bridges in mathematics

GRADE 4

Bridges & Number Corner Third Edition

CORRELATIONS

Virginia Mathematics Standards of Learning

number corner

4 Number and Number Sense

Standard	Descriptor	Citations	
4.NS.1 The student will use place value understanding to read, write, and identify the place and value of each digit in a nine-digit whole number. The student will:			
4.NS.1.a	Read nine-digit whole numbers, presented in standard form, and represent the same number in written form.	**Bridges in Mathematics** Unit 4: M1–S1, M1–S2, M1–S3; M4–S1, M4–S2	**Number Corner** October: Calendar Collector November: Computational Fluency December: Calendar Collector
4.NS.1.b	Write nine-digit whole numbers in standard form when the numbers are presented orally or in written form.	**Bridges in Mathematics** Unit 4: M1–S1, M1–S2, M1–S3; M4–S1, M4–S2	**Number Corner** October: Calendar Collector November: Computational Fluency December: Calendar Collector
4.NS.1.c	Apply patterns within the base 10 system to determine and communicate, orally and in written form, the place and value of each digit in a nine-digit whole number (e.g., in 568,165,724, the 8 represents 8 millions and its value is 8,000,000).	**Bridges in Mathematics** Unit 2: M1–S1, M1–S2 Unit 4: M1–S1, M1–S2, M1–S3, M1–S5	**Number Corner** September: Calendar Grid October: Calendar Collector
4.NS.2 The student will demonstrate an understanding of the base 10 system to compare and order whole numbers up to seven digits. The student will:			
4.NS.2.a	Compare two whole numbers up to seven digits each, using words (*greater than*, *less than*, *equal to*, *not equal to*) and/or using symbols (>, <, =, ≠).	**Bridges in Mathematics** Unit 4: M1–S1, M1–S2, M1–S3, M1–S4; M4–S1, M4–S1 (Home Connection)	**Number Corner** October: Calendar Collector November: Computational Fluency

Standard	Descriptor	Citations
4.NS.2 The student will demonstrate an understanding of the base 10 system to compare and order whole numbers up to seven digits. The student will:		
4.NS.2.b	Order up to four whole numbers up to seven digits each, from least to greatest or greatest to least.	**Bridges in Mathematics** Unit 4: M4–S1 (Home Connections), M4–S2 (Work Places)
4.NS.3 The student will use mathematical reasoning and justification to represent, compare, and order fractions (proper, improper, and mixed numbers with denominators 12 or less), with and without models. The student will:		
4.NS.3.a	Compare and order no more than four fractions (proper or improper), and/or mixed numbers, with like denominators by comparing the number of parts (numerators) using fractions with denominators of 12 or less (e.g., $\frac{1}{5} < \frac{3}{5}$). Justify comparisons orally, in writing, or with a model.*	**Bridges in Mathematics** Unit 3: M1–S1, M1–S2, M1–S3, M1–S4 Unit 7: M1–S2, M1–S3, M1–S6, M1–S7
4.NS.3.b	Compare and order no more than four fractions (proper or improper), and/or mixed numbers, with like numerators and unlike denominators by comparing the size of the parts using fractions with denominators of 12 or less (e.g., $\frac{3}{8} < \frac{3}{5}$). Justify comparisons orally, in writing, or with a model.*	**Bridges in Mathematics** Unit 3: M1–S1, M1–S2, M1–S3, M1–S4 Unit 7: M1–S2, M1–S3, M1–S6, M1–S7

** On the state assessment, items measuring this objective are assessed without the use of a calculator.*

Standard	Descriptor	Citations	
4.NS.3	The student will use mathematical reasoning and justification to represent, compare, and order fractions (proper, improper, and mixed numbers with denominators 12 or less), with and without models. The student will:		
4.NS.3.c	Use benchmarks (e.g., 0, $\frac{1}{2}$ or 1) to compare and order no more than four fractions (proper or improper), and/or mixed numbers, with like and unlike denominators of 12 or less. Justify comparisons orally, in writing, or with a model.*	**Bridges in Mathematics** Unit 3: M1–S3, M1–S4; M2–S3 Unit 7: M1–S1, M1–S2, M1–S3, M1–S4	
4.NS.3.d	Compare two fractions (proper or improper) and/or mixed numbers using fractions with denominators of 12 or less, using the symbols >, <, and = (e.g., $\frac{2}{3} > \frac{1}{7}$). Justify comparisons orally, in writing, or with a model.*	**Bridges in Mathematics** Unit 3: M1–S1, M1–S2, M1–S3, M1–S4 Unit 7: M1–S2, M1–S3, M1–S6, M1–S7	
4.NS.3.e	Represent equivalent fractions with denominators of 12 or less, with and without models.*	**Bridges in Mathematics** Unit 3: M1–S4, M1–S5, M1–S6 Unit 7: M1–S1, M1–S4, M1–S5	**Number Corner** October: Calendar Grid March: Number Strings
4.NS.3.f	Compose and decompose fractions (proper and improper) and/or mixed numbers with denominators of 12 or less, in multiple ways, with and without models.*	**Bridges in Mathematics** Unit 3: M1–S5, M1–S6; M2–S2, M2–S4	**Number Corner** November: Calendar Collector January: Calendar Collector February: Number Strings

** On the state assessment, items measuring this objective are assessed without the use of a calculator.*

Standard	Descriptor	Citations
4.NS.3 The student will use mathematical reasoning and justification to represent, compare, and order fractions (proper, improper, and mixed numbers with denominators 12 or less), with and without models. The student will:		
4.NS.3.g	Represent the division of two whole numbers as a fraction given a contextual situation and a model (e.g., $\frac{3}{5}$ means means the same as 3 divided by 5 or $\frac{3}{5}$ represents the amount of muffin each of five children will receive when sharing three muffins equally).	**Number Corner** March: Number Strings May: Number Strings

