quotients, properties of operations, and/or the relationship between multiplication and division. NC.4.MD.8- Solve word problems involving addition and subtraction of time intervals that cross the hour.

Elementary School Teaching and Learning

2022-2023 Scope and Sequence

Mathematics – Grade 4

THIRD NINE WEEKS	OVERVIEW
	In module 4, students rename fractions greater than 1 as mixed numbers, generate equivalent fractions, compare fractions with unlike units, and add and subtract fractions and mixed numbers with like units. Students also multiply fractions and mixed numbers by whole numbers.
ASSESSMENTS	
ASSESSMENT WINDOW	**ASSESSMENT NAME**
January 3- February 2	aimsWeb+ Middle of the Year
Close by March 21st	Check In B

See the bottom of this document for a detailed description of the assessments as well as the parent/family resources.

UNIT	UNIT DURATION	PARENT/FAMILY RESOURCES	NORTH CAROLINA STANDARDS
Module 4 Foundations for Fraction Operations	34 lessons	Module 4 Family Math	NC.4.NF.1-Explain why a fraction is equivalent to another fraction by using area and length fraction models, with attention to how the number and size of the parts differ even though the two fractions themselves are the same size. NC.4.NF.2-Compare two fractions with different numerators and different denominators, using the denominators 2, 3, 4, 5, 6, 8, 10, 12, and 100. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with symbols >, =, or <, and justify the conclusions by: • Reasoning about their size and using area and length models. • Using benchmark fractions 0, ½, and a whole. • Comparing common numerator or common denominators. NC.4.NF.3-Understand and justify decompositions of fractions with denominators of 2, 3, 4, 5, 6, 8, 10, 12, and 100. • Understand addition and subtraction of fractions as joining and separating parts referring to the same whole. • Decompose a fraction into a sum of unit fractions and a sum of fractions with

			the same denominator in more than one way using area models, length models, and equations. • Add and subtract fractions, including mixed numbers with like denominators, by replacing each mixed number with an equivalent fraction, and/or by using properties of operations and the relationship between addition and subtraction. • Solve word problems involving addition and subtraction of fractions, including mixed numbers by writing equations from a visual representation of the problem. NC.4.NF.4-Apply and extend previous understandings of multiplication to: • Model and explain how fractions can be represented by multiplying a whole number by a unit fraction, using this understanding to multiply a whole number by any fraction less than one. • Solve word problems involving multiplication of a fraction by a whole number. NC.4.MD.2-Use multiplicative reasoning to convert metric measurements from a larger unit to a smaller unit using place value understanding, two column tables, and length models. NC.4.MD.4-Represent and interpret data using whole numbers. • Collect data by asking a question that yields numerical data. • Make a representation of data and interpret data in a frequency table, scaled bar graph, and/or line plot. • Determine whether a survey question will yield categorical or numerical data.

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Mathematics – Grade 4

FOURTH NINE WEEKS	OVERVIEW
	Module 5 extends students' understanding of tenths and hundredths as fractional units to recognizing tenths and hundredths as place value units. They compare decimal numbers and add mixed numbers and fractions with the unlike, but related, units of tenths and hundredths. In module 6, students identify attributes of polygons including side length and the presence or absence of pairs of parallel sides, pairs of perpendicular sides, and angle types. They use protractors to measure and draw angles accurately. Students also identify and draw lines of symmetry.
ASSESSMENTS	
ASSESSMENT WINDOW	**ASSESSMENT NAME**
Close by April 28th	Check In C
April 28- May 25	aimsWeb+ End of the Year

See the bottom of this document for a detailed description of the assessments as well as the parent/family resources.

UNIT	UNIT DURATION	PARENT/FAMILY RESOURCES	NORTH CAROLINA STANDARDS
Module 5 Place Value Concepts for Decimals	14 lessons	Module 5 Family Math	NC.4.NF.6-Use decimal notation to represent fractions. • Express, model and explain the equivalence between fractions with denominators of 10 and 100. • Use equivalent fractions to add two fractions with denominators of 10 or 100. • Represent tenths and hundredths with models, making connections between fractions and decimals. NC.4.NF.7-Compare two decimals to hundredths by reasoning about their size using area and length models, and recording the results of comparisons with the symbols >, =, or <. Recognize that comparisons are valid only when the two decimals refer to the same whole NC.4.MD.A.2-Use multiplicative reasoning to convert metric measurements from a larger unit to a smaller unit using place value understanding, two column tables, and length models.

Module 6 Angle Measures and Plane Figures	20 lessons	Module 6 Family Math	NC.4.MD.6-Develop an understanding of angles and angle measurement. Understand angles as geometric shapes that are formed wherever two rays share a common endpoint, and are measured in degrees. • Measure and sketch angles in whole-number degrees using a protractor. • Solve addition and subtraction problems to find unknown angles on a diagram in real-world and mathematical problems. NC.4.G.1-Draw and identify points, lines, line segments, rays, angles, and perpendicular and parallel lines. NC.4.G.2-Classify quadrilaterals and triangles based on angle measure, side lengths, and the presence or absence of parallel or perpendicular lines. NC.4.G.3-Recognize symmetry in a two-dimensional figure, and identify and draw lines of symmetry.

***Family Math Resources**

The Family Math Resources provide information by topic about what students are learning, examples of the concepts, and At-Home activities to align with classroom learning.

***aimsWeb+**

aimswebPlus is a universal screening assessment given to all students three times a year. Universal screeners are quick, standardized assessments that measure academic skills for reading and math. These measures help schools inform instruction, identify students at risk, and help teachers determine why the student may be at risk.

***NC Check-Ins Mathematics Grades 3-8**

NC Check-Ins are interim assessments aligned to North Carolina grade-level content standards in mathematics for grades 3–8 developed by the North Carolina Department of Public Instruction (NCDPI).

The main purpose of NC Check-Ins is to provide students, teachers, parents, and stakeholders with immediate in-depth action-data and a reliable estimate of students' current performance on the selected sub-set of content standards. A secondary purpose is derived from NC Check-Ins strong relationship with grade-level end-of-grade (EOG) summative assessments. Both EOGs and NC Check-Ins share a common item bank, and performance on the NC Check-Ins serves as an early indicator of a student's level of preparedness for the EOG summative assessment.

Grade 4 Mathematics NC Check-Ins 2.0 Assessed Standards		
A	**B**	**C**
NC.4.OA.1	NC.4.OA.3	NC.4.NBT.5
NC.4.NBT.2	NC.4.NBT.5	NC.4.NF.3
NC.4.NBT.4	NC.4.NBT.6	NC.4.NF.4
NC.4.NBT.7	NC.4.NF.1	NC.4.NF.6
NC.4.G.1 and NC.4.MD.3	NC.4.NF.2	NC.4.NF.7
		NC.4.G.2 and NC.4.MD.4