** On the state assessment, items measuring this objective are assessed without the use of a calculator.*

4.NS.4 The student will use mathematical reasoning and justification to represent, compare, and order decimals through thousandths, with and without models. The student will:			
4.NS.4.a	Investigate and describe the ten-to-one place value relationship for decimals through thousandths, using concrete models (e.g., place value mats/charts, decimal squares, base 10 blocks).	*Note: Standard addressed only through hundredths.*	
		Bridges in Mathematics Unit 3: M3–S1, M3–S2, M3–S3; M4–S1 Unit 7: M2–S1, M2–S2, M2–S4	**Number Corner** October: Calendar Grid
4.NS.4.b	Represent and identify decimals expressed through thousandths, using concrete, pictorial, and numerical representations.	*Note: Standard addressed only through hundredths.*	
		Bridges in Mathematics Unit 3: M4–S1, M4–S2, M4–S3 Unit 7: M2–S1, M2–S2, M2–S4	**Number Corner** February: Computational Fluency

Standard	Descriptor	Citations	
4.NS.4	The student will use mathematical reasoning and justification to represent, compare, and order decimals through thousandths, with and without models. The student will:		
4.NS.4.c	Read and write decimals expressed through thousandths, using concrete, pictorial, and numerical representations.	*Note: Standard addressed only through hundredths.*	
		Bridges in Mathematics Unit 3: M4–S1, M4–S2, M4–S3 Unit 7: M2–S1, M2–S2, M2–S4	**Number Corner** February: Computational Fluency
4.NS.4.d	Identify and communicate, both orally and in written form, the place and value of each digit in a decimal through thousandths (e.g., given 0.385, the 8 is in the hundredths place and has a value of 0.08).	*Note: Standard addressed only through hundredths.*	
		Bridges in Mathematics Unit 3: M4–S1, M4–S2, M4–S3 Unit 7: M2–S1, M2–S2, M2–S4	**Number Corner** February: Computational Fluency
4.NS.4.e	Compare using symbols (<, >, =) and/or words (*greater than*, *less than*, *equal to*) and order (least to greatest and greatest to least), a set of no more than four decimals expressed through thousandths, using multiple strategies (e.g., benchmarks, place value, number lines). Justify comparisons with a model, orally, and in writing.	*Note: Standard addressed only through hundredths.*	
		Bridges in Mathematics Unit 3: M3–S2, M3–S3, M3–S4; M4–S2, M4–S3 Unit 7: M2–S2, M2–S3	**Number Corner** March: Computational Fluency

Standard	Descriptor	Citations	
4.NS.5	The student will reason about the relationship between fractions and decimals (limited to halves, fourths, fifths, tenths, and hundredths) to identify and represent equivalencies. The student will:		
4.NS.5.a	Represent fractions (proper or improper) and/or mixed numbers as decimals through hundredths, using multiple representations, limited to halves, fourths, fifths, tenths, and hundredths.*	*Note: Many denominators in sessions exceed the limits stated in the standard.*	
		Bridges in Mathematics Unit 3: M3–S1, M3–S2, M3–S3; M4–S1, M4–S2 Unit 7: M2–S1, M2–S3	**Number Corner** October: Calendar Grid
4.NS.5.b	Identify and model equivalent relationships between fractions (proper or improper) and/or mixed numbers and decimals, using halves, fourths, fifths, tenths, and hundredths.*	*Note: Many denominators in sessions exceed the limits stated in the standard.*	
		Bridges in Mathematics Unit 3: M3–S1, M3–S2, M3–S3; M4–S1, M4–S2 Unit 7: M2–S1, M2–S3	**Number Corner** October: Calendar Grid
4.NS.5.c	Write the decimal and fraction equivalent for a given model (e.g., $\frac{1}{4} = 0.25$ or $0.25 = \frac{1}{4}$; $1.25 = \frac{5}{4}$ or $1\frac{1}{4}$; $1.02 = \frac{102}{100}$ or $1\frac{2}{100}$.*	*Note: Many denominators in sessions exceed the limits stated in the standard.*	
		Bridges in Mathematics Unit 3: M3–S1, M3–S2, M3–S3; M4–S1, M4–S2 Unit 7: M2–S1, M2–S3	**Number Corner** October: Calendar Grid

** On the state assessment, items measuring this objective are assessed without the use of a calculator.*

4 Computation and Estimation

Standard	Descriptor	Citations	
4.CE.1	The student will estimate, represent, solve, and justify solutions to single-step and multistep problems, including those in context, using addition and subtraction with whole numbers. The student will:		
4.CE.1.a	Determine and justify whether an estimate or an exact answer is appropriate when solving contextual problems involving addition and subtraction with whole numbers. Refine estimates by adjusting the final amount, using terms such as *closer to*, *between*, and *a little more than*.	**Bridges in Mathematics** Unit 4: M1–S4, M1–S5, M1–S6, M1–S7; M2–S1, M2–S2	**Number Corner** November: Number Strings December: Number Strings
4.CE.1.b	Apply strategies (e.g., rounding to the nearest 100 or 1,000, using compatible numbers, other number relationships) to estimate a solution for single-step or multistep addition or subtraction problems with whole numbers, where addends or minuends do not exceed 10,000.*	**Bridges in Mathematics** Unit 4: M1–S1, M1–S2, M1–S4; M3–S1	**Number Corner** November: Solving Problems

** On the state assessment, items measuring this objective are assessed without the use of a calculator.*

Standard	Descriptor	Citations	
4.CE.1	The student will estimate, represent, solve, and justify solutions to single-step and multistep problems, including those in context, using addition and subtraction with whole numbers. The student will:		
4.CE.1.c	Apply strategies (e.g., place value, properties of addition, other number relationships) and algorithms, including the standard algorithm, to determine the sum or difference of two whole numbers, where addends and minuends do not exceed 10,000.*	**Bridges in Mathematics** Unit 4: M1–S4, M1–S5. M1–S7; M2–S1, M2–S2, M2–S3	**Number Corner** November: Number Strings December: Number Strings
4.CE.1.d	Estimate, represent, solve, and justify solutions to single-step and multistep contextual problems involving addition and subtraction with whole numbers where addends and minuends do not exceed 1,000,000.	**Bridges in Mathematics** Unit 4: M1–S4, M1–S5, M1–S6, M1–S7; M2–S1, M2–S2, M2–S3	**Number Corner** November: Number Strings

** On the state assessment, items measuring this objective are assessed without the use of a calculator.*

Standard	Descriptor	Citations	
4.CE.2	The student will estimate, represent, solve, and justify solutions to single-step and multistep problems, including those in context, using multiplication with whole numbers, and single-step problems, including those in context, using division with whole numbers; and recall with automaticity the multiplication facts through 12 × 12 and the corresponding division facts. The student will:		
4.CE.2.a	Determine and justify whether an estimate or an exact answer is appropriate when solving contextual problems involving multiplication and division of whole numbers. Refine estimates by adjusting the final amount, using terms such as *closer to*, *between*, and *a little more than*.	**Bridges in Mathematics** Unit 1: M1–S5, M1–S6 Unit 2: M1–S4; M2–S1; M4–S3, M4–S4 Unit 6: M1–S1, M1–S5	
4.CE.2.b	Recall with automaticity the multiplication facts through 12 × 12 and the corresponding division facts.*	**Bridges in Mathematics** Unit 1: M1–S1, M1–S2, M1–S3, M1–S4; M2–S1, M2–S2, M2–S3	**Number Corner** September: Number Strings, Solving Problems
4.CE.2.c	Create an equation using addition, subtraction, multiplication, and division to represent the relationship between equivalent mathematical expressions (e.g., 4 × 3 = 2 × 6; 10 + 8 = 36 ÷ 2; 12 × 4 = 60 – 12).	**Bridges in Mathematics** Unit 2: M1–S2 (Home Connections) Unit 6: M1–S6, M1–S7 Unit 7: M3–S4, M3–S5	**Number Corner** October: Solving Problems November: Solving Problems January: Solving Problems

** On the state assessment, items measuring this objective are assessed without the use of a calculator.*

Standard	Descriptor	Citations	
4.CE.2	The student will estimate, represent, solve, and justify solutions to single-step and multistep problems, including those in context, using multiplication with whole numbers, and single-step problems, including those in context, using division with whole numbers; and recall with automaticity the multiplication facts through 12 × 12 and the corresponding division facts. The student will:		
4.CE.2.d	Identify and use the appropriate symbol to distinguish between expressions that are equal and expressions that are not equal, using addition, subtraction, multiplication, and division (e.g., 4 × 12 = 8 × 6 and 64 ÷ 8 ≠ 8 × 8).	*The grade 3 curriculum addresses 4.CE.2.d in the following section:* **Bridges in Mathematics** Unit 7: M3–S4 (Home Connections)	
4.CE.2.e	Determine all factor pairs for a whole number 1 to 100, using concrete, pictorial, and numerical representations.	**Bridges in Mathematics** Unit 1: M2–S1; M2–S2, M2–S3, M2–S5; M3–S1, M3–S2 Unit 2: M1–S1	**Number Corner** September: Computational Fluency
4.CE.2.f	Determine common factors and the greatest common factor of no more than three numbers.	**Bridges in Mathematics** Unit 1: M2–S1; M2–S2, M2–S3, M2–S5; M3–S1, M3–S2	**Number Corner** September: Computational Fluency, Solving Problems
		Note: Greatest common factor is addressed in grade 5 in the following sections: **Bridges in Mathematics** Unit 2: M4–S1, M4–S2, M4–S3	

Standard	Descriptor	Citations	
4.CE.2	The student will estimate, represent, solve, and justify solutions to single-step and multistep problems, including those in context, using multiplication with whole numbers, and single-step problems, including those in context, using division with whole numbers; and recall with automaticity the multiplication facts through 12 × 12 and the corresponding division facts. The student will:		
	4.CE.2.g Apply strategies (e.g., rounding, place value, properties of multiplication and/or addition) and algorithms, including the standard algorithm, to estimate and determine the product of two whole numbers when given:		
4.CE.2.g.i	a two-digit factor and a one-digit factor;*	**Bridges in Mathematics** Unit 2: M2–S1, M2–S2, M2–S3; M3–S1, M3–S2, M3–S3	**Number Corner** September: Number Strings, Solving Problems
4.CE.2.g.ii	a three-digit factor and a one-digit factor;* or	**Bridges in Mathematics** Unit 2: M2–S3; M3–S2, M3–S3 Unit 6: M1–S1, M1–S2, M1–S3 Unit 7: M3–S1, M3–S2	
4.CE.2.g.iii	a two-digit factor and a two-digit factor.*	**Bridges in Mathematics** Unit 2: M2–S3 Unit 5: M3–S1 Unit 6: M1–S2, M1–S3 Unit 7: M3–S2, M3–S4; M4–S1, M4–S2	
4.CE.2.h	Estimate, represent, solve, and justify solutions to single-step and multistep contextual problems that involve multiplication with whole numbers.	**Bridges in Mathematics** Unit 2: M3–S2, M3–S3 Unit 5: M3–S1 Unit 6: M1–S1, M1–S2 Unit 7: M4–S1, M4–S2, M4–S3	**Number Corner** October: Number Strings January: Number Stings
4.CE.2.i	Apply strategies (e.g., rounding, compatible numbers, place value) and algorithms, including the standard algorithm, to estimate and determine the quotient of two whole numbers, given a one-digit divisor and a two- or three-digit dividend, with and without remainders.*	**Bridges in Mathematics** Unit 1: M1–S5, M1–S6 Unit 2: M4–S1, M4–S2, M4–S3 Unit 6: M1–S4, M1–S5, M1–S6	

** On the state assessment, items measuring this objective are assessed without the use of a calculator.*

Standard	Descriptor	Citations	
4.CE.2	The student will estimate, represent, solve, and justify solutions to single-step and multistep problems, including those in context, using multiplication with whole numbers, and single-step problems, including those in context, using division with whole numbers; and recall with automaticity the multiplication facts through 12 × 12 and the corresponding division facts. The student will:		
4.CE.2.j	Estimate, represent, solve, and justify solutions to single-step contextual problems involving division with whole numbers.	**Bridges in Mathematics** Unit 1: M1–S5, M1–S6 Unit 2: M4–S1, M4–S2, M4–S3 Unit 6: M1–S4, M1–S5, M1–S6	
4.CE.2.k	Interpret the quotient and remainder when solving a contextual problem.	**Bridges in Mathematics** Unit 1: M1–S5, M1–S6 Unit 2: M4–S1, M4–S2, M4–S3 Unit 6: M1–S4, M1–S5, M1–S6	
4.CE.3	The student will estimate, represent, solve, and justify solutions to single-step problems, including those in context, using addition and subtraction of fractions (proper, improper, and mixed numbers with like denominators of 2, 3, 4, 5, 6, 8, 10, and 12), with and without models; and solve single-step contextual problems involving multiplication of a whole number (12 or less) and a unit fraction, with models. The student will:		
4.CE.3.a	Estimate and determine the sum or difference of two fractions (proper or improper) and/or mixed numbers, having like denominators limited to 2, 3, 4, 5, 6, 8, 10, and 12 (e.g., $\frac{3}{8} + \frac{3}{8}$, $2\frac{1}{5} + \frac{4}{5}$, $\frac{7}{4} - \frac{5}{4}$ and simplify the resulting fraction. Addition and subtraction with fractions may include regrouping.*	**Bridges in Mathematics** Unit 3: M2–S3, M2–S4, M2–S5, M2–S6 Unit 6: M4–S3	**Number Corner** February: Number Strings March: Calendar Collector April: Computational Fluency

** On the state assessment, items measuring this objective are assessed without the use of a calculator.*

Standard	Descriptor	Citations	
4.CE.3	The student will estimate, represent, solve, and justify solutions to single-step problems, including those in context, using addition and subtraction of fractions (proper, improper, and mixed numbers with like denominators of 2, 3, 4, 5, 6, 8, 10, and 12), with and without models; and solve single-step contextual problems involving multiplication of a whole number (12 or less) and a unit fraction, with models. The student will:		
4.CE.3.b	Estimate, represent, solve, and justify solutions to single-step contextual problems using addition and subtraction with fractions (proper or improper) and/or mixed numbers, having like denominators limited to 2, 3, 4, 5, 6, 8, 10, and 12, and simplify the resulting fraction. Addition and subtraction with fractions may include regrouping.	**Bridges in Mathematics** Unit 3: M2–S3, M2–S4, M2–S5, M2–S6 Unit 6: M4–S3	**Number Corner** February: Number Strings March: Calendar Collector April: Computational Fluency
4.CE.3.c	Solve single-step contextual problems involving multiplication of a whole number, limited to 12 or less, and a unit fraction (e.g., $6 \times \frac{1}{3}$, $\frac{1}{5} \times 8$, $2 \times \frac{1}{10}$), with models.*	**Bridges in Mathematics** Unit 3: M2–S6	**Number Corner** December: Solving Problems January: Calendar Collector May: Number Strings
		The grade 5 curriculum addresses 4.CE.3.c in the following sections:	
		Bridges in Mathematics Unit 5: M1–S2, M1–S3	
4.CE.3.d	Apply the inverse property of multiplication in models (e.g., use a visual fraction model to represent $\frac{4}{4}$ or 1 as the product of $4 \times \frac{1}{4}$.	*This standard is beyond the scope of the program.*	

** On the state assessment, items measuring this objective are assessed without the use of a calculator.*

Standard	Descriptor	Citations
4.CE.4 The student will estimate, represent, solve, and justify solutions to single-step and multistep problems, including those in context, using addition and subtraction of decimals through the thousandths, with and without models. The student will:		
	4.CE.4.a Apply strategies (e.g., rounding to the nearest whole number, using compatible numbers) and algorithms, including the standard algorithm, to estimate and determine the sum or difference of two decimals through the thousandths, with and without models, in which:*	
4.CE.4.a.i	decimals do not exceed the thousandths; and	**Bridges in Mathematics** Unit 6: M4–S3 Unit 7: M2–S1, M2–S2, M2–S3
		The grade 5 curriculum addresses 4.CE.4.a.i in the following sections:
		Bridges in Mathematics Unit 3: M2–S1, M2–S2
4.CE.4.a.ii	addends, subtrahends, and minuends are limited to four digits.	**Bridges in Mathematics** Unit 6: M4–S3 Unit 7: M2–S1, M2–S2, M2–S3
		The Grade 5 curriculum addresses 4.CE.4.a.ii in the following sections:
		Bridges in Mathematics Unit 3: M2–S1, M2–S2
4.CE.4.b	Estimate, represent, solve, and justify solutions to single-step and multistep contextual problems using addition and subtraction of decimals through the thousandths.	**Bridges in Mathematics** Unit 6: M4–S3 Unit 7: M2–S1, M2–S2, M2–S3
		The grade 5 curriculum addresses 4.CE.4.b in the following sections:
		Bridges in Mathematics Unit 3: M2–S1, M2–S2

** On the state assessment, items measuring this objective are assessed without the use of a calculator.*

4 Measurement and Geometry

Standard	Descriptor	Citations	
4.MG.1	The student will reason mathematically to solve problems, including those in context, that involve length, weight/mass, and liquid volume using U.S. Customary and metric units. The student will:		
	4.MG.1.a Determine an appropriate unit of measure to use when measuring liquid volume in both U.S. Customary (cup, pint, quart, gallon) and metric unit (milliliter, liter):		
4.MG.1.a.i	length in both U.S. Customary (inch, foot, yard, mile) and metric units (millimeter, centimeter, meter);	**Bridges in Mathematics** Unit 1: M4–S3 Unit 2: M1–S3 Unit 4: M3–S2 Unit 5: M3–S1, M3–S2 Unit 8: M3–S2	**Number Corner** April: Calendar Collector, Solving Problems
4.MG.1.a.ii	weight/mass in both U.S. Customary (ounce, pound) and metric units (gram, kilogram); and	**Bridges in Mathematics** Unit 1: M4–S1, M4–S2 (Home Connection), M4–S4 (Assessment) Unit 4: M3–S5 Unit 8: M3–S5, M3–S5 (Daily Practice), M3–S6	**Number Corner** May: Solving Problems
4.MG.1.a.iii	liquid volume in both U.S. Customary (cup, pint, quart, gallon) and metric units (milliliter, liter).	**Bridges in Mathematics** Unit 1: M4–S2 Unit 4: M3–S1, M3–S4, M3–S5 Unit 8: M2–S5 (Daily Practice); M3–S3 (Daily Practice)	**Number Corner** May: Solving Problems

Standard	Descriptor	Citations	
4.MG.1	The student will reason mathematically to solve problems, including those in context, that involve length, weight/mass, and liquid volume using U.S. Customary and metric units. The student will:		
	4.MG.1.b Estimate and measure:		
4.MG.1.b.i	length of an object to the nearest U.S. Customary unit ($\frac{1}{2}$ inch, $\frac{1}{4}$ inch, $\frac{1}{8}$ inch, foot, yard) and nearest metric unit (millimeter, centimeter, or meter);	**Bridges in Mathematics** Unit 1: M4–S3 Unit 2: M1–S3 Unit 4: M3–S2 Unit 8: M3–S2	**Number Corner** April: Calendar Collector, Solving Problems
4.MG.1.b.ii	weight/mass of an object to the nearest U.S. Customary unit (ounce, pound) and nearest metric unit (gram, kilogram); and	**Bridges in Mathematics** Unit 1: M4–S1 Unit 4: M3–S5 Unit 8: M3–S5, M3–S6	**Number Corner** May: Solving Problems
4.MG.1.b.iii	liquid volume to the nearest U.S. Customary unit (cup, pint, quart, gallon) and nearest metric unit (milliliter, liter).	**Bridges in Mathematics** Unit 1: M4–S2 Unit 4: M3–S1, M3–S4, M3–S5	**Number Corner** May: Solving Problems
4.MG.1.c	Compare estimates of length, weight/mass, or liquid volume with the actual measurements.	**Bridges in Mathematics** Unit 2: M1–S4 (Home Connections); M3–S4, M3–S5; M4–S5 (Home Connections) Unit 6: M4–S3 Unit 8: M3–S6	**Number Corner** October: Calendar Grid November: Solving Problems

Standard	Descriptor	Citations	
4.MG.1	The student will reason mathematically to solve problems, including those in context, that involve length, weight/mass, and liquid volume using U.S. Customary and metric units. The student will:		
	4.MG.1.d Given the equivalent measure of one unit, solve problems, including those in context, by determining the equivalent measures within the U.S. Customary system for:		
4.MG.1.d.i	length (inches and feet, feet and yards, inches and yards);	**Bridges in Mathematics** Unit 1: M4–S3 Unit 5: M3–S1, M3–S2 Unit 6: M2–S1, M2–S2, M2–S3 Unit 8: M3–S2, M3–S5	
4.MG.1.d.ii	weight/mass (ounces and pounds); and	**Bridges in Mathematics** Unit 1: M4–S1 Unit 4: M3–S5 Unit 7: M1–S2 (Home Connections) Unit 8: M1–S3	**Number Corner** May: Solving Problems
4.MG.1.d.iii	liquid volume (cups, pints, quarts, and gallons	**Bridges in Mathematics** Unit 1: M4–S2 Unit 4: M3–S4, M3–S5 Unit 6: M1–S6 Unit 8: M3–S4, M3–S5	**Number Corner** May: Solving Problems

Standard	Descriptor	Citations	
4.MG.2 The student will reason mathematically to solve problems, including those in context, that involve length, weight/mass, and liquid volume using U.S. Customary and metric units. The student will:			
	4.MG.2.a Solve single-step and multistep contextual problems involving elapsed time in hours and minutes, within a 12-hour period (within a.m., within p.m., and across a.m. and p.m.) when given:		
4.MG.2.a.i	the starting time and the ending time, determine the amount of time that has elapsed in hours and minutes;	**Bridges in Mathematics** Unit 4: M3–S1, M3–S3	**Number Corner** November: Calendar Grid
		The grade 3 curriculum addresses 4.MG.2.a.i in the following sections:	
		Bridges in Mathematics Unit 4: M2–S4, M2–S5	
4.MG.2.a.ii	the starting time and amount of elapsed time in hours and minutes, determine the ending time; or	**Bridges in Mathematics** Unit 4: M3–S1, M3–S3	**Number Corner** November: Calendar Grid
		The grade 3 curriculum addresses 4.MG.2.a.ii in the following sections:	
		Bridges in Mathematics Unit 4: M2–S4, M2–S5	
4.MG.2.a.iii	the ending time and the amount of elapsed time in hours and minutes, determine the starting time.	**Bridges in Mathematics** Unit 4: M3–S1, M3–S3	**Number Corner** November: Calendar Grid
		The grade 3 curriculum addresses 4.MG.2.a.iii in the following sections:	
		Bridges in Mathematics Unit 4: M2–S4, M2–S5	
4.MG.3 The student will use multiple representations to develop and use formulas to solve problems, including those in context, involving area and perimeter limited to rectangles and squares (in both U.S. Customary and metric units). The student will:			
4.MG.3.a	Use concrete materials and pictorial models to develop a formula for the area and perimeter of a rectangle (including a square).	**Bridges in Mathematics** Unit 5: M3–S1, M3–S2, M3–S3 Unit 6: M2–S1, M2–S2, M2–S3, M2–S5	
4.MG.3.b	Determine the area and perimeter of a rectangle when given the measure of two adjacent sides (in whole number units), with & without models.	**Bridges in Mathematics** Unit 5: M3–S1, M3–S2, M3–S3, M3–S4 Unit 6: M2–S2, M2–S3, M2–S4, M2–S5	

Standard	Descriptor	Citations	
4.MG.3 The student will use multiple representations to develop and use formulas to solve problems, including those in context, involving area and perimeter limited to rectangles and squares (in both U.S. Customary and metric units). The student will:			
4.MG.3.c	Determine the area and perimeter of a square when given the measure of one side (in whole number units), with and without models.	**Bridges in Mathematics** Unit 5: M3–S1, M3–S2, M3–S3, M3–S4 Unit 6: M2–S2, M2–S3, M2–S4, M2–S5	
4.MG.3.d	Use concrete materials and pictorial models to explore the relationship between area and perimeter of rectangles.	**Bridges in Mathematics** Unit 5: M3–S1, M3–S2, M3–S3, M3–S4 Unit 6: M2–S2, M2–S3, M2–S4, M2–S5	
4.MG.3.e	Identify and represent rectangles with the same perimeter and different areas or with the same area and different perimeters.	**Bridges in Mathematics** Unit 5: M3–S1, M3–S4 (Work Places) Unit 6: M1–S7 (Home Connections); M2–S1 (Home Connections)	
4.MG.3.f	Solve contextual problems involving area and perimeter of rectangles and squares.	**Bridges in Mathematics** Unit 5: M3–S2, M3–S3, M3–S4 Unit 6: M2–S2, M2–S3, M2–S4, M2–S5 Unit 8: M3–S2	
4.MG.4 The student will identify, describe, and draw points, rays, line segments, angles, and lines, including intersecting, parallel, and perpendicular lines. The student will:			
4.MG.4.a	Identify and describe points, lines, line segments, rays, and angles, including endpoints and vertices.	**Bridges in Mathematics** Unit 5: M1–S1, M1–S2, M1–S3, M1–S4, M1–S5, M1–S6; M2–S1	**Number Corner** February: Calendar Grid

Standard	Descriptor	Citations	
4.MG.4	The student will identify, describe, and draw points, rays, line segments, angles, and lines, including intersecting, parallel, and perpendicular lines. The student will:		
4.MG.4.b	Describe endpoints and vertices in relation to lines, line segments, rays, and angles.	**Bridges in Mathematics** Unit 5: M1–S1, M1–S2, M1–S3, M1–S4, M1–S5, M1–S6; M2–S1	**Number Corner** February: Calendar Grid
4.MG.4.c	Draw representations of points, line segments, rays, angles, and lines, using a ruler or straightedge.	**Bridges in Mathematics** Unit 5: M1–S1, M1–S2, M1–S3, M1–S4, M1–S5, M1–S6; M2–S1	**Number Corner** February: Calendar Grid
4.MG.4.d	Identify parallel, perpendicular, and intersecting lines and line segments in plane and solid figures, including those in context.	**Bridges in Mathematics** Unit 5: M2–S1, M2–S2, M2–S4, M2–S5, M2–S6	**Number Corner** February: Calendar Grid
4.MG.4.e	Use symbolic notation to name points, lines, line segments, rays, angles, and to describe parallel and perpendicular lines.	**Bridges in Mathematics** Unit 5: M1–S2, M1–S4; M2–S2	**Number Corner** February: Calendar Collector
		The grade 5 curriculum addresses 4.MG.4.e in the following sections:	
		Bridges in Mathematics Unit 6: M2–S1 (Home Connections)	

Standard	Descriptor	Citations	
4.MG.5 The student will classify and describe quadrilaterals (parallelograms, rectangles, squares, rhombi, and/or trapezoids) using specific properties and attributes. The student will:			
4.MG.5.a	Develop definitions for parallelograms, rectangles, squares, rhombi, and trapezoids through the exploration of properties and attributes.	**Bridges in Mathematics** Unit 5: M2–S1, M2–S2, M2–S4, M2–S5, M2–S6, M2–S6 (Home Connections); M4–S1	**Number Corner** February: Calendar Grid March: Solving Problems
4.MG.5.b	Identify and describe points, line segments, angles, and vertices in quadrilaterals.	**Bridges in Mathematics** Unit 5: M1–S2, M1–S3, M1–S4, M1–S5; M2–S2, M2–S4, M2–S5, M2–S6	**Number Corner** February: Calendar Grid
4.MG.5.c	Identify and describe parallel, intersecting, perpendicular, and congruent sides in quadrilaterals.	**Bridges in Mathematics** Unit 5: M2–S1, M2–S2, M2–S4, M2–S5, M2–S6	**Number Corner** February: Calendar Grid
	4.MG.5.d Compare, contrast, and classify quadrilaterals (parallelograms, rectangles, squares, rhombi, and/or trapezoids) based on the following properties and attributes:		
4.MG.5.d.i	parallel sides;	**Bridges in Mathematics** Unit 5: M2–S1, M2–S2, M2–S4, M2–S5, M2–S6	**Number Corner** February: Calendar Grid
4.MG.5.d.ii	perpendicular sides;	**Bridges in Mathematics** Unit 5: M2–S1, M2–S2, M2–S4, M2–S5, M2–S6	**Number Corner** February: Calendar Grid
4.MG.5.d.iii	congruence of sides; and	**Bridges in Mathematics** Unit 1: M2–S1 Unit 5: M2–S5, M2–S4 (Home Connections)	
4.MG.5.d.iv	number of right angles.	**Bridges in Mathematics** Unit 5: M1–S2, M1–S3; M4–S1, M4–S3 (Home Connections) Unit 6: M1–S1 (Daily Practice) Unit 8: M3–S5 (Home Connection)	

Standard	Descriptor	Citations	
4.MG.5 The student will classify and describe quadrilaterals (parallelograms, rectangles, squares, rhombi, and/or trapezoids) using specific properties and attributes. The student will:			
4.MG.5.e	Denote properties of quadrilaterals and identify parallel sides, congruent sides, and right angles by using geometric markings.	**Bridges in Mathematics** Unit 5: M1–S2, M1–S4; M2–S2	**Number Corner** February: Calendar Collector
		The grade 5 curriculum addresses 4.MG.5.e in the following sections:	
		Bridges in Mathematics Unit 6: M2–S1 (Home Connections)	
4.MG.5.f	Use symbolic notation to name line segments and angles in quadrilaterals.	**Bridges in Mathematics** Unit 5: M1–S2, M1–S4; M2–S2	**Number Corner** February: Calendar Collector
		The grade 5 curriculum addresses 4.MG.5.f in the following sections:	
		Bridges in Mathematics Unit 6: M2–S1 (Home Connections)	

Standard	Descriptor	Citations
4.MG.6 The student will identify, describe, compare, and contrast plane and solid figures according to their characteristics (number of angles, vertices, edges, and the number and shape of faces), with and without models. The student will:		
4.MG.6.a	Identify concrete models and pictorial representations of solid figures (cube, rectangular prism, square pyramid, sphere, cone, and cylinder).	*The grade 5 curriculum partially addresses 4.MG.6.a in the following sections:* **Bridges in Mathematics** Unit 6: M3–S1, M3–S2, M3–S3
4.MG.6.b	Identify and describe solid figures (cube, rectangular prism, square pyramid, and sphere) according to their characteristics (number of angles, vertices, edges, and by the number and shape of faces).	*The grade 5 curriculum partially addresses 4.MG.6.b in the following sections:* **Bridges in Mathematics** Unit 6: M3–S1, M3–S2, M3–S3
4.MG.6.c	Compare and contrast plane and solid figures (limited to circles, squares, triangles, rectangles, spheres, cubes, square pyramids, and rectangular prisms) according to their characteristics (number of sides, angles, vertices, edges, and the number and shape of faces).	*The grade 5 curriculum partially addresses 4.MG.6.c in the following sections:* **Bridges in Mathematics** Unit 6: M3–S1, M3–S2, M3–S3

4 Probability and Statistics

Standard	Descriptor	Citations
4.PS.1 The student will identify, describe, compare, and contrast plane and solid figures according to their characteristics (number of angles, vertices, edges, and the number and shape of faces), with and without models. The student will:		
4.PS.1.a	Formulate questions that require the collection or acquisition of data.	*Note: These sessions do not have a focus on line graphs.* **Bridges in Mathematics** Unit 8: M1–S4; M2–S2, M2–S5; M3–S4 **Number Corner** April: Solving Problems *The grade 5 curriculum addresses 4.PS.1.a in the following sections:* **Bridges in Mathematics** Unit 6: M1–S6 Unit 8: M1–S2, M1–S3
4.PS.1.b	Determine the data needed to answer a formulated question and collect or acquire existing data (limited to 10 or fewer data points) using various methods (e.g., observations, measurements, experiments).	*Note: These sessions do not have a focus on line graphs.* **Bridges in Mathematics** Unit 8: M1–S4; M2–S2, M2–S5; M3–S4 **Number Corner** April: Solving Problems *The grade 5 curriculum addresses 4.PS.1.b in the following sections:* **Bridges in Mathematics** Unit 6: M1–S6 Unit 8: M1–S2, M1–S3
4.PS.1.c	Organize and represent a data set using line graphs with a title and labeled axes with whole number increments, with and without the use of technology tools.	*Note: These sessions do not have a focus on line graphs.* **Bridges in Mathematics** Unit 6: M4–S2 Unit 8: M1–S1; M3–S4 **Number Corner** April: Solving Problems *The grade 5 curriculum addresses 4.PS.1.b in the following sections:* **Bridges in Mathematics** Unit 6: M1–S6 Unit 8: M1–S2, M1–S3

Standard	Descriptor	Citations	
4.PS.1 The student will identify, describe, compare, and contrast plane and solid figures according to their characteristics (number of angles, vertices, edges, and the number and shape of faces), with and without models. The student will:			
	4.PS.1.d Analyze data represented in line graphs and communicate results orally and in writing:		
4.PS.1.d.i	describe the characteristics of the data represented in a line graph and the data as a whole (e.g., the time period when the temperature increased the most);	*Note: These sessions do not have a focus on line graphs.*	
		Bridges in Mathematics Unit 6: M4–S2 Unit 8: M1–S1; M3–S4	**Number Corner** April: Solving Problems
		The grade 5 curriculum addresses 4.PS.1.d.i in the following sections:	
		Bridges in Mathematics Unit 6: M1–S6 Unit 8: M1–S2, M1–S3	
4.PS.1.d.ii	identify parts of the data that have special characteristics and explain the meaning of the greatest, the least, or the same (e.g., the highest temperature shows the warmest day);	*Note: These sessions do not have a focus on line graphs.*	
		Bridges in Mathematics Unit 6: M4–S2 Unit 8: M1–S1; M3–S4	**Number Corner** April: Solving Problems
		The grade 5 curriculum addresses 4.PS.1.d.ii in the following sections:	
		Bridges in Mathematics Unit 6: M1–S6 Unit 8: M1–S2, M1–S3	
4.PS.1.d.iii	make inferences about data represented in line graphs;	*Note: These sessions do not have a focus on line graphs.*	
		Bridges in Mathematics Unit 6: M4–S2 Unit 8: M1–S1; M3–S4	**Number Corner** April: Solving Problems
		The grade 5 curriculum addresses 4.PS.1.d.iii in the following sections:	
		Bridges in Mathematics Unit 6: M1–S6 Unit 8: M1–S2, M1–S3	

Standard	Descriptor	Citations	
4.PS.1 The student will identify, describe, compare, and contrast plane and solid figures according to their characteristics (number of angles, vertices, edges, and the number and shape of faces), with and without models. The student will:			
	4.PS.1.d Analyze data represented in line graphs and communicate results orally and in writing:		
4.PS.1.d.iv	draw conclusions about the data and make predictions based on the data to answer questions; and	*Note: These sessions do not have a focus on line graphs.*	
		Bridges in Mathematics Unit 6: M4–S2 Unit 8: M1–S1; M3–S4	**Number Corner** April: Solving Problems
		The grade 5 curriculum addresses 4.PS.1.d.iv in the following sections:	
		Bridges in Mathematics Unit 6: M1–S6 Unit 8: M1–S2, M1–S3	
4.PS.1.d.v	solve single-step and multistep addition and subtraction problems using data from line graphs.	*Note: These sessions do not have a focus on line graphs.*	
		Bridges in Mathematics Unit 6: M4–S2 Unit 8: M1–S1; M3–S4	**Number Corner** April: Solving Problems
		The grade 5 curriculum addresses 4.PS.1.d.v in the following sections:	
		Bridges in Mathematics Unit 6: M1–S6 Unit 8: M1–S2, M1–S3	
4.PS.2 The student will model and determine the probability of an outcome of a simple event. The student will:			
4.PS.2.a	Describe probability as the degree of likelihood of an outcome occurring using terms such as *impossible*, *unlikely*, *equally likely*, *likely*, and *certain*.	*This standard is beyond the scope of the program.*	

Standard	Descriptor	Citations
4.PS.2 The student will model and determine the probability of an outcome of a simple event. The student will:		
4.PS.2.b	Model and determine all possible outcomes of a given simple event where there are no more than 24 possible outcomes, using a variety of manipulatives (e.g., coins, two-sided counters, number cubes, spinners).	*This standard is beyond the scope of the program.*
4.PS.2.c	Write the probability of a given simple event as a fraction between 0 and 1, where there are no more than 24 possible outcomes.	*This standard is beyond the scope of the program.*
4.PS.2.d	Determine the likelihood of an event occurring and relate it to its whole number or fractional representation (e.g., impossible or zero; equally likely; certain or one).	*This standard is beyond the scope of the program.*
4.PS.2.e	Create a model or contextual problem to represent a given probability.	*This standard is beyond the scope of the program.*

4 Patterns, Functions, and Algebra

Standard	Descriptor	Citations	
4.PFA.1	The student will identify, describe, extend, and create increasing and decreasing patterns (limited to addition, subtraction, and multiplication of whole numbers), including those in context, using various representations. The student will:		
4.PFA.1.a	Identify, describe, extend, and create increasing and decreasing patterns using various representations (e.g., objects, pictures, numbers, number lines, input/output tables, and function machines).	**Bridges in Mathematics** Unit 1: M2–S1, M2–S2 Unit 2: M2–S5	**Number Corner** September: Calendar Grid December: Calendar Grid January: Calendar Grid May: Calendar Grid
4.PFA.1.b	Analyze an increasing or decreasing single-operation numerical pattern found in lists, input/output tables, or function machines and generalize the change to identify the rule, extend the pattern, or identify missing terms.	**Bridges in Mathematics** Unit 1: M2–S1, M2–S2 Unit 2: M2–S5	**Number Corner** September: Calendar Grid December: Calendar Grid January: Calendar Grid May: Calendar Grid
4.PFA.1.c	Given a rule, create increasing and decreasing patterns using numbers and input/output tables (including function machines).	*Note: The curriculum does not use input/output language.*	
		Bridges in Mathematics Unit 1: M2–S1, M2–S2 Unit 2: M2–S5	**Number Corner** September: Calendar Grid December: Calendar Grid January: Calendar Grid May: Calendar Grid
4.PFA.1.d	Solve contextual problems that involve identifying, describing, and extending increasing and decreasing patterns using single-operation input and output rules.	*Note: The curriculum does not use input/output language.*	
		Bridges in Mathematics Unit 1: M2–S1, M2–S2 Unit 2: M2–S5	**Number Corner** September: Calendar Grid December: Calendar Grid January: Calendar Grid May: Calendar Grid